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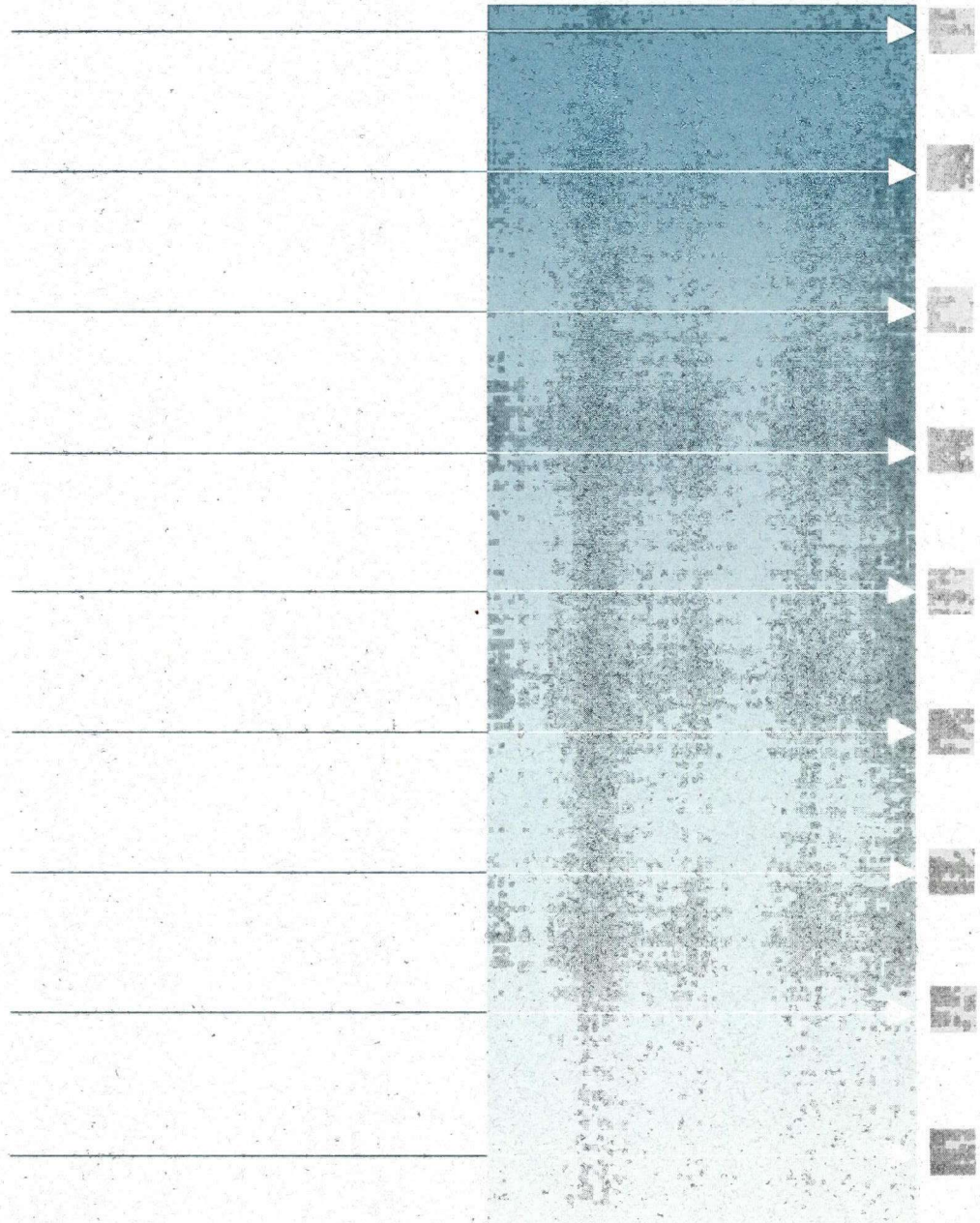
SOLID WASTE INFORMATION SYSTEM

Metro Charter Committee
P O Box 9236 - Portland, OR 97207

- ***Delivery, disposal and waste reduction data***
- *November 15, 1990*

QUARTERLY REPORT *Third Quarter 1990*



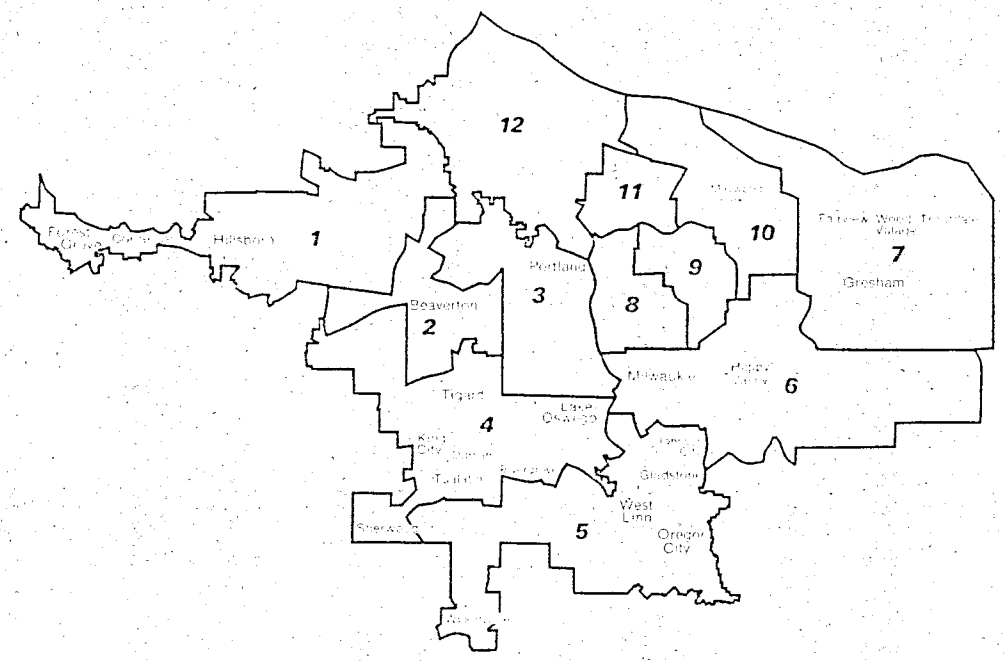
METRO

The Metropolitan Service District, your regional government, handles regionwide concerns in the urban areas of Clackamas, Multnomah and Washington counties. Metro is responsible for solid waste management, operation of the Metro Washington Park Zoo, transportation planning, urban growth boundary management, technical services to local governments and, through the Metropolitan Exposition-Recreation commission, management of the Oregon Convention Center, Memorial Coliseum, Civic Stadium and the Portland Center for the Performing Arts.

Executive officer
Rena Cusma

Councilors by district are:

District 1	David Saucy Jr.
District 2	Lawrence Bauer
District 3	Jim Gardner
District 4	Richard Devlin
District 5	Tom DeJardin
District 6	George Van Bergen
District 7	Ruth McFarland
District 8	Judy Wyers
District 9	Tanya Collier
District 10	Roger Buchanan
District 11	David Knowles
District 12	Gary Hansen



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SOLID WASTE INFORMATION SYSTEM

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Metropolitan Service District
Solid Waste Department
Bob Martin, director

2000 SW First Ave.
Portland, OR 97201-5398
(503) 221-1646

For further information, contact Jeff Stone or Terry Petersen, Metro Solid Waste department.

METRO

Table of Contents

I. Summary and Introduction

The SWIS Program

The Solid Waste Information System (SWIS) is a program for integrating data on waste generation, delivery, disposal, and recycling. Its primary functions are reporting historical solid waste data and forecasting future waste flows. Applications of the information include facility management and developing waste reduction programs.

The information produced by SWIS is reported on a quarterly schedule. Each report includes delivery, disposal, and waste reduction data for the region encompassing Clackamas, Multnomah, and Washington Counties. Individual reports will include other solid waste data and analyses as appropriate.

The reports are expected to serve several purposes. They are a source of solid waste data that is updated and published on a regular schedule. They will also provide an opportunity for reviewing the assumptions and methods used by METRO to forecast waste flow within the region.

This is the fourth SWIS report. Forecasts and other data in this report supercede data in previous reports.

Delivery Tonnage

This report includes actual data through the fiscal quarter ending September 30, 1990, and forecasts through the 1992 calendar year. The table at right summarizes the tons of solid waste delivered to facilities. See Chapter II for the following information: (1) a map showing the location of regional facilities, (2) diagrams showing the annual flow of waste among facilities, and (3) monthly and quarterly tonnages for each facility.

Summary of Tons Delivered to Facilities

TONS PER CALENDAR YEAR (expected forecast)

FACILITY NAME	1988	1989	1990	1991	1992
Columbia Ridge Landfill	Not Open		352,700	688,500	597,000
East County Recycling Center	5,696	20,904	34,300	33,700	33,200
Forest Grove Transfer Station	38,074	61,069	63,400	63,100	108,500
Hillsboro Landfill	66,438	101,622	157,100	160,700	167,000
Hillsboro Reload Facility	0	14,953	16,200	16,200	4,500
Killingsworth Fast Disposal Landfill	174,426	98,659	Closed		
Lakeside Reclamation Landfill (Grabhorn)	49,919	67,622	69,200	70,800	73,600
Marion County Energy Recovery Facility	28,693	14,425	17,800	27,500	27,500
Metro Northwest Transfer Station	Not Open			359,100	332,700
Metro South Transfer Station	304,401	340,995	369,800	387,200	251,600
Metro-Riedel Mass Composting Facility	Not Open			88,200	185,000
Oregon Processing And Recovery Center	10,912	9,366	6,600	6,600	6,600
Other Needed Facilities	Not Needed Until Approximately July 1992				53,800
Riverbend Landfill	56,989	78,257	81,600	61,900	64,300
St. Johns Landfill	677,291	715,577	473,000	34,900	Closed
All Facilities (less than the sum of the above because waste transferred from one facility to another is shown above but not double-counted below):					
	1,065,017	1,108,756	1,195,900	1,213,300	1,221,300
Disposed Tons	1,033,671	1,068,656	1,138,900	1,025,100	910,200
Recovered Tons	31,346	40,100	57,000	187,900	311,100

II. Forecast Revisions

Revision of 1990 Forecast

The following table compares the current forecasts for 1990 to those made in the August 15th SWIS report.

Facility Name			<----------Calendar Year 1990---------->			
	Calendar Year 1988	Calendar Year 1989	August 15 Estimate	Current Estimate	Percent Change	Assumed reason for change.
All Facilities (see Note 1)	1,065,017	1,108,756	1,220,400	1,195,869	-2%	
Columbia Ridge Sanitary Landfill	0	0	347,500	352,704	1%	
East County Recycling Center	5,696	20,904	32,600	34,255	5%	
Forest Grove Transfer Station	38,074	61,069	64,700	63,357	-2%	
Hillsboro Landfill	66,438	101,622	145,800	157,112	8%	Increases in building activity in Washington County.
Hillsboro Reload Facility	0	14,953	17,400	16,249	-7%	
Killingsworth Fast Disposal Landfill	174426	98659	0	0	0%	
Lakeside Reclamation Landfill (Grabhorn)	49,919	67,622	68,500	69,215	1%	
Marion County Energy Recovery Facility	28,693	23,064	25,300	17,770	-30%	Decrease in transfers of waste from Metro South facility.
Metro Northwest Transfer Station	0	0	0	0	0%	
Metro South Transfer Station	304,401	340,995	377,500	369,789	-2%	
METRO-Riedel Mass Composting Facility	0	0	0	0	0%	
Oregon Processing And Recovery Center	10,912	9,366	6,800	6,551	-4%	
Riverbend Landfill	56,989	78,257	83,100	81,629	-2%	
St. Johns Landfill	677,291	715,577	499,400	473,007	-5%	

Note 1: Tonnage is less than the sum of the individual facilities because tonnage transferred among facilities is included in each facility's totals.

Revision of 1991 Forecast

The following table compares the current forecasts for 1991 to those made in the August 15th SWIS report.

Facility Name	Tonnage To Each Facility				Percent Change From August 15 Report			Assumed reason for change in expected tonnage.
	Expected Per August 15 Report	Current SWIS Report						
		Historical Estimate	Expected Estimate	Possible Estimate	Historical Estimate	Expected Estimate	Possible Estimate	
All Facilities (see Note 1)	1,169,900	1,245,900	1,213,300	1,137,200	6%	4%	-3%	
Columbia Ridge Sanitary Landfill	553,700	707,400	688,500	636,600	28%	24%	15%	More tonnage through Metro South facility, less through OPRC.
East County Recycling Center	32,600	35,000	33,700	32,300	7%	3%	-1%	
Forest Grove Transfer Station	45,200	66,600	63,100	60,300	47%	40%	33%	Current forecast assumes Forest Grove processes 9% of regional general purpose waste.
Hillsboro Landfill	139,800	165,200	160,700	153,700	18%	15%	10%	Continuation of trend established in 1990.
Hillsboro Reload Facility	0	17,100	16,200	15,500				Current forecast assumes the facility remains open.
Lakeside Reclamation Landfill (Grabhorn)	65,600	72,800	70,800	67,700	11%	8%	3%	
Marion County Energy Recovery Facility	35,000	27,500	27,500	27,500	-21%	-21%	-21%	Less tonnage transferred from Metro South facility.
Metro Northwest Transfer Station	402,300	359,100	359,100	316,500	-11%	-11%	-21%	More tonnage through Metro South.
Metro South Transfer Station	250,000	406,000	387,200	369,900	62%	55%	48%	No longer assume 250,000 tons will be processed during 1991.
METRO-Riedel Mass Composting Facility	88,200	88,200	88,200	88,200	0%	0%	0%	
Oregon Processing And Recovery Center	79,300	6,900	6,600	6,300	-91%	-92%	-92%	Assumption that facility will not expand to 100,000 tons/year.
Riverbend Landfill	62,700	62,000	61,900	61,800	-1%	-1%	-1%	
St. Johns Landfill	40,800	37,100	34,900	33,300	-9%	-14%	-18%	Lower estimate for October-December 1990.

Note 1: Tonnage is less than the sum of the individual facilities because tonnage transferred among facilities is included in each facility's totals.

Revision of 1992 Forecast

The following table compares the current forecasts for 1992 to those made in the August 15th SWIS report.

Facility Name	Tonnage To Each Facility				Percent Change From August 15 Report			Assumed reason for change in expected tonnage.
	Expected Per	Current SWIS Report						
	August 15 Report	Historical Estimate	Expected Estimate	Possible Estimate	Historical Estimate	Expected Estimate	Possible Estimate	
All Facilities (see Note 1)	1,195,200	1,308,300	1,221,300	1,139,600	9%	2%	-5%	
Columbia Ridge Sanitary Landfill	543,200	673,200	597,000	551,800	24%	10%	2%	More tonnage to Metro Faclities, less to OPRC.
East County Recycling Center	33,200	35,000	33,200	30,900	5%	0%	-7%	
Forest Grove Transfer Station	40,500	96,300	108,500	108,500	138%	168%	168%	Assumed increase to 120,000 tons/year as of July 1, 1992.
Hillsboro Landfill	142,100	173,500	167,000	155,800	22%	18%	10%	Continuation of 1990 trend.
Hillsboro Reload Facility	0	9,400	4,500	4,200				Now assume facilitiy remains open until July 1, 1992.
Lakeside Reclamation Landfill (Grabhorn)	66,700	76,400	73,600	68,700	15%	10%	3%	Continuation of 1990 trend.
Marion County Energy Recovery Facility	35,000	27,500	27,500	27,500	-21%	-21%	-21%	Less tonnge from Metro South facility.
Metro Northwest Transfer Station	349,600	365,900	332,700	270,000	5%	-5%	-23%	
Metro South Transfer Station	250,000	305,900	251,600	251,300	22%	1%	1%	
METRO-Riedel Mass Composting Facility	185,000	185,000	185,000	185,000	0%	0%	0%	
Oregon Processing And Recovery Center	100,000	7,200	6,600	6,300	-93%	-93%	-94%	Expansion to 100,000 tons delayed.
Other Needed Facilities or Expansion		53,800	53,800	53,800				Potential needed expansion.
Riverbend Landfill	58,300	70,100	64,300	59,900	20%	10%	3%	Error in previous forecast.
St. Johns Landfill	0	0	0	0	0%	0%	0%	

Note 1: Tonnage is less than the sum of the individual facilities because tonnage transferred among facilities is inculded in each facility's totals.

Forecast Comparisons For 1990

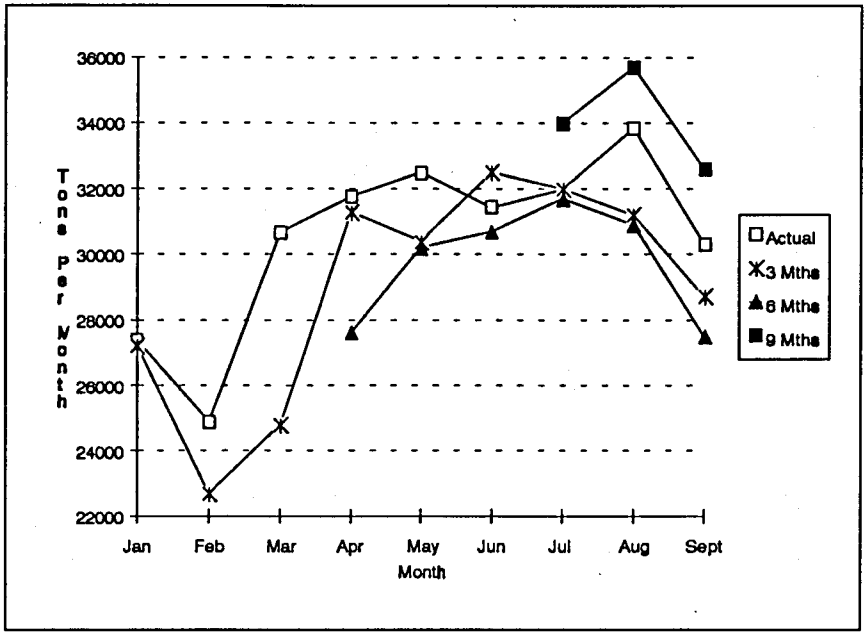
This section compares actual delivery tonnage to earlier forecasts.

Each graph shows the actual delivery tonnage and the forecasts that were made 1 quarter, 2 quarters, and 3 quarters prior to the delivery (labeled 3, 6, and 9 months respectively on the graph).

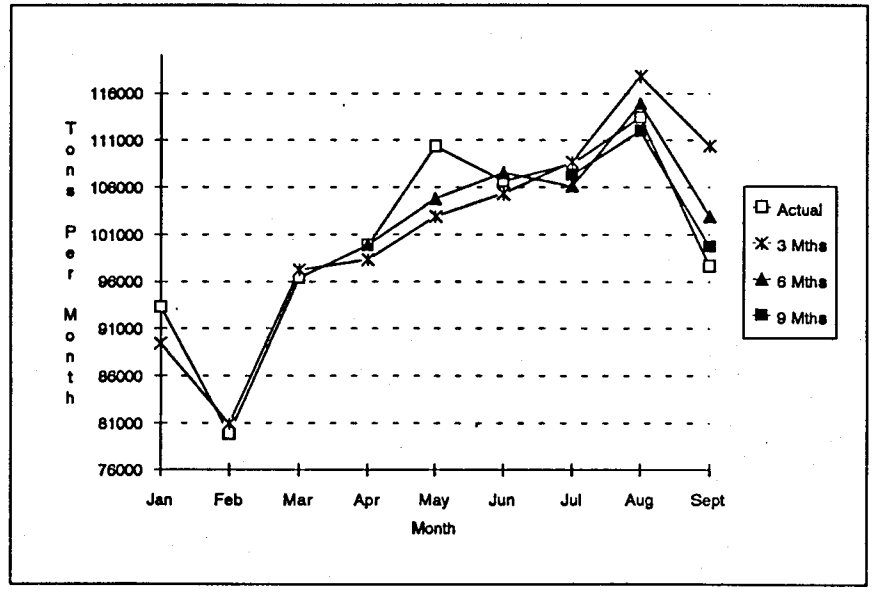
For example, the forecast made one quarter earlier for July, August, and September was made in the second quarter 1990 SWIS report (published August 15), the forecast made two quarters earlier for July, August, and September was made in the first quarter 1990 SWIS report (published May 15), and the forecast made three quarters earlier for July, August, and September was made in the last quarter 1989 SWIS report (published February 15). February 15 was the first SWIS forecast. Therefore, no forecasts have been made four quarters earlier.

Note that the scale of the y-axis is different on each graph.

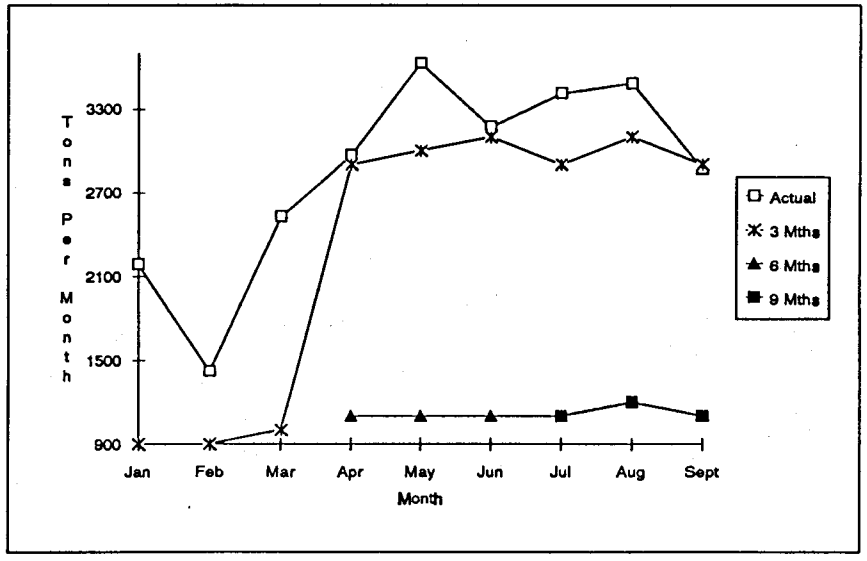
Columbia Ridge Landfill



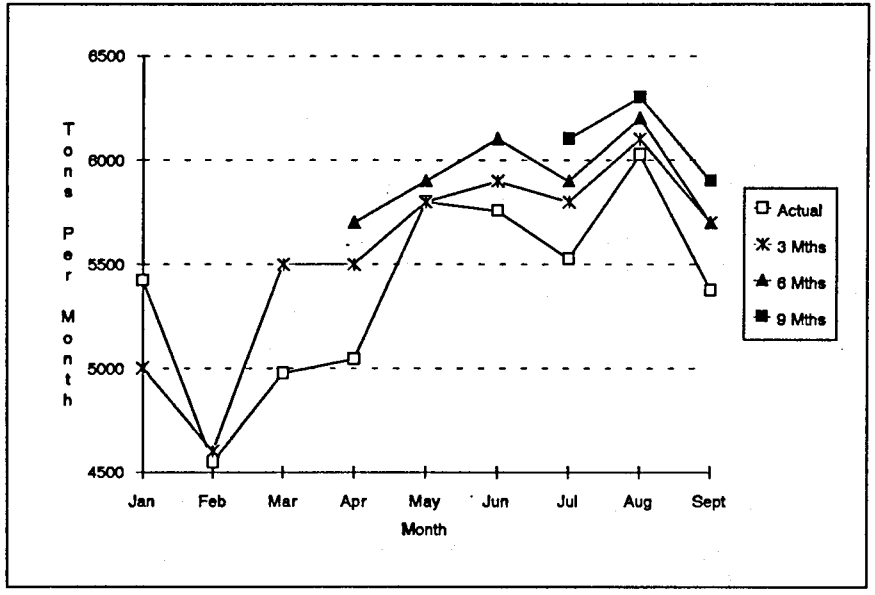
All Facilities



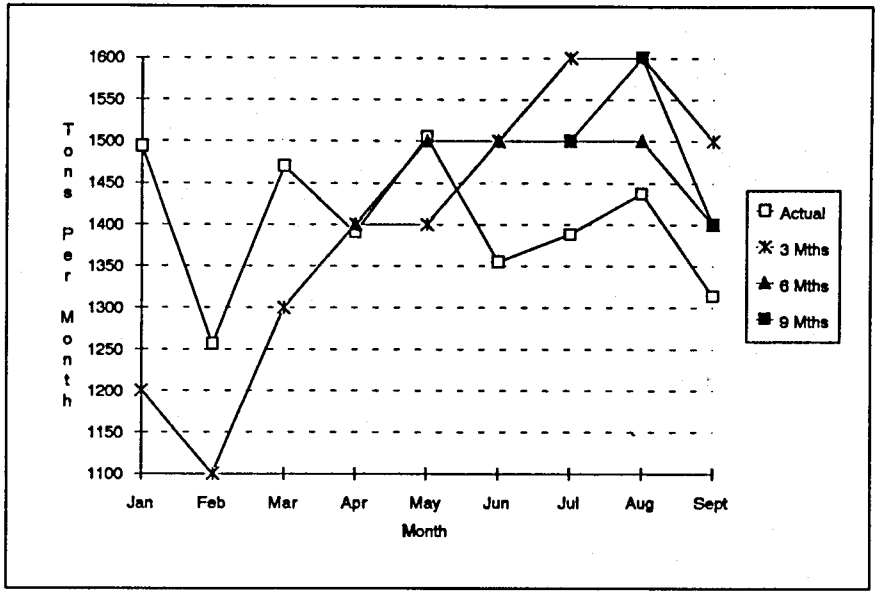
East County Recycling Center



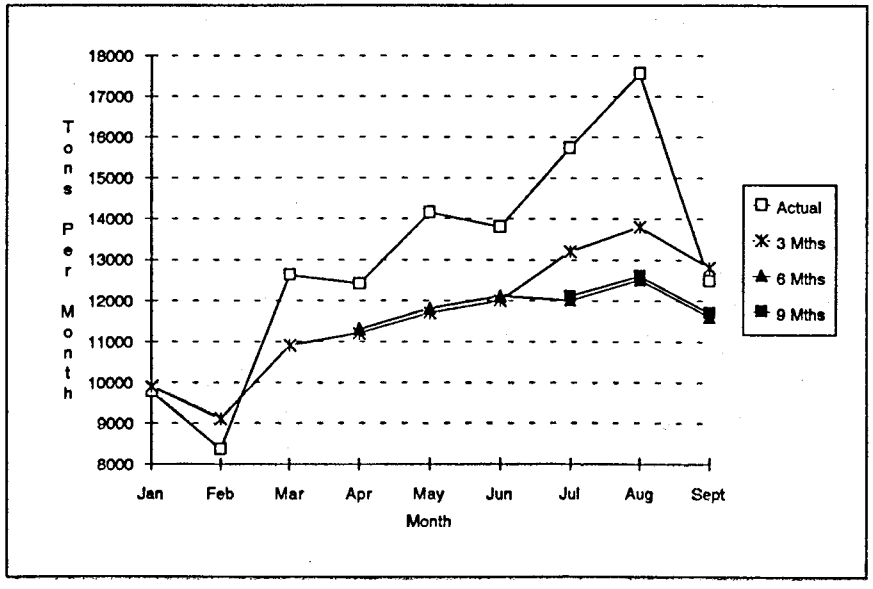
Forest Grove Transfer Station



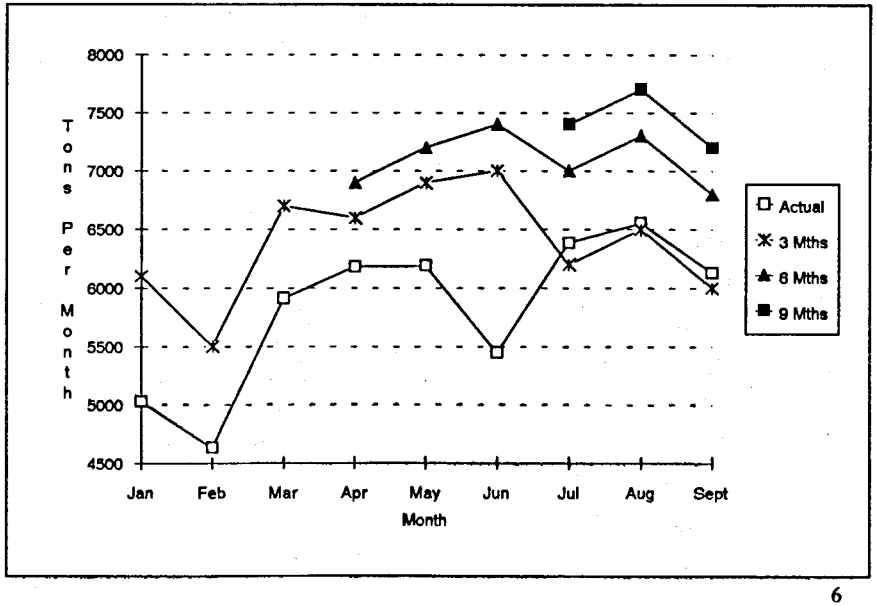
Hillsboro Reload Facility



Hillsboro Landfill

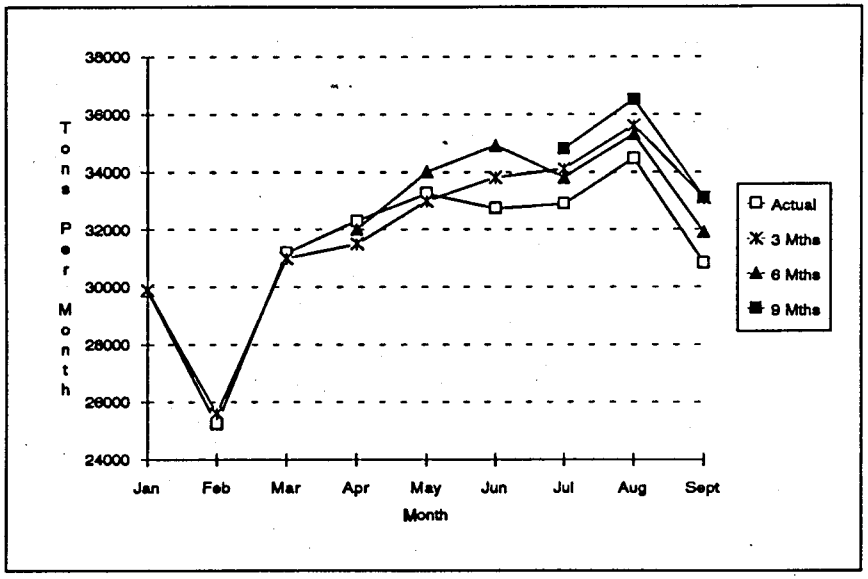


Lakeside Reclamation

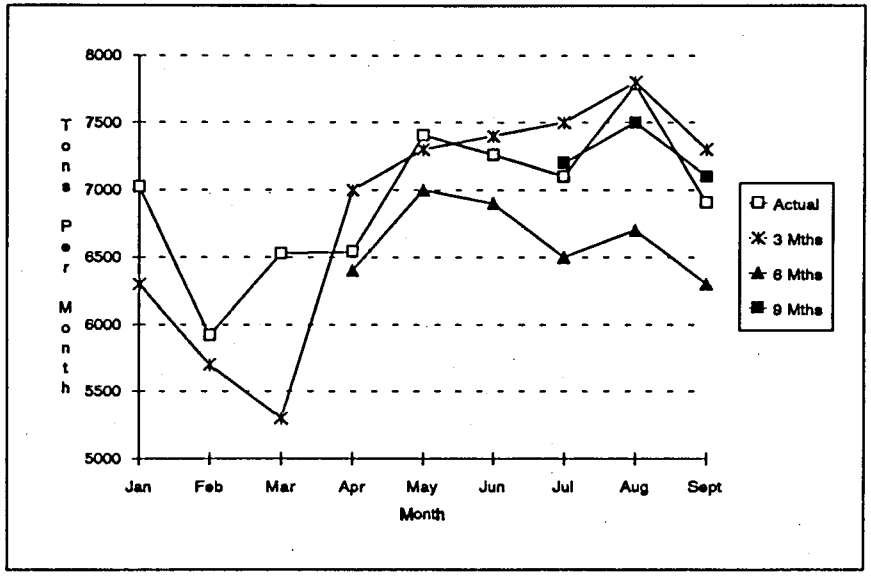


Forecast Comparisons For 1990

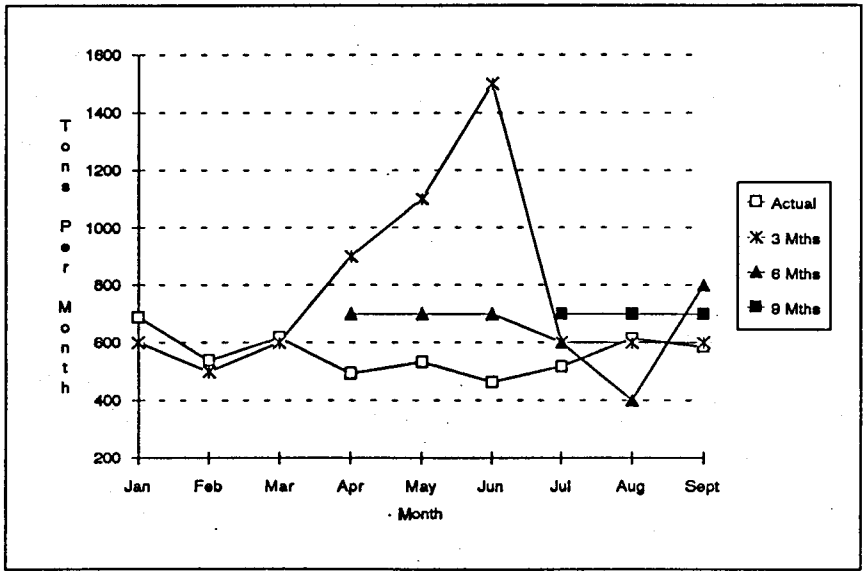
Metro South Transfer Station



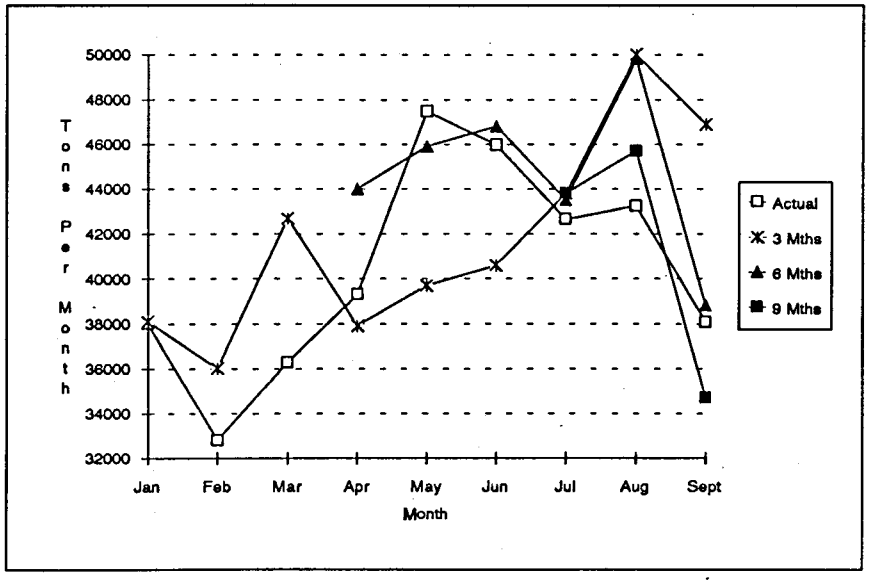
Riverbend Landfill



Oregon Processing and Recovery Center

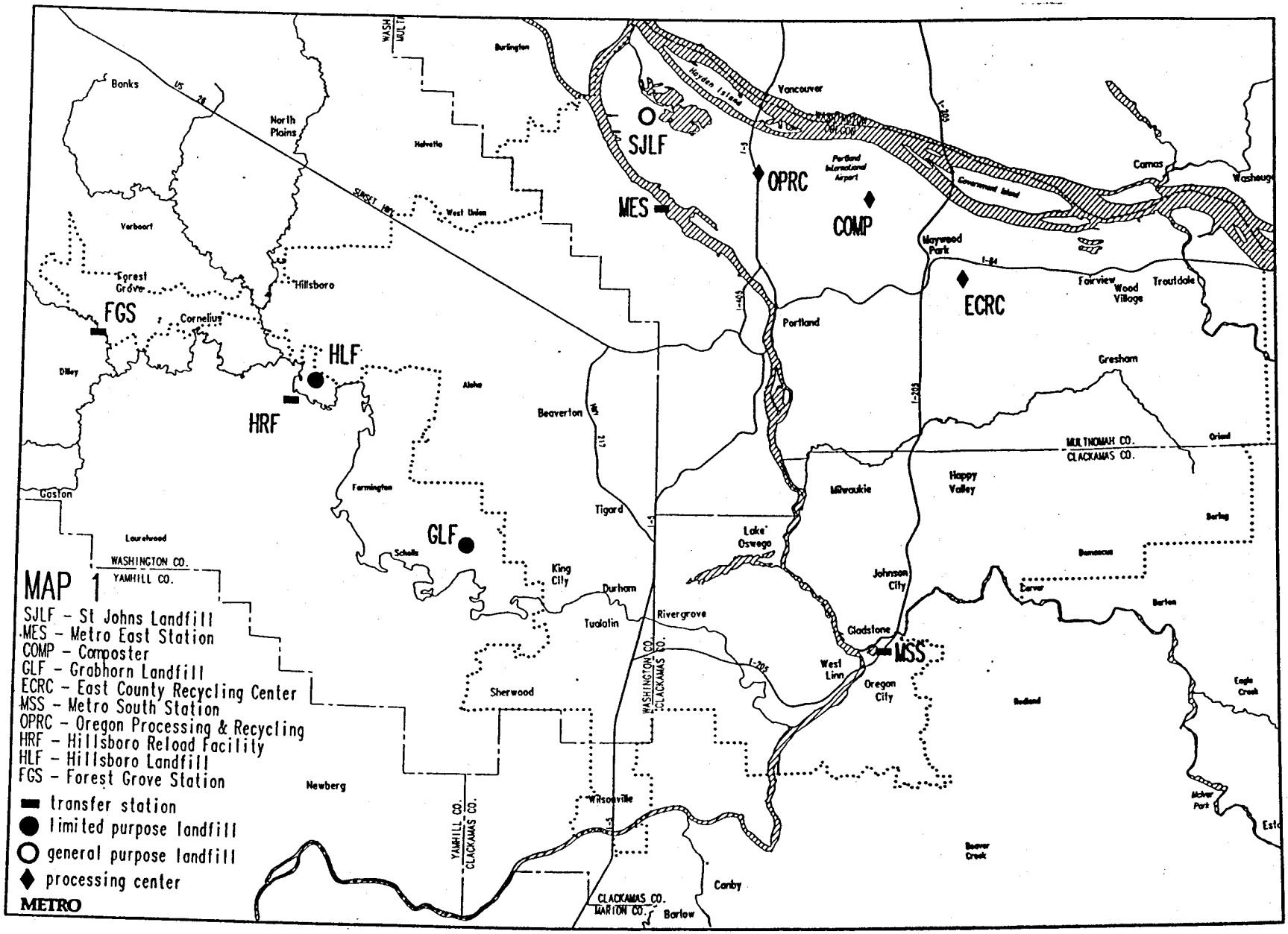


St. Johns Landfill



III. Delivery and Disposal

Location of Facilities



Facilities

Map 1 shows the locations of *regional* facilities. The *region*, also known as the *tri-county area*, consists of Clackamas, Multnomah, and Washington Counties. This region includes areas both inside and outside the Metropolitan Service District's (MSD) boundaries. It is estimated that about 3% of the region's waste is generated outside the MSD boundary. Some of the region's waste is transported to the following facilities that are not shown on Map 1: Riverbend Landfill (Yamhill County), Marion County Waste-To-Energy Facility, Northern Wasco County Landfill and the Columbia Ridge Landfill located near the town of Arlington, Oregon. St. Johns Landfill is included on Map 1 but is scheduled to close February 1991.

Regional facilities presently under construction are also shown on Map 1. These are: Metro Northwest Transfer Station, scheduled for full operation by February 1991; and the METRO-Riedel Mass Composting Facility, scheduled for full operation by August 1991.

Projection Methodology

The forecast of 1990 tonnage is based on actual delivery during the first 9 months. Monthly delivery is estimated using the average percentage of waste that is delivered during each month.

The forecast of delivery tonnage for 1991 and 1992 is based on a projection of the historical trend in per capita disposal rates. Three forecasts are presented:

1. "Historical" - A linear equation was fit to historical per capita data using least squares regression. Population forecasts were then used to project delivery tonnage. This forecast does not reflect new waste reduction that might reduce per-capita delivery rates.

2. "Expected" - The historical trend was reduced to reflect new source-separation programs. Programs that will reduce the tonnage delivered to facilities in this report (residential curbside, new yard debris diversion, multi-family recycling). The 1988 Metro System Measurement Study was the basis for estimating the impact of these programs.

3. "Possible" - There is some uncertainty in predicting what the impact of new source-separation programs will be. A lower bound on the forecasts was derived by assuming that new waste reduction programs will be twice as effective as expected.

Disaggregation Of Annual Tonnages By Month/Facility

Total tonnage from each of the three forecasts was disaggregated by month and facility for a given year as follows. Known constraints, such as contract limitations, were first applied (e.g., the Forest Grove Transfer Station is limited by franchise agreement to 70,000 tons per year). The total of the constraints was subtracted from the total regional tonnage projected for the year. This difference was then applied to the unconstrained facilities after first assigning them the tonnage they had received the previous year. This accomplished the disaggregation by year per facility. These annual amounts were then subdivided into monthly tonnages in accordance with the monthly percentage distribution experienced by the total region during 1983-89. The monthly distribution was not applied to facilities; such as the Marion County Energy Recovery Facility, that receive the majority of their waste during particular seasons.

Tonnage Flow Diagrams And Amounts

Diagrams on pages 11 through 15 show 1989-92 tonnage flows among facilities. Significant changes in flow patterns are expected in the future because of the closure of St. Johns Landfill, expansion of Oregon Processing And Recovery Center, reduction in the amount of waste delivered to Metro South Transfer Station, and opening of the METRO-Riedel Compost Facility and Metro Northwest Transfer Station. Following the flow diagrams are monthly and quarterly tonnage reports for each facility.

Facility Descriptions

The table and figure on page 16 show the total solid waste generated within Clackamas, Multnomah, or Washington counties that is delivered to regional facilities. This includes tonnage that is generated outside the Metropolitan Service District (MSD) boundary but inside the tri-county area. Waste not delivered to one of the facilities, such as privately composted material or illegally dumped waste, is not included in these totals.

Columbia Ridge Landfill (Arlington Landfill)

Columbia Ridge Landfill is a privately owned and operated non-franchised general-purpose landfill located in Gilliam County, Oregon. METRO has a 20-year contract to transport waste from the tri-county area to this facility. The contract states that at least 90% of the region's general-purpose waste must be transported to this facility. Therefore, not more than 10% of the region's general-purpose waste may be taken to landfills such as the Riverbend Landfill (Yamhill County). An exception is being negotiated with respect to the St. Johns Landfill, which is scheduled to close February 1, 1991.

East County Recycling Center (ECRC)

ECRC is a privately owned and operated materials recovery facility that is franchised by Metro. Disposal rates are set by the operator. Residual material is transported by the operator to the North Wasco County Landfill (Braun Landfill).

Forest Grove Transfer Station

Forest Grove Transfer Station is a privately owned transfer station that is franchised by Metro. The facility is located in Forest Grove, Oregon. Disposal rates are set according to the franchise provisions. The franchise also provides for a limit of 70,000 tons per year of MSD waste to be transported from this facility, of which not more than 60,000 tons may be general-purpose waste.

Hillsboro Landfill

Hillsboro Landfill is a privately owned and operated non-franchised landfill located in Hillsboro, Oregon. It accepts non-putrescible waste. Disposal rates are set by the facility. Approximately 3% of the total waste reported for this facility is generated outside the MSD boundary. Metro has an agreement with the Hillsboro Landfill to accept waste from inside the MSD boundary.

Hillsboro Reload Facility (HRF)

Hillsboro Reload Facility is a privately owned and operated non-franchised facility located near Hillsboro, Oregon. The facility is used exclusively by one hauler to reload residential waste into drop boxes for transfer to the Riverbend Landfill in Yamhill County. Metro has an agreement with HRF to accept waste from inside the MSD boundary.

Lakeside Reclamation Landfill (Grabhorn)

Lakeside Reclamation Landfill is a privately owned and operated non-franchised landfill that accepts non-putrescible waste. It is located northwest of Tigard, Oregon. Disposal rates are set by the facility. Metro has an agreement with the Lakeside Reclamation Landfill to accept waste from inside the MSD boundary.

Metro Northwest Transfer Station

Metro Northwest Transfer Station is currently under construction in Portland. It will be owned by Metro and operated by a private firm under a service agreement with Metro. Metro will set rates for the disposal of waste at this facility. Full operation is scheduled to begin in February of 1991.

Metro Northwest will be a general-purpose transfer facility with materials recovery processing. It is assumed that 25% of the waste entering this facility will be recovered. The remaining 75% will be transferred to Columbia Ridge Landfill for final disposal.

Metro South Transfer Station

Metro South Transfer Station is a Metro owned general-purpose transfer facility with a public recycling drop-off area located in Oregon City, Oregon. The facility is operated by a private firm under a service agreement with Metro. Disposal rates are set by Metro.

Some waste is transferred from the facility to the Marion County Energy Recovery Facility. The majority of the tonnage will be transferred during the winter months during the period of highest demand at the Marion County Waste-to-Energy Facility. Most waste is transferred to the Columbia Ridge Landfill.

Metro-Riedel Mass Composting Facility (Compost Facility)

The Compost Facility is a privately owned and operated Metro franchised residential waste composting facility with integrated recovery processing capabilities. It is currently under construction in Portland. Disposal rates are set by Metro per the franchise agreement. Residual material (estimated at 55,000 tons per year of the 185,000 tons per year processed) will be transported directly to the Columbia Ridge Landfill.

Testing at this facility is scheduled to begin with 1,700 tons of residential waste in June 1991 and 8,400 tons the following month. Full operating level of 185,000 tons per year is not expected to be reached until August of 1991.

Oregon Processing and Recovery Center (OPRC)

OPRC is a privately owned and operated Metro franchised material recovery processing facility with a buy-back center. The facility is located in Portland. Disposal rates are set by the operator.

Riverbend Landfill

Riverbend Landfill is a privately owned and operated non-franchised general-purpose landfill located in Yamhill County, Oregon. Disposal rates are set by Yamhill County. Metro has an agreement with the Riverbend Landfill to accept waste from inside the MSD boundary.

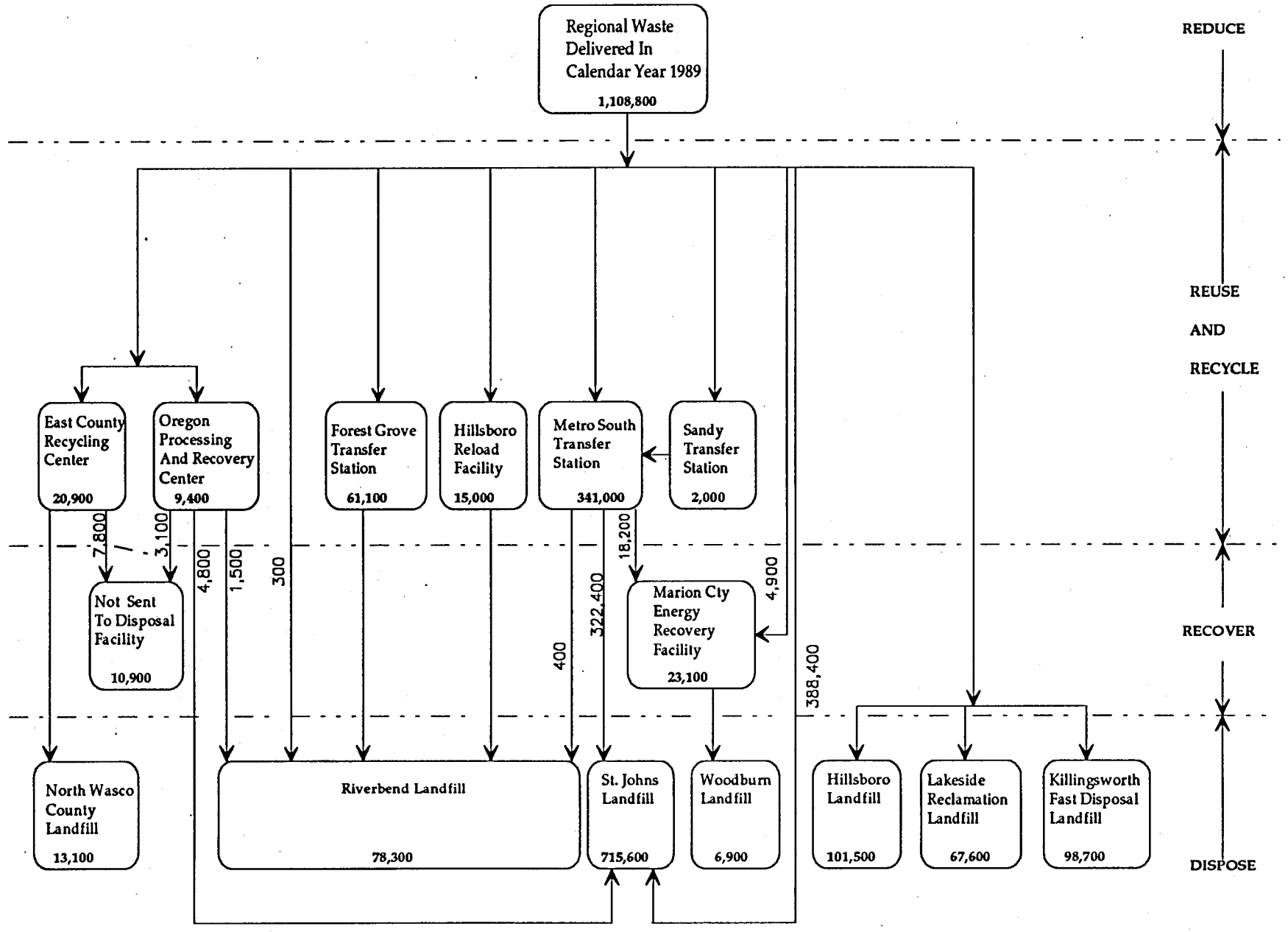
Tonnages in this report are waste originating in the tri-county region, regardless of whether it was generated within the MSD boundary. Tri-county facilities disposing of waste at the Riverbend Landfill are OPRC, Forest Grove Transfer Station, and HRF.

St. Johns Landfill

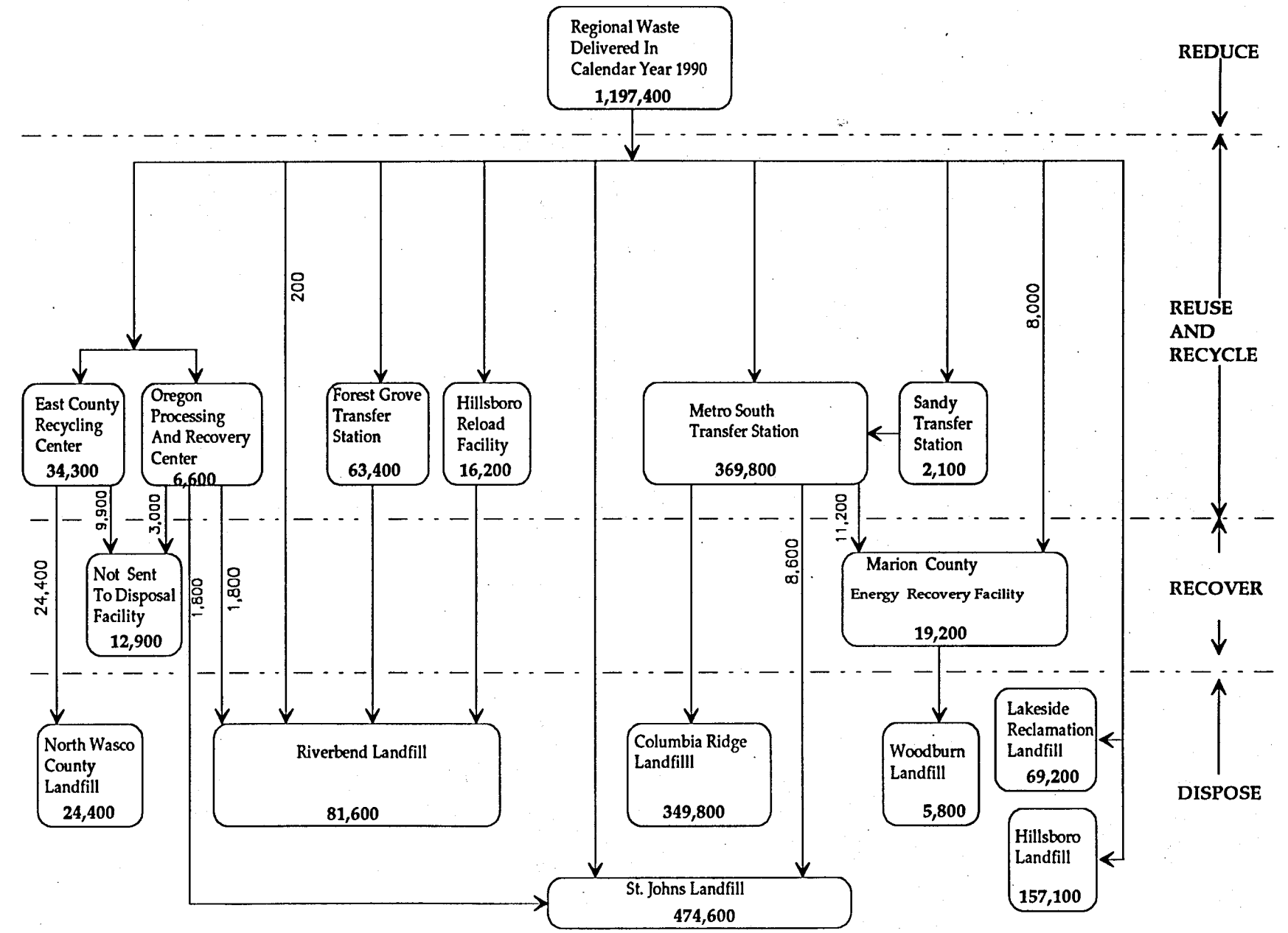
St. Johns Landfill is a general purpose landfill owned by the City of Portland. It is managed by Metro and operated by a private firm under a Metro service agreement. Disposal rates are set by Metro.

The tonnage shown in this report includes waste transferred from Metro South Station and residue from OPRC. The St. Johns Landfill is scheduled to close February 1991. The Metro Northwest Transfer Station is expected to receive waste which would have gone to the landfill if this facility had remained open.

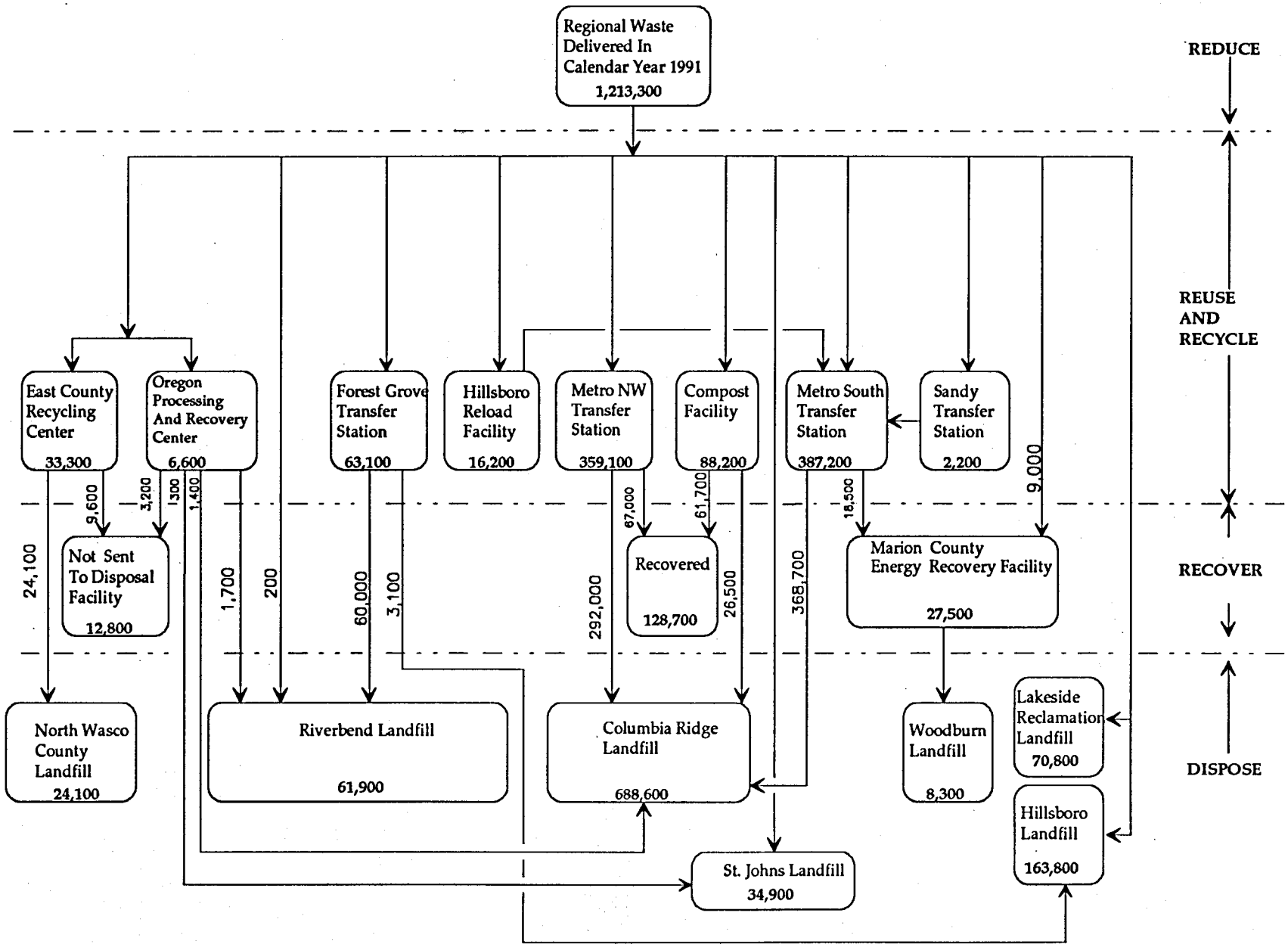
1989 Facility Waste Flow Diagram



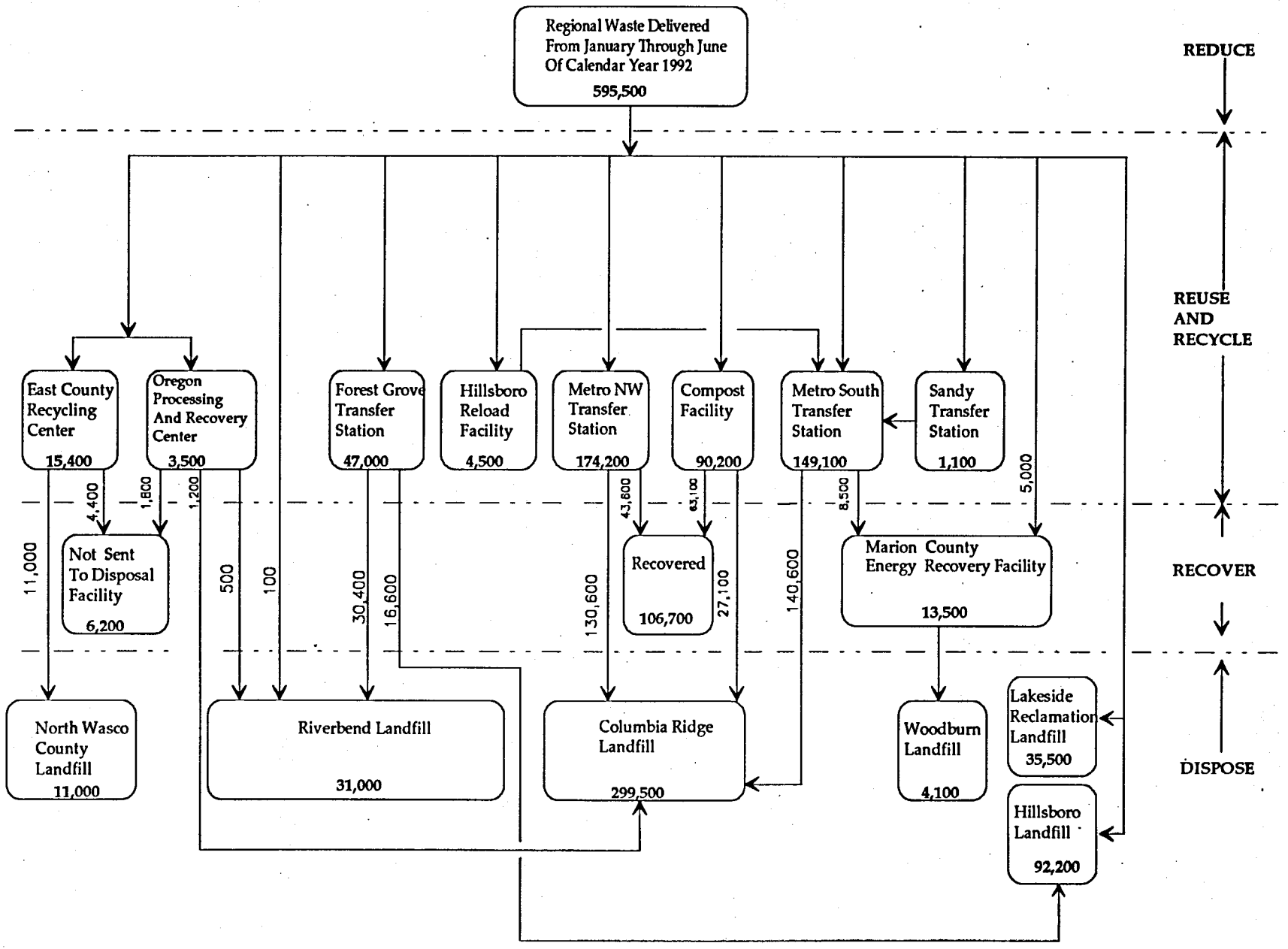
1990 Facility Waste Flow Diagram



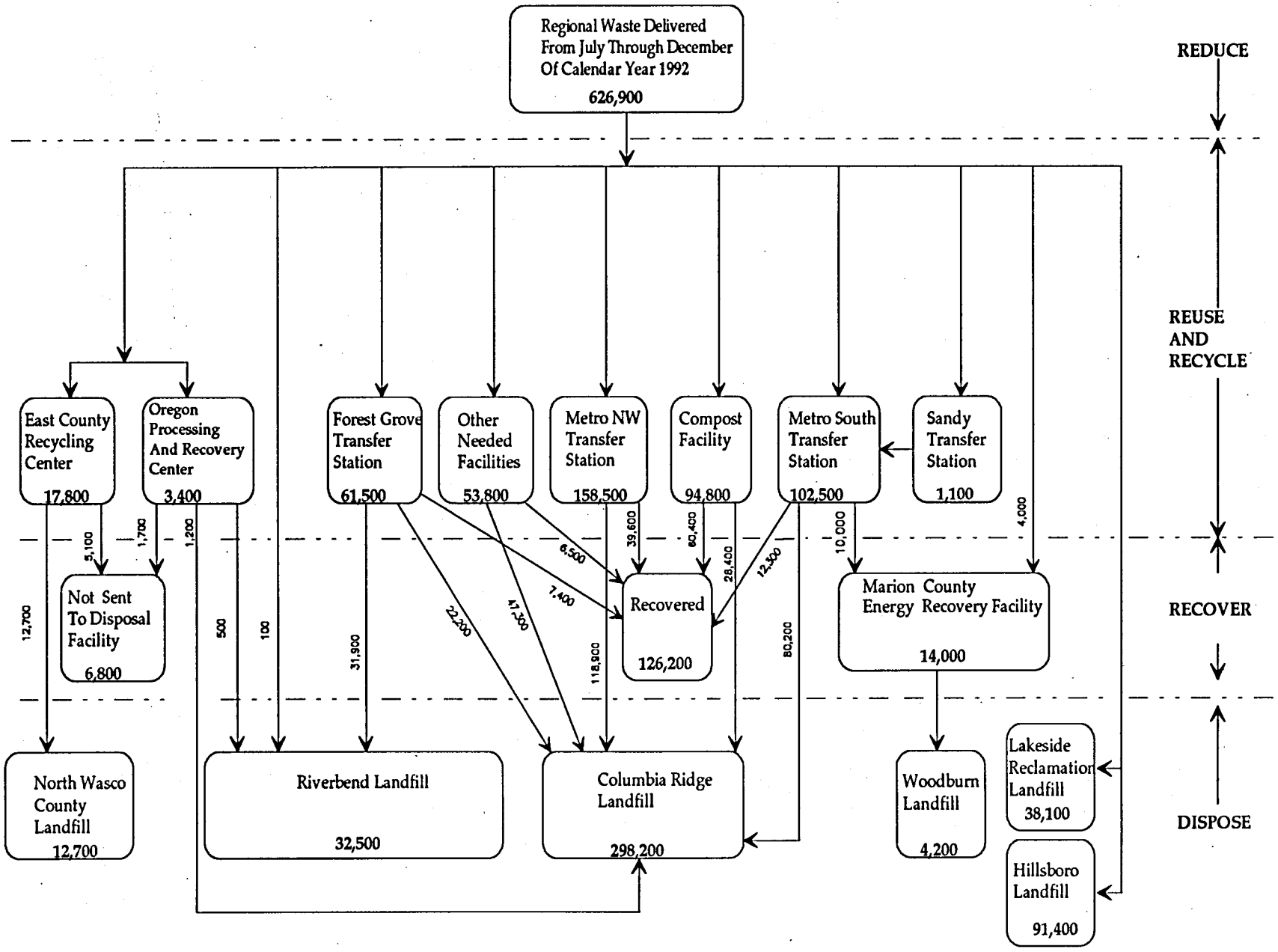
1991 Facility Waste Flow Diagram (based on expected forecast)



January through June 1992 Facility Waste Flow Diagram (based on expected forecast)



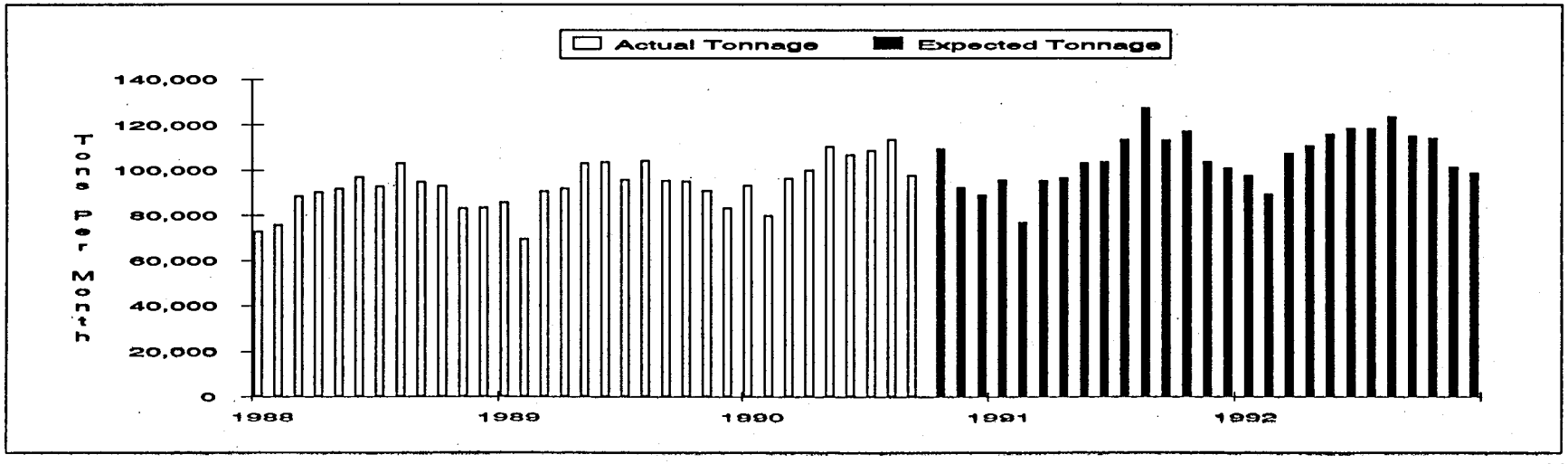
July through December 1992 Facility Waste Flow Diagram (based on expected forecast)



All Facilities: 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	72,739	85,670	93,259	95,400	90,500	86,500	97,300	90,900	84,800
February	75,471	69,668	79,794	76,600	73,700	68,500	89,000	83,100	77,500
March	88,273	90,691	96,378	95,400	92,600	86,100	107,200	100,000	93,300
April	90,196	91,859	99,848	96,500	94,000	87,400	110,600	103,200	96,300
May	91,713	103,126	110,356	103,000	100,900	93,900	115,700	108,000	100,700
June	96,726	103,485	106,612	103,600	101,000	94,000	118,300	110,400	103,000
July	92,597	95,869	108,499	113,300	110,900	103,800	118,300	110,400	103,000
August	102,991	104,034	113,403	127,400	124,800	117,300	123,400	115,200	107,500
September	94,859	95,300	97,618	113,100	110,400	103,700	115,000	107,400	100,200
October	92,922	94,976	109,300	117,100	114,600	107,800	114,000	106,400	99,300
November	83,075	90,932	92,200	103,500	101,300	95,300	101,300	94,500	88,200
December	83,455	83,145	88,700	100,800	98,600	92,800	98,500	92,000	85,800
Total Tons	1,065,017	1,108,756	1,195,900	1,245,900	1,213,300	1,137,200	1,308,300	1,221,300	1,139,600

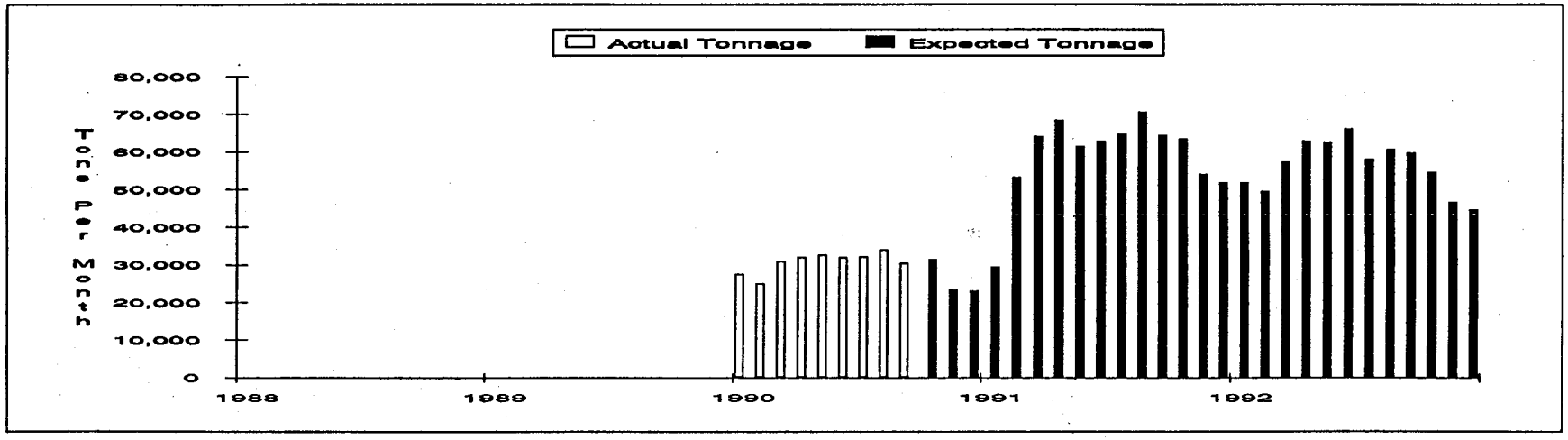
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Columbia Ridge Landfill (Gilliam County Landfill): 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	0	0	27,380	29,400	27,900	26,500	51,700	44,300	40,600
February	0	0	24,884	53,000	51,700	47,400	49,300	43,200	39,800
March	0	0	30,672	64,000	62,400	57,100	57,100	48,500	44,600
April	0	0	31,769	68,400	66,700	61,300	62,700	53,500	49,500
May	0	0	32,497	61,400	59,600	55,000	62,400	53,000	48,900
June	0	0	31,846	62,800	61,100	56,500	66,000	57,000	52,600
July	0	0	31,989	64,700	63,000	58,300	57,900	53,100	49,400
August	0	0	33,843	70,500	68,700	63,900	60,500	55,700	51,800
September	0	0	30,323	64,300	62,800	58,300	59,700	55,300	51,400
October	0	0	31,300	63,400	61,800	57,300	54,500	50,000	46,400
November	0	0	23,200	53,900	52,400	48,500	46,500	42,600	39,300
December	0	0	23,000	51,800	50,400	46,500	44,600	40,700	37,600
Total Tons	0	0	352,700	707,400	688,500	636,600	673,200	597,000	551,800

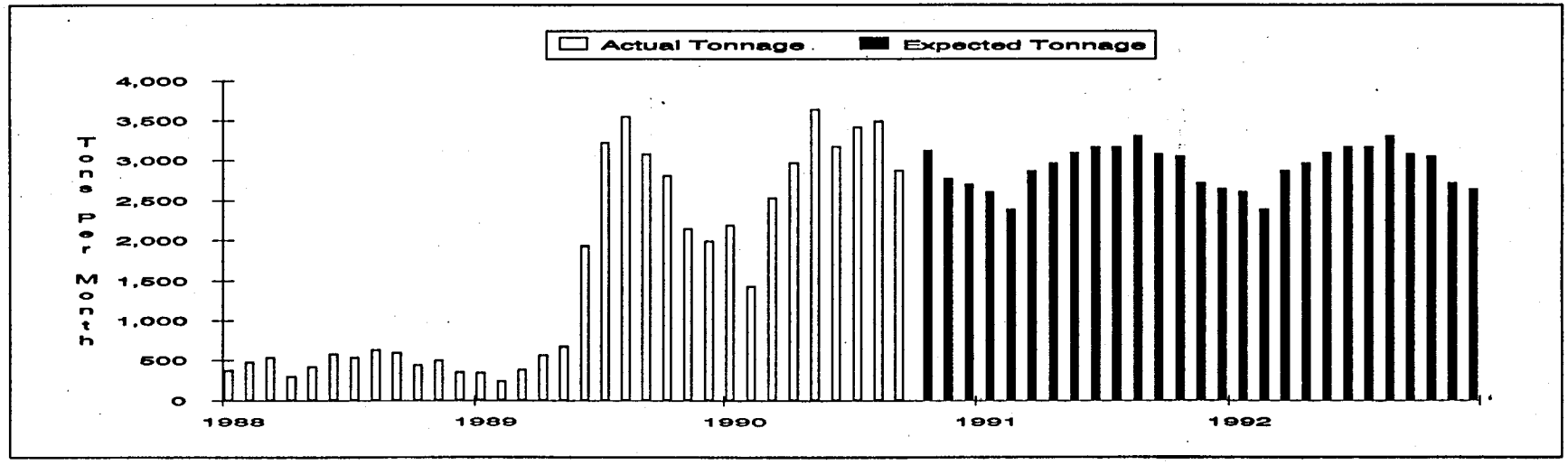
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



East County Recycling Center (ECRC): 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	375	345	2,185	2,600	2,200	2,100	2,600	2,100	2,000
February	475	237	1,422	2,400	1,400	1,300	2,400	1,400	1,300
March	532	380	2,529	2,900	2,500	2,400	2,900	2,400	2,300
April	300	564	2,965	3,000	2,900	2,800	3,000	2,900	2,700
May	414	670	3,629	3,100	3,600	3,400	3,100	3,500	3,300
June	576	1,931	3,170	3,200	3,100	3,000	3,200	3,100	2,900
July	529	3,224	3,413	3,200	3,400	3,200	3,200	3,300	3,100
August	626	3,546	3,484	3,300	3,400	3,300	3,300	3,400	3,100
September	588	3,077	2,868	3,100	2,800	2,700	3,100	2,800	2,600
October	437	2,808	3,100	3,000	3,100	2,900	3,000	3,000	2,800
November	499	2,137	2,800	2,700	2,700	2,600	2,700	2,700	2,500
December	346	1,985	2,700	2,600	2,700	2,500	2,600	2,600	2,400
Total Tons	5,696	20,904	34,300	35,000	33,700	32,300	35,000	33,200	30,900

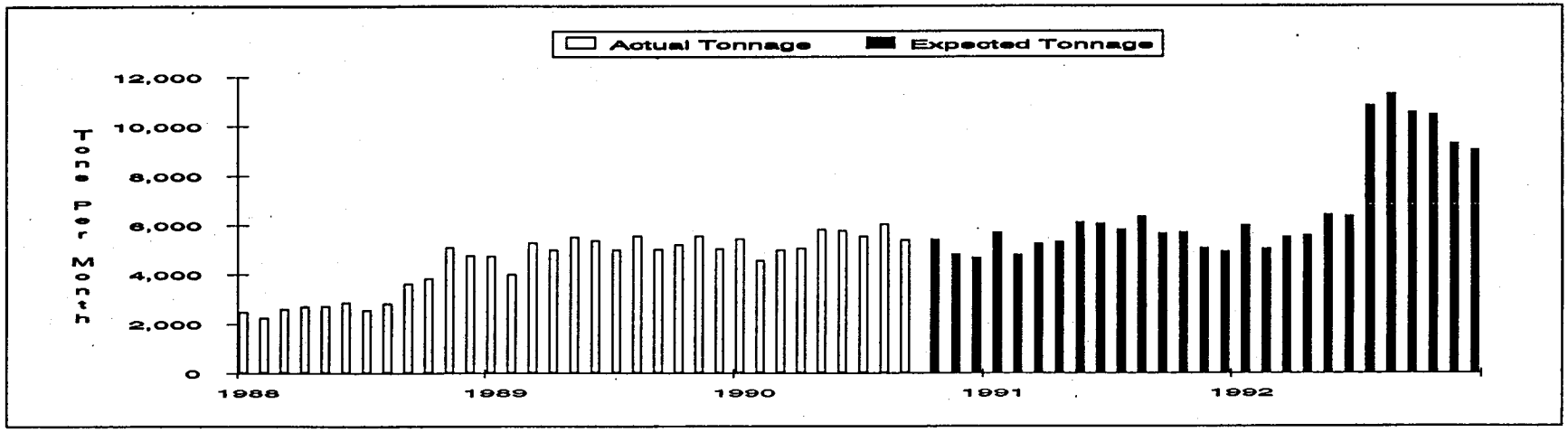
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Forest Grove Transfer Station: 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	2,457	4,711	5,422	5,700	5,400	5,200	6,000	7,200	7,200
February	2,223	3,988	4,546	4,800	4,500	4,300	5,000	6,600	6,600
March	2,589	5,259	4,975	5,200	5,000	4,700	5,500	7,900	7,900
April	2,687	4,974	5,043	5,300	5,000	4,800	5,600	8,100	8,100
May	2,696	5,491	5,799	6,100	5,800	5,500	6,400	8,500	8,500
June	2,837	5,372	5,757	6,100	5,700	5,500	6,400	8,700	8,700
July	2,542	4,973	5,525	5,800	5,500	5,300	10,800	10,800	10,800
August	2,798	5,545	6,026	6,300	6,000	5,700	11,300	11,300	11,300
September	3,611	5,004	5,375	5,700	5,400	5,100	10,500	10,500	10,500
October	3,823	5,186	5,400	5,700	5,400	5,100	10,500	10,500	10,500
November	5,066	5,541	4,800	5,100	4,800	4,600	9,300	9,300	9,300
December	4,745	5,025	4,700	4,900	4,700	4,400	9,000	9,000	9,000
Total Tons	38,074	61,069	63,400	66,600	63,100	60,300	96,300	108,500	108,500

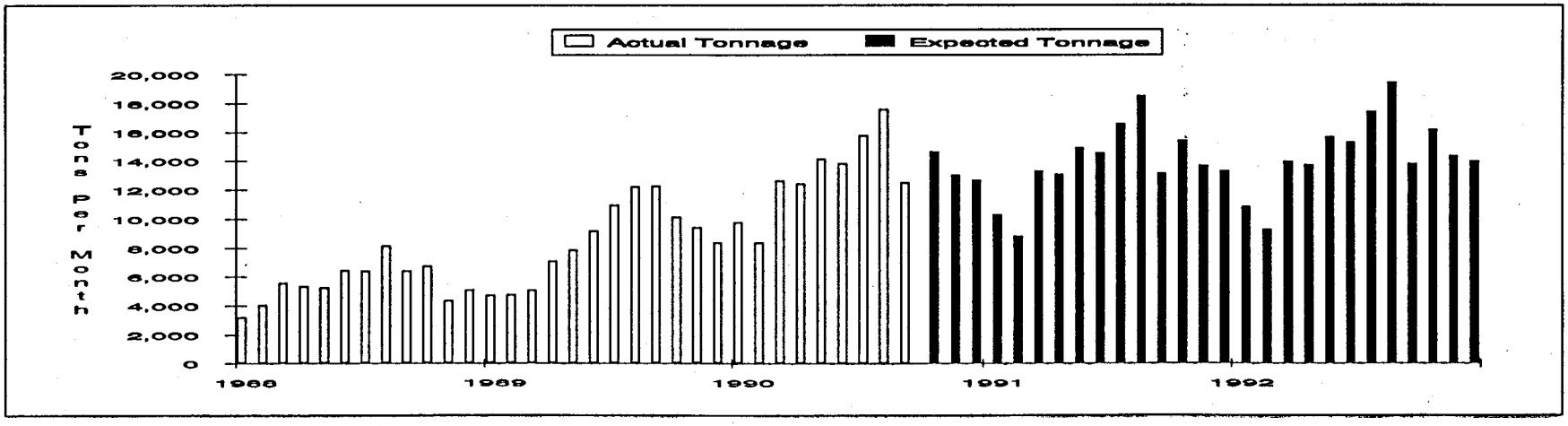
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Hillsboro Landfill: 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	3,166	4,670	9,769	10,300	10,000	9,600	10,800	10,400	9,700
February	3,989	4,729	8,360	8,800	8,600	8,200	9,200	8,900	8,300
March	5,527	5,025	12,619	13,300	12,900	12,300	13,900	13,400	12,500
April	5,286	7,059	12,403	13,000	12,700	12,100	13,700	13,200	12,300
May	5,203	7,813	14,150	14,900	14,500	13,800	15,600	15,000	14,000
June	6,425	9,160	13,806	14,500	14,100	13,500	15,200	14,700	13,700
July	6,352	10,903	15,730	16,500	16,100	15,400	17,400	16,700	15,600
August	8,083	12,185	17,550	18,500	18,000	17,200	19,400	18,700	17,400
September	6,364	12,224	12,475	13,100	12,800	12,200	13,800	13,300	12,400
October	6,679	10,119	14,600	15,400	15,000	14,300	16,100	15,500	14,500
November	4,337	9,382	13,000	13,700	13,300	12,700	14,300	13,800	12,900
December	5,026	8,355	12,600	13,300	12,900	12,400	14,000	13,400	12,500
Total Tons	66,438	101,622	157,100	165,200	160,700	153,700	173,500	167,000	155,800

The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.

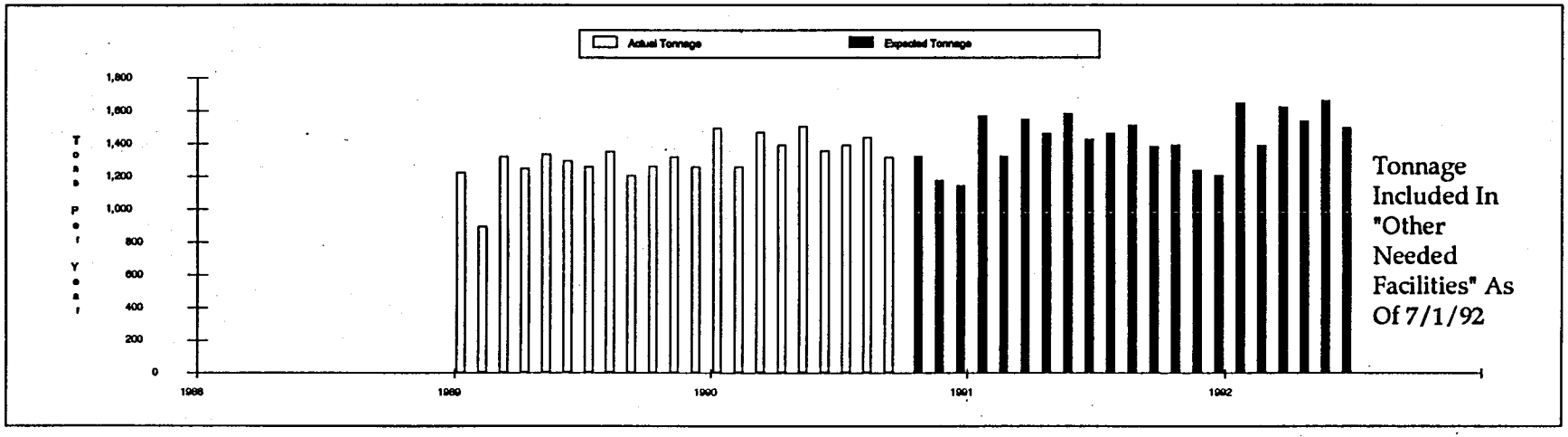


Hillsboro Reload Facility (HRF): 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	0	1,223	1,493	1,600	1,500	1,400	1,600	800	700
February	0	893	1,256	1,300	1,300	1,200	1,400	700	600
March	0	1,317	1,470	1,500	1,500	1,400	1,600	800	700
April	0	1,245	1,390	1,500	1,400	1,300	1,500	700	700
May	0	1,331	1,505	1,600	1,500	1,400	1,700	800	700
June	0	1,294	1,355	1,400	1,400	1,300	1,500	700	700
July	0	1,257	1,388	1,500	1,400	1,300			
August	0	1,352	1,437	1,500	1,400	1,400			
September	0	1,204	1,314	1,400	1,300	1,300			
October	0	1,260	1,300	1,400	1,300	1,300			
November	0	1,319	1,200	1,200	1,200	1,100			
December	0	1,258	1,100	1,200	1,100	1,100			
Total Tons	0	14,953	16,200	17,100	16,200	15,500	9,400	4,500	4,200

Hillsboro Reload Facility tonnage is included under "Other Needed Facilities" as of July 1, 1992

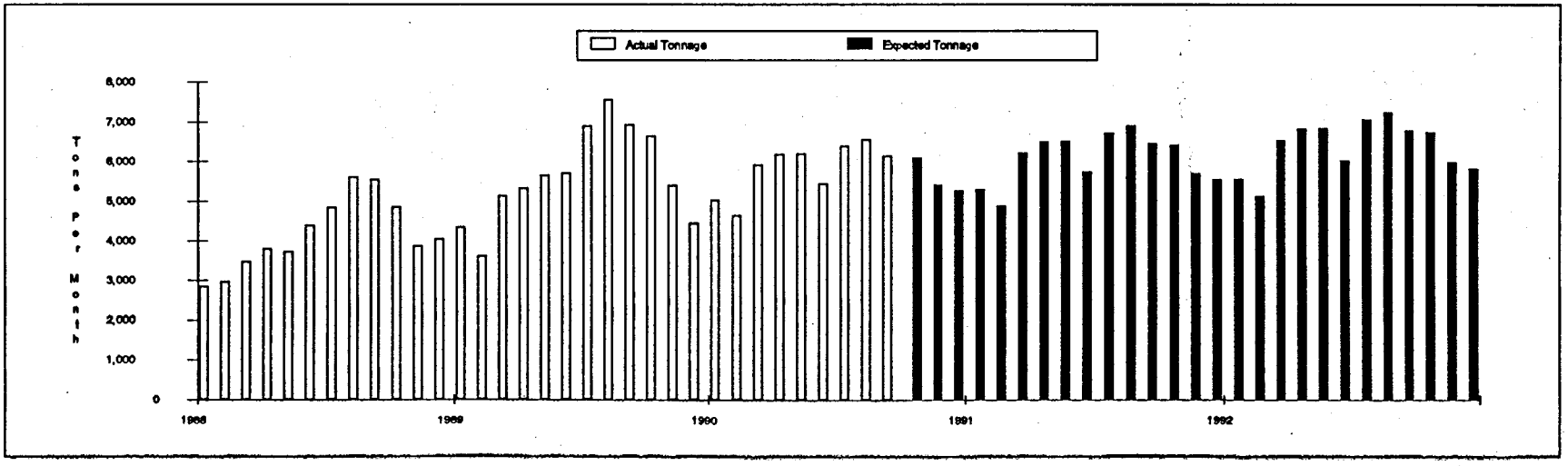
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Lakeside Reclamation Landfill (Grabhorn): 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	2,844	4,347	5,024	5,300	5,100	4,900	5,500	5,300	5,000
February	2,967	3,611	4,631	4,900	4,700	4,500	5,100	4,900	4,600
March	3,472	5,131	5,908	6,200	6,000	5,800	6,500	6,300	5,900
April	3,799	5,314	6,179	6,500	6,300	6,000	6,800	6,600	6,100
May	3,724	5,651	6,189	6,500	6,300	6,100	6,800	6,600	6,100
June	4,384	5,707	5,446	5,700	5,600	5,300	6,000	5,800	5,400
July	4,826	6,893	6,384	6,700	6,500	6,200	7,100	6,800	6,300
August	5,597	7,558	6,553	6,900	6,700	6,400	7,200	7,000	6,500
September	5,549	6,923	6,129	6,400	6,300	6,000	6,800	6,500	6,100
October	4,844	6,647	6,100	6,400	6,200	6,000	6,700	6,500	6,000
November	3,863	5,388	5,400	5,700	5,500	5,300	6,000	5,800	5,400
December	4,050	4,452	5,300	5,500	5,400	5,200	5,800	5,600	5,200
Total Tons	49,919	67,622	69,200	72,800	70,800	67,700	76,400	73,600	68,700

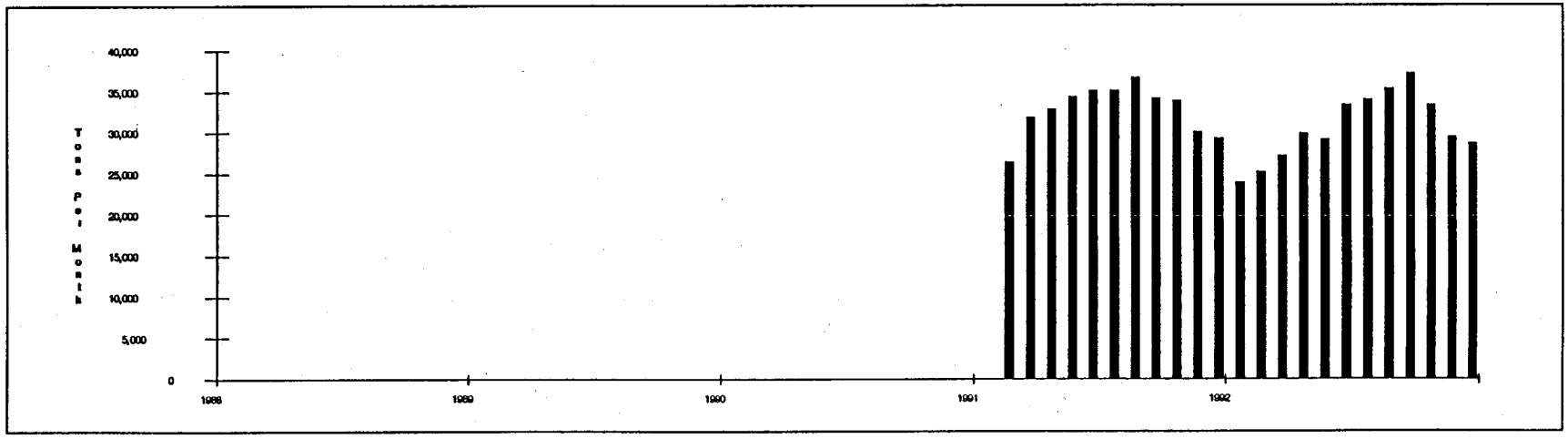
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Metro Northwest Transfer Station: 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	0	0	0	0	0	0	23,800	27,500	22,700
February	0	0	0	26,400	26,400	23,300	25,100	26,300	21,900
March	0	0	0	31,800	31,800	28,000	27,100	28,100	23,000
April	0	0	0	32,800	32,800	28,900	29,800	30,500	25,200
May	0	0	0	34,300	34,300	30,200	29,100	29,400	23,900
June	0	0	0	35,100	35,100	30,900	33,300	32,400	26,700
July	0	0	0	35,100	35,100	30,900	33,900	26,900	21,300
August	0	0	0	36,600	36,600	32,200	35,200	28,000	22,300
September	0	0	0	34,100	34,100	30,100	37,100	30,600	24,900
October	0	0	0	33,800	33,800	29,800	33,300	26,600	21,200
November	0	0	0	30,000	30,000	26,500	29,500	23,500	18,700
December	0	0	0	29,200	29,200	25,800	28,600	22,900	18,200
Total Tons	0	0	0	359,100	359,100	316,500	365,900	332,700	270,000

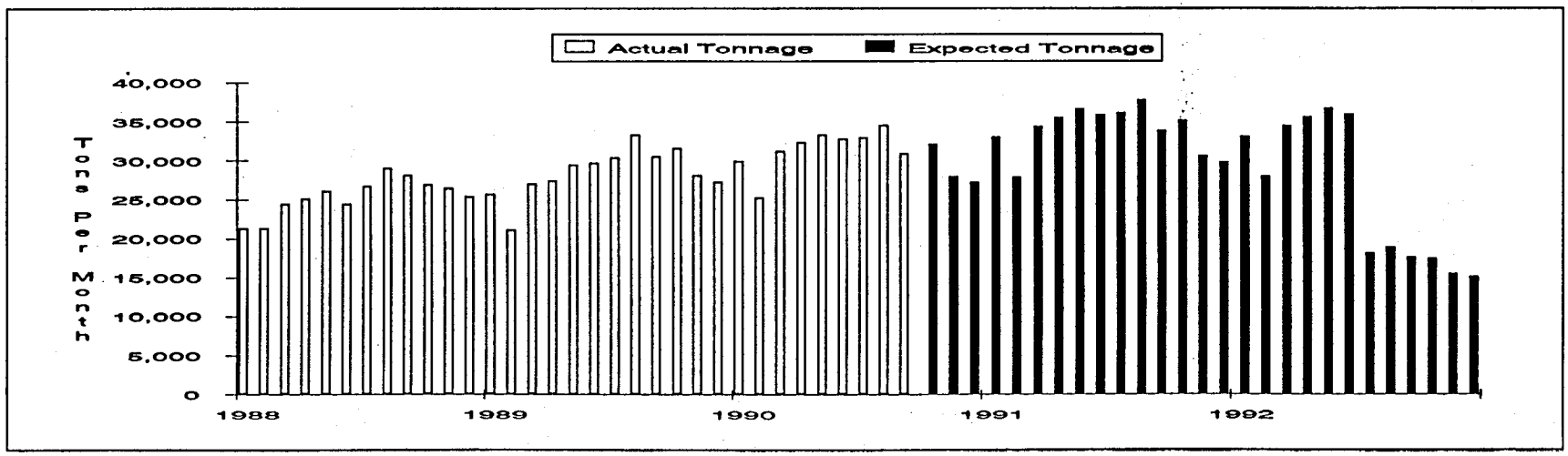
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Metro South Transfer Station: 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	21,243	25,624	29,862	33,000	31,400	30,000	33,100	22,900	22,800
February	21,236	21,101	25,221	27,800	26,600	25,400	27,900	20,800	20,800
March	24,337	26,988	31,184	34,300	32,800	31,300	34,400	25,100	25,000
April	25,043	27,391	32,296	35,400	33,800	32,300	35,500	25,800	25,800
May	26,032	29,438	33,257	36,600	34,900	33,300	36,600	27,000	27,000
June	24,342	29,673	32,732	35,900	34,200	32,700	35,900	27,500	27,500
July	26,617	30,364	32,892	36,100	34,400	32,800	18,100	18,100	18,100
August	28,936	33,250	34,455	37,700	36,000	34,400	18,900	18,900	18,900
September	28,037	30,442	30,830	33,800	32,200	30,800	17,600	17,600	17,600
October	26,857	31,498	32,100	35,100	33,500	32,000	17,400	17,400	17,400
November	26,418	28,024	27,900	30,600	29,100	27,800	15,500	15,500	15,500
December	25,303	27,202	27,100	29,700	28,300	27,100	15,100	15,100	15,100
Total Tons	304,401	340,995	369,800	406,000	387,200	369,900	305,900	251,600	251,300

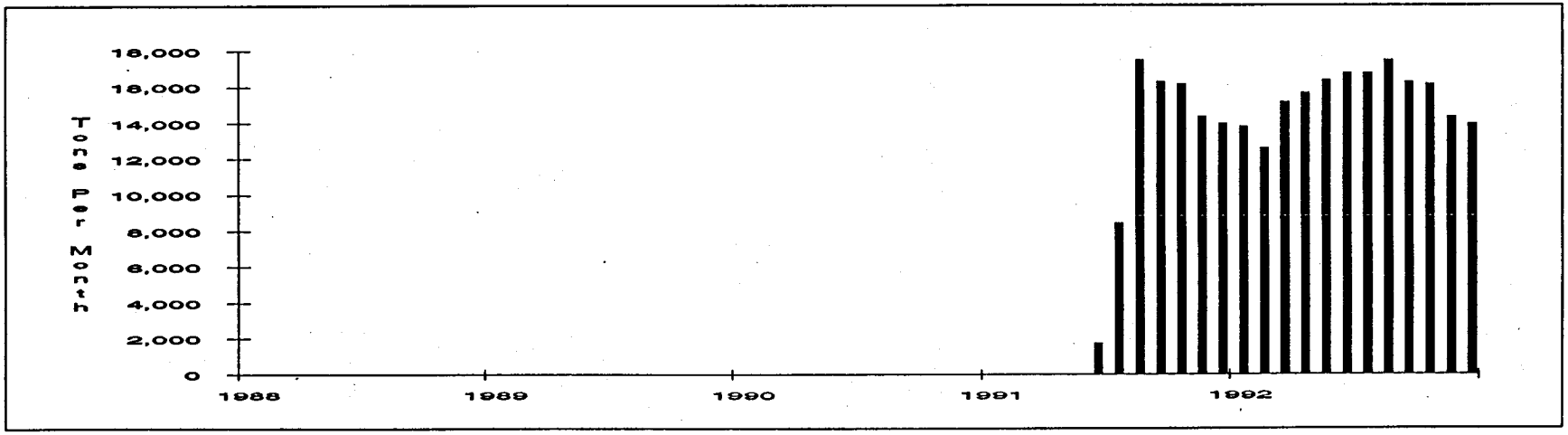
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Metro-Riedel Mass Composting Facility (Compost Facility): 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	0	0	0	0	0	0	13,800	13,800	13,800
February	0	0	0	0	0	0	12,600	12,600	12,600
March	0	0	0	0	0	0	15,200	15,200	15,200
April	0	0	0	0	0	0	15,600	15,600	15,600
May	0	0	0	0	0	0	16,400	16,400	16,400
June	0	0	0	1,700	1,700	1,700	16,700	16,700	16,700
July	0	0	0	8,400	8,400	8,400	16,700	16,700	16,700
August	0	0	0	17,400	17,400	17,400	17,400	17,400	17,400
September	0	0	0	16,300	16,300	16,300	16,300	16,300	16,300
October	0	0	0	16,100	16,100	16,100	16,100	16,100	16,100
November	0	0	0	14,300	14,300	14,300	14,300	14,300	14,300
December	0	0	0	13,900	13,900	13,900	13,900	13,900	13,900
Total Tons	0	0	0	88,200	88,200	88,200	185,000	185,000	185,000

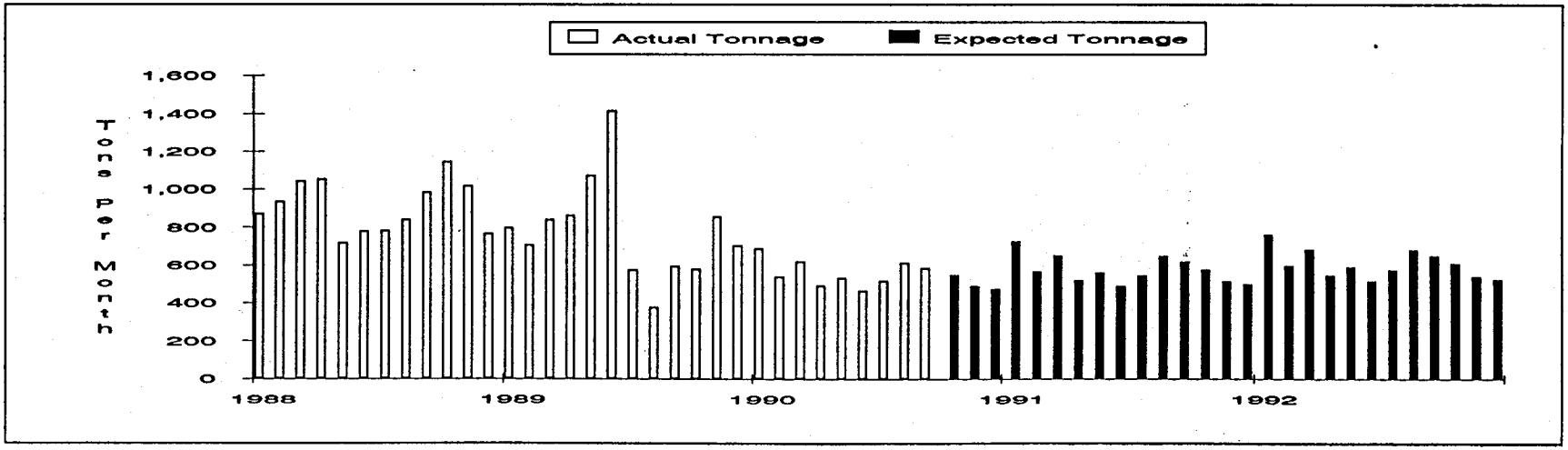
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Oregon Processing and Recovery Center (OPRC): 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	871	796	687	700	700	700	700	700	700
February	931	704	538	600	500	500	600	500	500
March	1,041	840	617	600	600	600	600	600	600
April	1,051	861	492	500	500	500	500	500	500
May	715	1,071	532	600	500	500	600	500	500
June	776	1,414	463	500	500	400	500	500	400
July	781	574	516	500	500	500	500	500	500
August	840	377	613	600	600	600	600	600	600
September	982	592	585	600	600	600	600	600	600
October	1,143	578	500	600	600	500	600	600	500
November	1,016	856	500	500	500	500	500	500	500
December	765	703	500	500	500	500	500	500	500
Total Tons	10,912	9,366	6,600	6,900	6,600	6,300	6,900	6,600	6,300

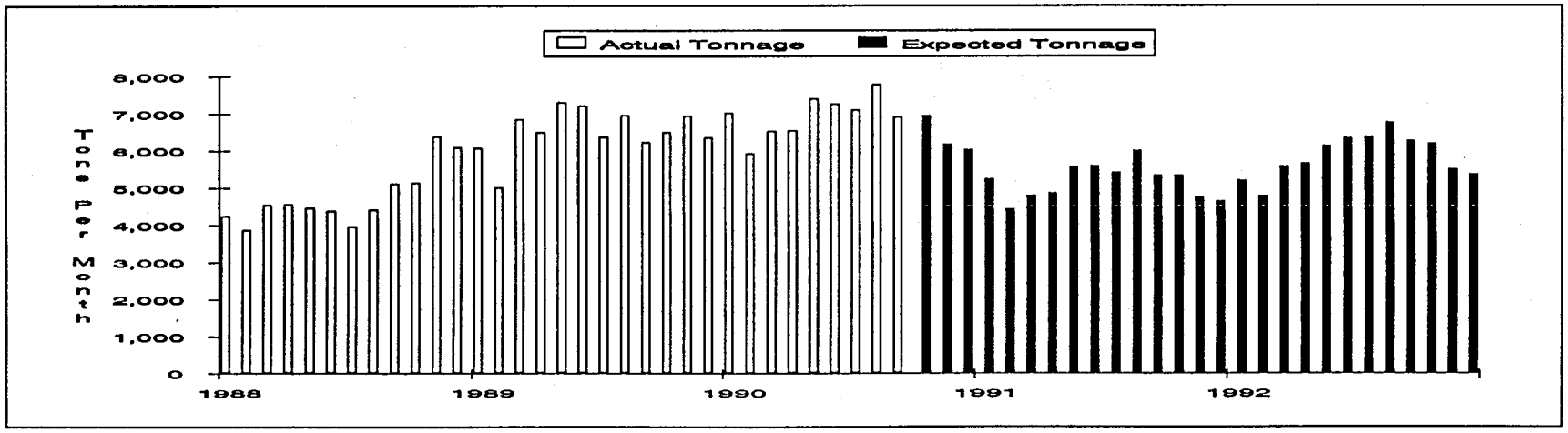
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



Riverbend Landfill: 1988 - 1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991			1992		
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	4,239	6,060	7,024	5,200	5,200	5,200	5,200	4,700	4,400
February	3,857	5,008	5,917	4,400	4,400	4,400	4,800	4,400	4,100
March	4,531	6,842	6,526	4,800	4,800	4,800	5,600	5,200	4,800
April	4,534	6,494	6,540	4,900	4,900	4,900	5,700	5,400	5,000
May	4,439	7,305	7,405	5,600	5,600	5,600	6,100	5,600	5,200
June	4,367	7,205	7,259	5,600	5,600	5,600	6,300	5,800	5,400
July	3,952	6,374	7,101	5,400	5,400	5,400	6,400	5,800	5,400
August	4,393	6,955	7,784	6,000	6,000	6,000	6,800	6,200	5,800
September	5,089	6,232	6,906	5,300	5,300	5,300	6,300	5,700	5,300
October	5,121	6,491	7,000	5,300	5,300	5,300	6,200	5,600	5,300
November	6,388	6,938	6,200	4,800	4,700	4,600	5,500	5,000	4,700
December	6,078	6,353	6,000	4,600	4,600	4,600	5,400	4,900	4,600
Total Tons	56,989	78,257	81,600	61,900	61,800	61,700	70,100	64,300	59,900

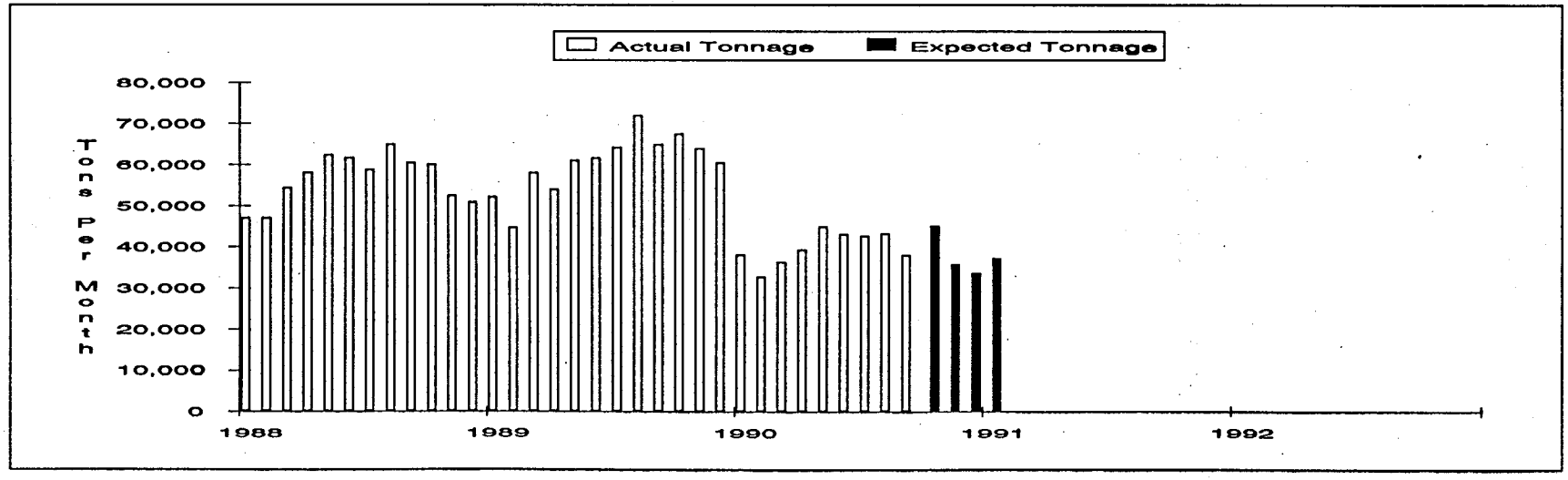
The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



St. Johns Landfill: 1988-1992 Delivery Tonnages

Calendar Year-->	1988	1989	1990	1991	1991	1991	1992	1992	1992
Estimate Type-->	Historical	Historical	Historical	Historical	Expected	Possible	Historical	Expected	Possible
January	46,914	52,051	37,998	37,100	34,900	33,300	0	0	0
February	46,931	44,649	32,801	0	0	0	0	0	0
March	54,259	58,072	36,272	0	0	0	0	0	0
April	57,956	53,954	39,292	0	0	0	0	0	0
May	62,248	61,091	44,993	0	0	0	0	0	0
June	61,624	61,614	43,118	0	0	0	0	0	0
July	58,665	64,190	42,656	0	0	0	0	0	0
August	64,891	71,890	43,242	0	0	0	0	0	0
September	60,436	64,888	38,077	0	0	0	0	0	0
October	60,025	67,465	45,100	0	0	0	0	0	0
November	52,458	63,866	35,700	0	0	0	0	0	0
December	50,884	60,486	33,700	0	0	0	0	0	0
Total Tons	677,291	724,216	473,000	37,100	34,900	33,300	0	0	0

The unshaded numbers represent actual delivery to date. The shaded values represent three different forecasts: (1) Historical - a projection of 1983-1989 trend, (2) Expected - delivery with planned increases in source-separation, and (3) Possible - delivery if increases in source-separation are twice as effective as planned. The graph below is the expected forecast.



IV. Waste Reduction

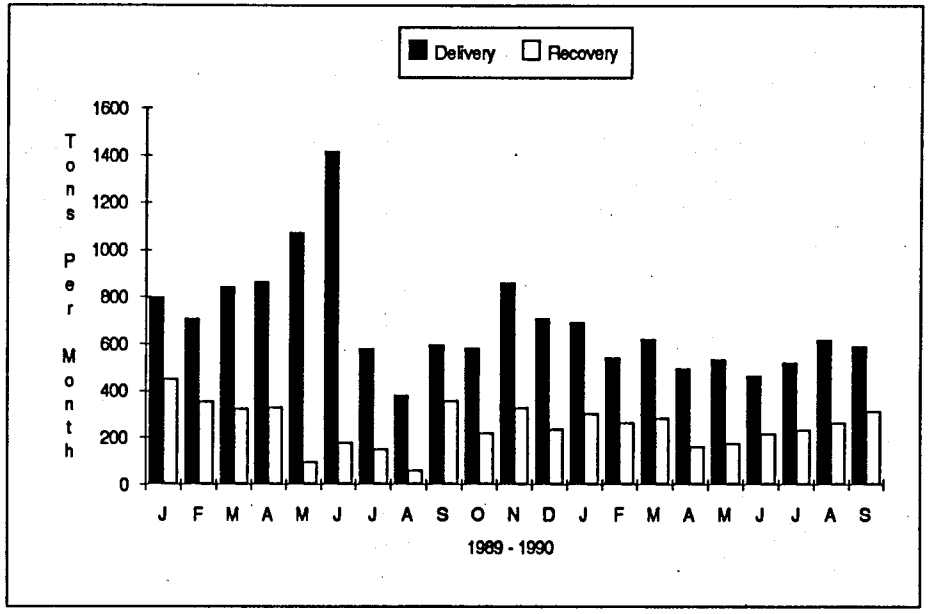
Introduction

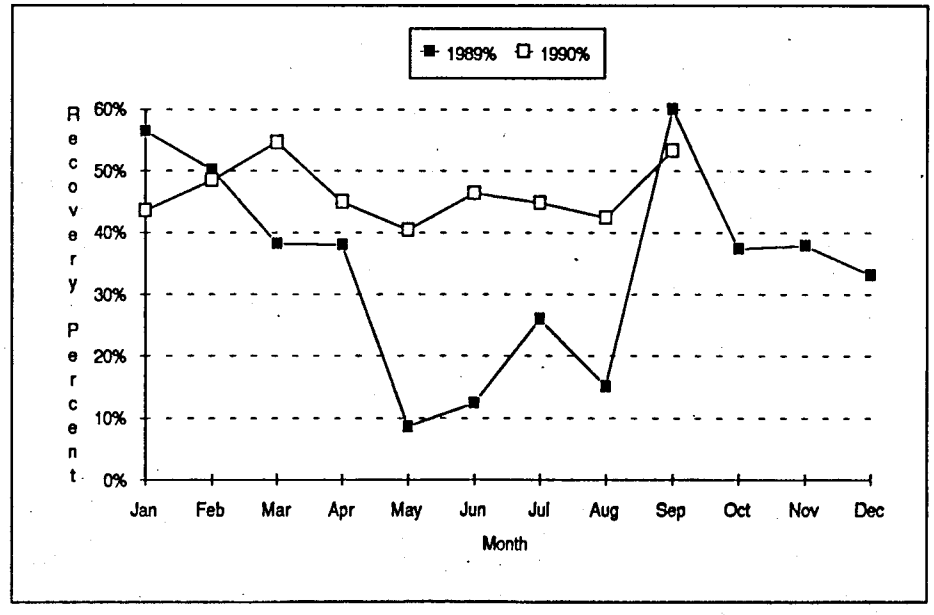
This section reports waste reduction data. Included are monthly tonnages for those facilities that provide reports to Metro. Post-collection material recovery, yard debris processing, and energy recovery are presented in this report. Future quarterly reports will include other waste reduction data, such as curbside recycling.

Oregon Processing and Recovery Center (OPRC)

OPRC is a material recovery facility that sorts high-grade and commingled recyclable material. Primary materials recovered include corrugated cardboard and mixed waste paper.

The total recovery at OPRC during the third quarter of 1990 was 803 tons (compared to 561 tons during the third quarter of 1989). Average recovery level during the third quarter of 1990 was 47% (compared to 37% during the third quarter of 1989).





	Tons				Recovery Percent	
	Delivery		Recovery			
Month	1989	1990	1989	1990	1989	1990
Jan	796	687	449	299	56%	44%
Feb	704	538	353	280	50%	48%
Mar	840	617	321	260	38%	55%
Apr	861	492	327	160	38%	45%
May	1071	532	92	173	9%	40%
Jun	1414	463	175	214	12%	46%
Jul	574	516	149	231	26%	45%
Aug	377	613	57	260	15%	42%
Sep	592	585	355	312	60%	53%
Oct	578		216		37%	
Nov	856		324		38%	
Dec	703		233		33%	

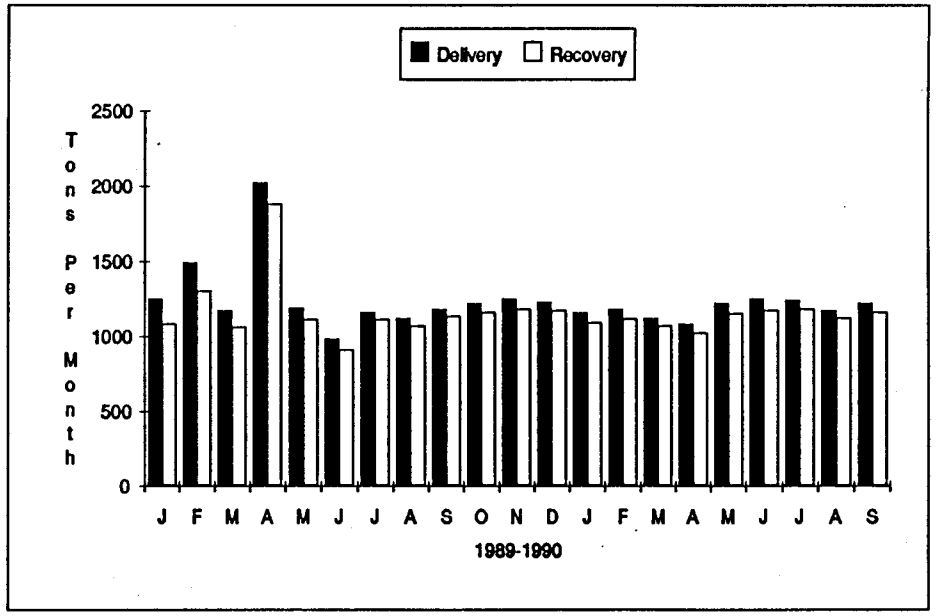
Material Recovery

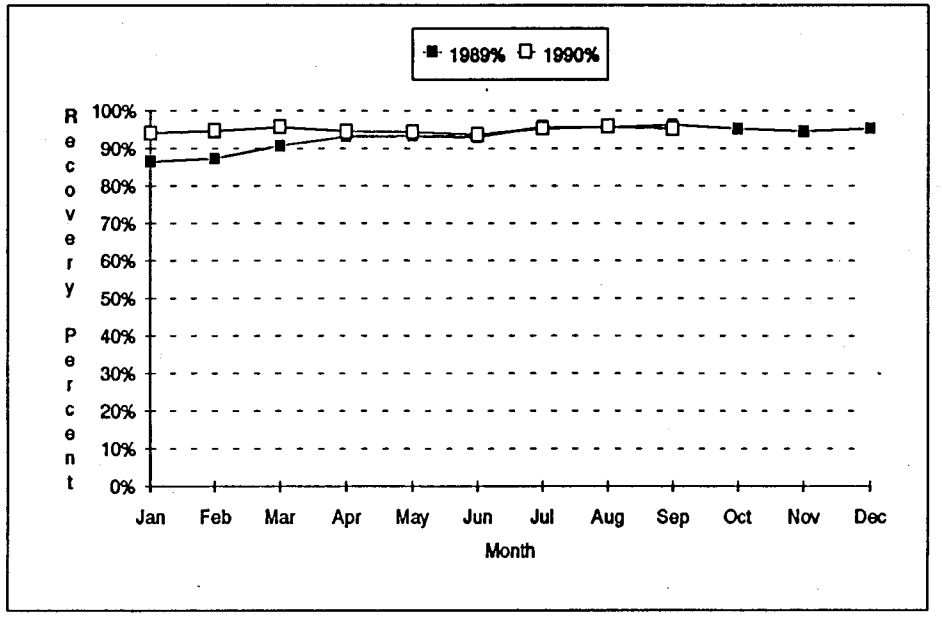
Marine Dropbox

Marine Drop box collects dunnage and debris from ships and recovers wood, rope, cable, wire and other material for resale or salvage.

The total recovery at Marine Dropbox during the third quarter of 1990 was 3,460 tons (compared to 3,315 tons during the third quarter of 1989). Average recovery level during the third quarter of 1990 was 95% (compared to 96% during the third quarter of 1989).

	Tons				Recovery Percent	
	Delivery		Recovery			
Month	1989	1990	1989	1990	1989	1990
Jan	1250	1160	1080	1090	86%	94%
Feb	1490	1180	1300	1115	87%	94%
Mar	1170	1120	1060	1070	91%	96%
Apr	2020	1080	1880	1020	93%	94%
May	1190	1220	1110	1150	93%	94%
Jun	980	1250	910	1170	93%	94%
Jul	1160	1240	1110	1180	96%	95%
Aug	1120	1170	1070	1120	96%	96%
Sep	1180	1220	1135	1160	96%	95%
Oct	1220		1160		95%	
Nov	1250		1180		94%	
Dec	1230		1170		95%	



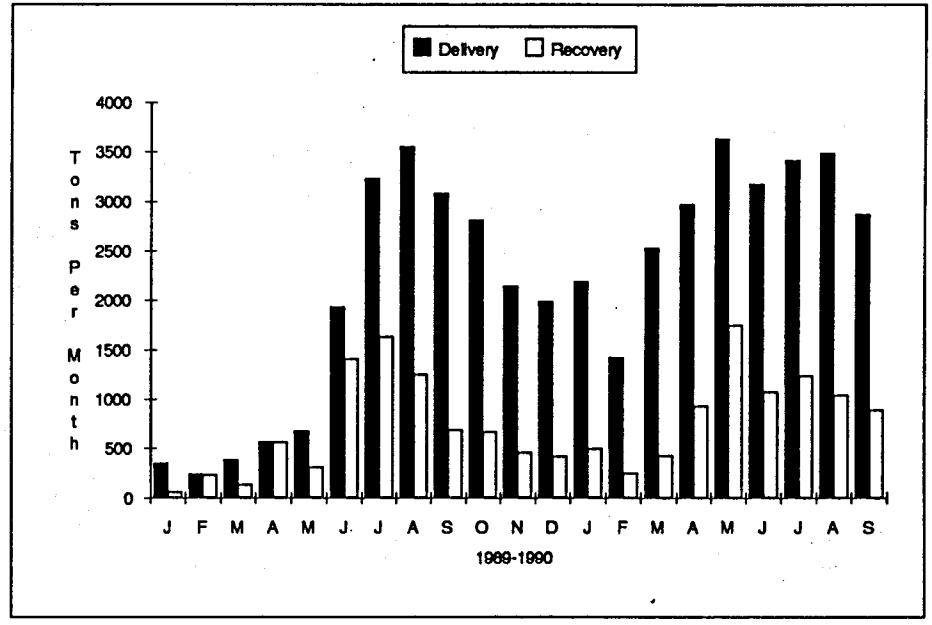


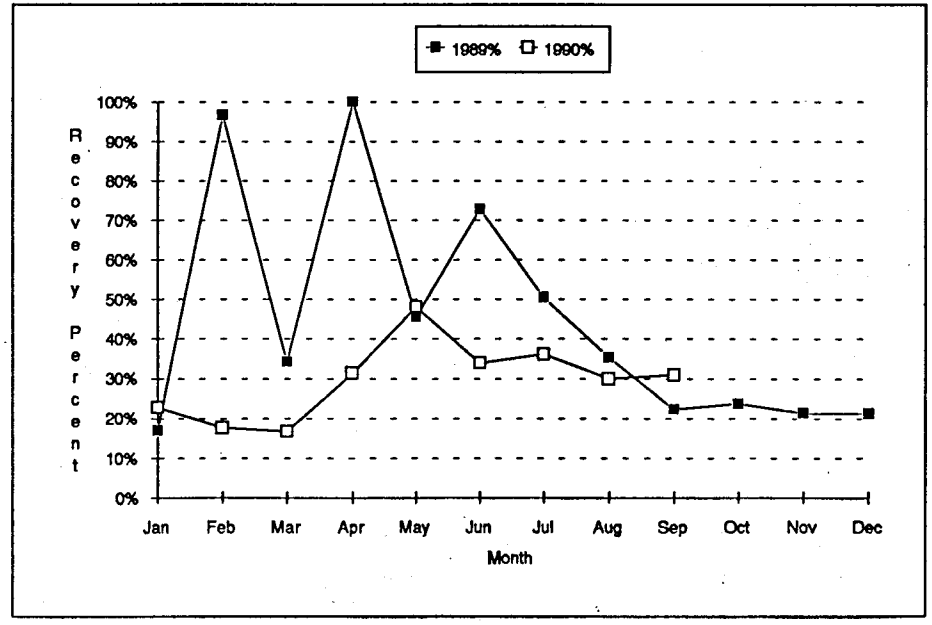
East County Recycling Center (ECRC)

ECRC accepts waste containing recyclable material. Material is hand-sorted in preparation for sale to secondary markets. Primary material recovered includes yard debris, corrugated cardboard, and metal scrap.

The total recovery at ECRC during the third quarter of 1990 was 3,159 tons (compared to 3,561 tons during the third quarter of 1989). Average recovery level during the third quarter of 1990 was 32% (compared to 36% during the third quarter of 1989).

	Tons				Recovery Percent	
	Delivery		Recovery			
Month	1989	1990	1989	1990	1989	1990
Jan	345	2185	58	540	17%	25%
Feb	237	1422	229	66	97%	5%
Mar	380	2529	130	500	34%	20%
Apr	564	2965	564	570	100%	19%
May	670	3629	305	1425	46%	39%
Jun	1931	3170	1405	792	73%	25%
Jul	3224	3413	1626	1233	50%	36%
Aug	3546	3484	1250	1040	35%	30%
Sep	3077	2868	685	886	22%	31%
Oct	2808		663		24%	
Nov	2137		455		21%	
Dec	1985		420		21%	





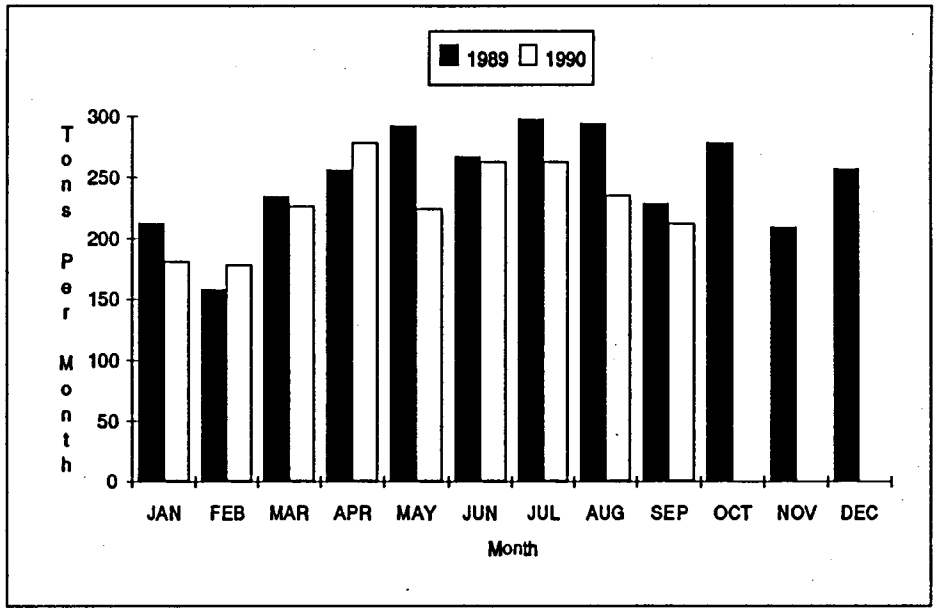
Material Recovery

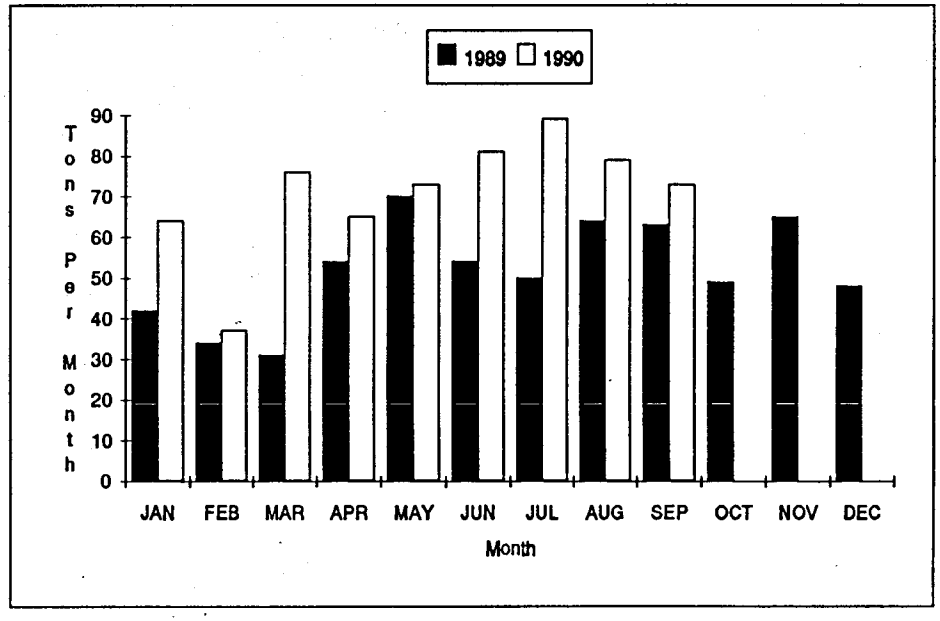
Metro South Transfer Station

Metro South Transfer Station has drop-off areas for recyclable material. Materials received include corrugated cardboard, tires, newspaper and metal. The total recovery at Metro South Station (top right chart) during the third quarter of 1990 was 710 tons (compared to 820 tons during the third quarter of 1989).

St. Johns Landfill

St. Johns Landfill has drop-off areas for recyclable material. Materials received include corrugated cardboard, tires, newspaper and metal. The total recovery at St. Johns Landfill (bottom right chart) during the third quarter of 1990 was 241 tons (compared to 177 tons during the third quarter of 1989).





Metro South Transfer Station

Month	Delivery (tons) 1989	1990	% Change
JAN	212	181	-15%
FEB	158	178	13%
MAR	234	226	-3%
APR	256	278	9%
MAY	292	224	-23%
JUN	267	263	-2%
JUL	298	263	-12%
AUG	294	235	-20%
SEP	228	212	-7%
OCT	278		
NOV	209		
DEC	257		

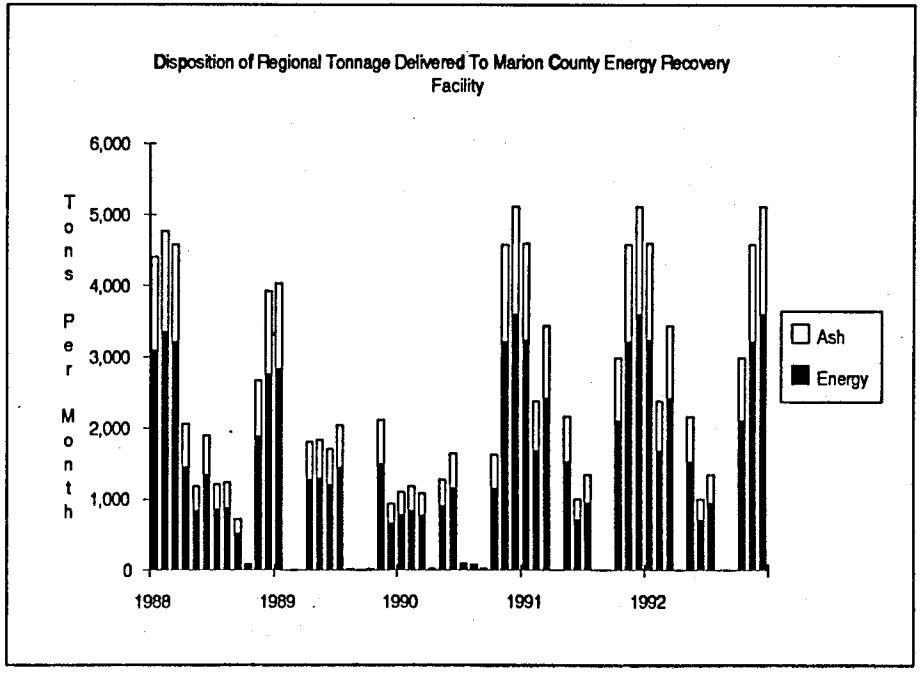
St. Johns Landfill

Month	Delivery (tons) 1989	1990	% Change
JAN	42	64	52%
FEB	34	37	9%
MAR	31	76	145%
APR	54	65	20%
MAY	70	73	4%
JUN	54	81	50%
JUL	50	89	78%
AUG	64	79	23%
SEP	63	73	16%
OCT	49		
NOV	65		
DEC	48		

Marion County Energy Recovery Facility

Marion County Energy Recovery Facility is a privately owned and operated non-franchised waste-to-energy facility with limited material recovery capability (primarily iron, iron alloys and other metals). It is located in Brooks, Oregon. Beginning April 1990 the approximate waste delivered from the Metro region to the facility will include: 12,100 tons per year directly hauled by United Disposal and 24,500 tons per year from the Metro South Transfer Station. Approximately 70% of the incoming waste is converted to energy. The remaining ash is taken to the ash monofill in Woodburn for final disposal.

Month	1988	1989	1990	1991	1992
	Historical	Historical	Historical	Expected	Expected
January	4,403	4,026	1,098	4,600	4,600
February	4,767	0	1,182	2,400	2,400
March	4,574	0	1,081	3,400	3,400
April	2,048	1,799	13	0	0
May	1,176	1,823	1,271	2,100	2,100
June	1,889	1,699	1,630	1,000	1,000
July	1,208	2,033	92	1,300	1,300
August	1,235	3	75	0	0
September	719	0	21	0	0
October	87	4	1,600	3,000	3,000
November	2,667	2,108	4,600	4,600	4,600
December	3,920	930	5,100	5,100	5,100
Total Tons	28,693	14,425	17,800	27,500	27,500

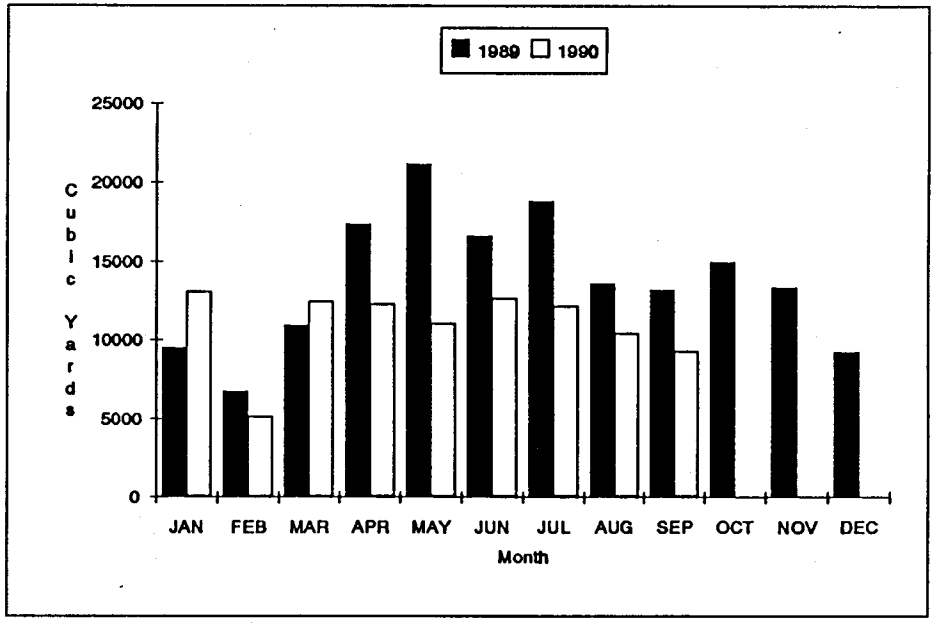


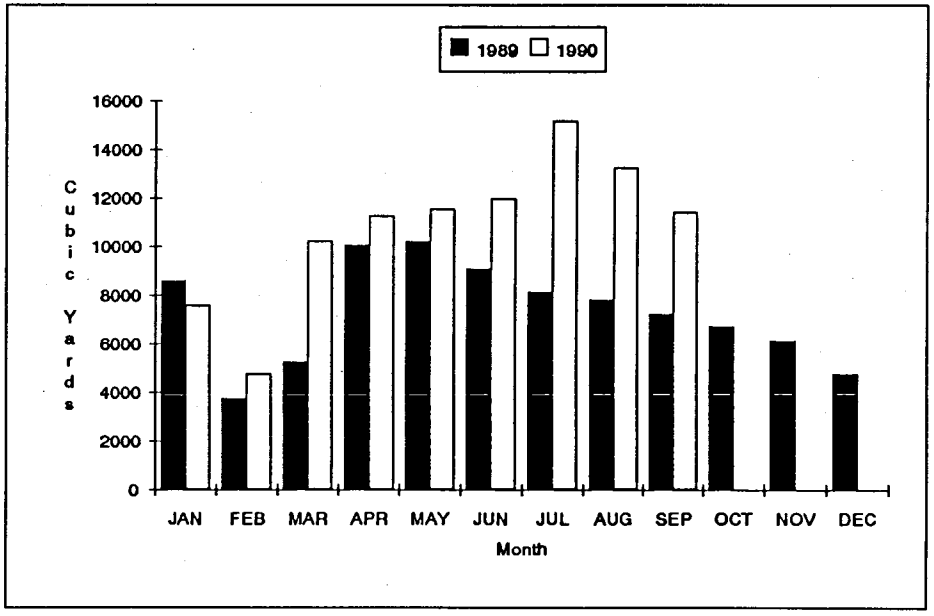
Yard Debris Processing

Grimm's Fuel Company and McFarlane's Bark , Inc.

Grimm's Fuel Company and McFarlane's Bark, Inc., receive source-separated yard debris and process the material into compost products for soil amendment or ground cover. Included in the volume received are loose yard debris, compacted yard debris, chips and sawdust.

The top right graph shows delivery to Grimms and the bottom right graph shows delivery to McFarlane's.





Grimm's Fuel Company

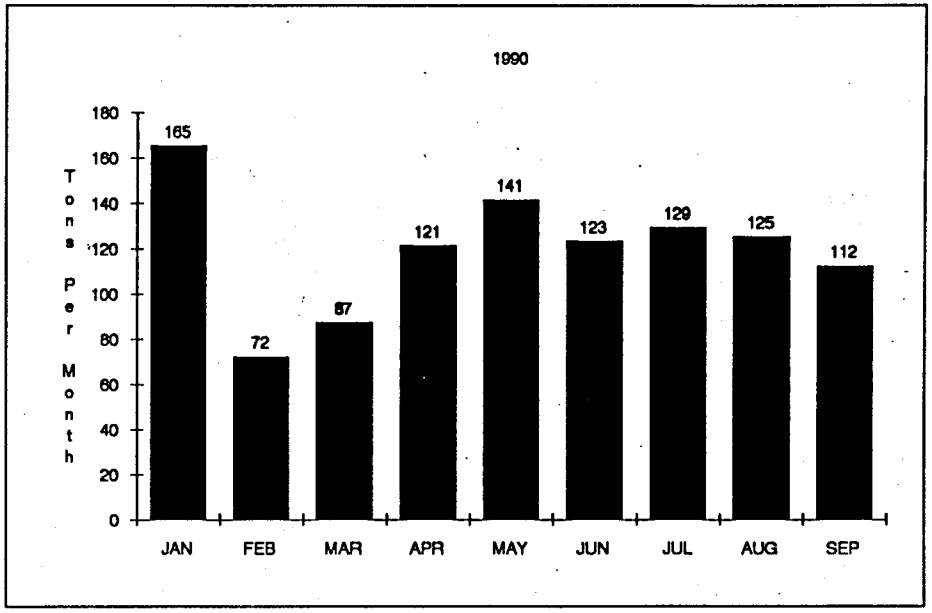
	Received (cubic yards)		
Month	1989	1990	% Change
JAN	9454	13045	38%
FEB	6737	5121	-24%
MAR	10900	12418	14%
APR	17224	12273	-29%
MAY	21145	11021	-48%
JUN	16626	12649	-24%
JUL	18788	12155	-35%
AUG	13603	10407	-23%
SEP	13159	9250	-30%
OCT	14945		
NOV	13354		
DEC	9238		

McFarlane's Bark, Inc.

	Received (cubic yards)		
Month	1989	1990	% Change
JAN	8579	7575	-12%
FEB	3722	4735	27%
MAR	5232	10215	95%
APR	10038	11251	12%
MAY	10200	11525	13%
JUN	9094	11965	32%
JUL	8121	15170	87%
AUG	7807	13241	70%
SEP	7207	11405	58%
OCT	6722		
NOV	6116		
DEC	4756		

St. Johns Landfill

St. Johns Landfill accepts source-separated yard debris that is then transferred to a processing facility. Tonnage data are only available for the first 6 months of 1990. Commercial yard debris is weighed at St. Johns Landfill but self-haul is not. Self-haul tonnage is estimated using the following conversions: 4 cubic yards per trip and 8 cubic yards per ton.



V. Glossary

Ash

The relatively inert residue that remains after a solid waste and fuel mixture has been incinerated or converted via pyrolysis. May include extraneous non-combustibles, unburned carbon as well as the mineral matter inherent in the combustible material.

Buy-Back Center

A facility dedicated to the repurchase of recyclable products from the public.

Collection

The process of picking up wastes at homes, businesses and other locations, loading them into a collection vehicle and hauling them to a waste processing facility or for final disposal.

Collection Routes

The routes followed by collection vehicles for the process of collection.

Collection System

The combination of people and equipment used in the collection of solid wastes. Solid waste collection systems may be classified to include the mode of operation, equipment used or types of wastes collected.

Combustibles

Materials in solid waste that can be ignited and then maintain combustion. In general, combustibles are organic in nature (e.g., paper, plastics, wood and food wastes).

Co-mingled (Commingled) Recyclables

Mixed recyclable materials that have been separated from non-recyclable, disposable materials in the waste stream.

Commercial Solid Waste

Wastes that originate in wholesale, manufacturing, retail or service businesses.

Compactor

Any power driven equipment designed to reduce the volume of wastes by compression.

Compost

A mixture of organic wastes that have been aerobically or anaerobically decomposed to an intermediate state. Many types of compost are poor in nitrogen and are thus poor fertilizer. Composts are generally used to improve the bulk characteristics of soils, such as their moisture retaining properties or cohesiveness.

Composting Facility

A specially designed and constructed facility that uses aerobic and anaerobic microorganisms to decompose the organic fraction of a variety of wastes; including yard debris, mixed solid waste and sewage sludge. The end product contains only inert (nonreactive) compounds that can be safely stored, handled and applied to land.

Construction and Demolition Wastes

Wastes produced in building, repair, remodeling or demolition of various types of structures. These include lumber, miscellaneous metals, concrete, asphalt, plastics, brick, rocks, glass, plastics, soil and other bulky wastes.

Disposal

All activities associated with the orderly, long-term handling of both collected solid wastes and residual wastes that occur after solid waste is processed or recovered for conversion purposes. Ultimate disposal of wastes is usually accomplished by means of sanitary landfilling.

Disposal Site

As defined in ORS 459.005, "Land and facilities used for the disposal, handling or transfer of, or resource recovery from, solid wastes, including but not limited to dumps, landfills, sludge lagoons, sludge treatment facilities, disposal sites for septic tank pumping or cesspool cleaning services, transfer stations, resource recovery facilities, incinerators for solid waste delivered by the public or by a solid waste collection service, composting plants and land and facilities previously used for solid waste disposal at a land disposal site." The term does not include facilities subject to certain types of special permitting requirements, landfills which receive only rocks, soil, concrete or other non-decomposable materials unless the site is used by the public either directly or through a solid waste collection service, or sites operated by certified wreckers.

Energy Recovery

As defined in ORS 459.005, "...recovery in which all or a part of the solid waste materials are processed to utilize the heat content, or other forms of energy, of or from the material." Commonly refers to the use of thermal conversion products (energy) that are released during the combustion or chemical conversion of solid waste to produce electricity and/or steam.

Facility

Any assemblage of structures and/or equipment used in the collection, storage, conversion, processing or disposal of solid waste. Usually refers to a transfer station, recycling center, materials recovery processing center or energy recovery plant.

Ferrous Metals

Iron-containing metals. In the waste stream these metals usually include automobiles, refrigerators, stoves, etc. Most ferrous metals are magnetic.

Flow Control

A government entity's ability to manage and direct the waste stream by ordinance, regulation, contract or disposal cost limitation. Control of the waste stream can be critical to waste management systems of all kinds, whether they include landfills, materials recovery processing or any other type of facilities or activities.

Food Wastes

Animal or vegetable wastes resulting from the harvesting, handling, storage, sales, preparation, cooking, serving or consumption of food or food products (not including human excretory wastes). Commonly known as garbage.

General Purpose Landfill

A landfill that receives all types of residential, commercial and industrial wastes, excluding regulated hazardous wastes. See also Sanitary Landfill.

Haul Distance

The distance a collection vehicle travels after picking up a loaded container, or from its last pickup stop on a collection route, to the solid waste processing facility, and, after unloading, to the location where the empty container is to be deposited or to the beginning of a new collection route.

Haul Time

The time spent transporting solid wastes between two specific locations.

High Grade Facilities

Dedicated facilities, or processing lines within other facilities, used to process and recover recyclable materials from high grade loads of waste. See also High Grade Wastes.

High Grade Wastes

In local usage it is defined as loads of waste paper from offices, businesses or industries that contain 90% or greater recyclable content. In general usage it defines any load of waste material which contains significant recyclable content, typically above 75%. These waste materials may include cardboard (OCC), computer papre and other high quality paper products, metals, plastics, etc.

Landfill

See Sanitary Landfill.

Material Recovery

As defined in ORS 459.005, "...any process of obtaining from solid waste, by presegregation or otherwise, materials which still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose." See also Resource Recovery.

Material Recovery or Recycling Facility (MRF)

An automated or semi-automated facility used for recovering and recycling materials from the solid waste stream. See also Intermediate Processing Center.

Mechanical Separation

The separation for wastes into various classes such as metals, glass and plastics by mechanical means.

Municipal Solid Waste (MSW)

Includes non-hazardous waste generated in households, commercial and business establishments, institutions, and light industrial wastes; it excludes industrial process wastes, agricultural wastes, mining wastes, construction and demolition wastes, and sewage sludge. In practice, specific definitions vary across jurisdictions. See also Solid Waste.

Nonferrous Metals

Metals that are not contain iron. Nonferrous metal usually include aluminum, copper, brass, bronze, silver, gold, nickel and zinc.

Oregon Revised Statutes, Chapter 459 (ORS 459)

Solid Waste Control. The statutory provisions regarding state regulation of solid waste for the State of Oregon.

Processing

Any means designed to change the form, chemical content or physical characteristics of solid wastes.

Processor

A recycling operation where secondary materials are sorted, graded, cleaned, densified or packaged. Included are scrap metal yards and waste paper dealers.

Putrescible Waste

Food wastes and other organic wastes, subject to decomposition or decay.

Recyclable Material

As defined in ORS 459.005, "...any material or group of materials that can be collected and sold for recycling at a net cost equal to or less than the cost of collection and disposal of the same material." Also refers to material that can be utilized in place of a raw or virgin material in manufacturing a product. Consists of materials derived from post consumer waste, industrial scrap, materials derived from agricultural wastes or other items.

Recycling

As defined in ORS 459.005, "...any process by which solid waste materials are transformed into new products in such a manner that the original products may lose their identity."

Residential Solid Wastes

Wastes generated in homes generally consisting of consumer goods wastes such as newspaper, cardboard, glass, plastic, food wastes, garden and lawn wastes, etc.

Resource Recovery

As defined in ORS 459.005, "...the process of obtaining useful material or energy resources from solid waste." A concept involving the extraction of economically usable materials or energy from wastes. It may involve recycling or physical/chemical conversion to various end products.

Reuse

As defined in ORS 459.005, "...the return of a commodity into the economic stream for use in the same kind of application as before without change in its identity."

Sanitary Landfill

A land area where municipal solid wastes are disposed of under regulatory control. An engineered disposal site for solid wastes that protects the environment. Generally includes extensive designing of a leachate collection system, a lining system and an applied management plan.

Separation

Division of wastes, either manually or mechanically, into groups of similar materials such as paper, glass or metal. Also used to describe the further sorting of materials into more specific categories such as types of glass (clear, brown, etc.), types of metals (aluminum, iron, etc.) and types of paper (newspaper, cardboard, office paper, etc.).

Solid Waste

As defined in ORS 459.005, "...all putrescible and non-putrescible wastes, including but not limited to garbage, rubbish, refuse, ashes, waste paper, and cardboard; sewage sludge, septic tank and cesspool pumpings or other sludge; commercial, industrial, demolition and construction wastes; discarded or abandoned vehicles or parts thereof; discarded home and industrial appliances; manure, vegetable or animal solid and semisolid wastes, dead animals and other wastes."

See also Construction and Demolition Debris, Commercial Wastes, Industrial Wastes, Institutional Wastes, Municipal Wastes and Residential Wastes.

The Resource Conservation and Recovery Act of 1976 (RCRA) defines solid waste to include"...garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities..."

Source Separation

As defined in ORS 459.005, "...the person who last uses recyclable material separates the recyclable material from solid waste." The act of segregating recyclable materials from waste products at the point, they are generated, prior to collection and transport to a solid waste processing facility.

State Hierarchy

The policy developed by the State of Oregon and defined in ORS 459.015 which establishes a hierarchy for managing solid waste in order to conserve energy and natural resources. The rank order listing of the hierarchy is as follows

- Reducing the amount of solid waste generated;
- Reusing material for the purpose for that it originally was intended;

- Recycling material that cannot be reused;
- Recovering energy from solid waste that cannot be reused or recycled, so long as the energy recovery facility preserves the quality of air, water and land resources; and
- Disposal of solid waste that cannot be reused, recycled, or from which energy cannot be recovered by landfilling or other methods approved by the Department of Environmental Quality.

Ton/Tonnage

A unit of weight equal to 2,000 pounds, also called a short ton.

Transfer Station

As defined in ORS 459.005, "...a fixed or mobile facility normally used, as an adjunct of a solid waste collection and disposal system or resource recovery system, between a collection route and a disposal site."

Waste Generation

The act or process of creating solid wastes, usually as a by-product of another action.

Waste Reduction

The practice of producing smaller quantities of disposal waste. Activities by manufacturers (e.g., modifying products) and consumers (e.g. modifying purchasing decisions) that reduce toxicity or quantity of products before they are purchased.

Waste Stream

A term describing the total flow of solid waste in an area from homes, businesses, institutions and manufacturing plant that must be recycled, burned, or disposed of in landfills; or any segment thereof, such as the "residential waste steam" or the "recyclable waste stream."

Waste-To-Energy Plant

Recovery of the energy content of solid waste through incineration at a thermal conversion plant.

Yard Debris

Miscellaneous plant clippings, branches, prunings, leaves, and other discarded material derived from yards and gardens.

Yard Debris Processing Center

A facility that processes yard debris into a usable soil amendment through controlled biological decomposition.

405 Materials

Those materials set forth in Oregon Senate Bill (SB) 405 for curbside pickup in areas with a population over 4,000. Include corrugated cardboard, newspaper, glass, ferrous metals, aluminum and other non-ferrous metals, used motor oil and yard debris. Also referred to as principle recyclables.