



METROPOLITAN SERVICE DISTRICT  
527 S.W. HALL ST., PORTLAND OR. 97201. 503/221-1646

## AGENDA --- REGULAR COUNCIL MEETING

Date: MAY 26, 1983  
Day: THURSDAY  
Time: 7:30 P.M.  
Place: COUNCIL CHAMBER

Approx.  
Time

Presented By

- 7:30 CALL TO ORDER  
ROLL CALL
1. Introductions.
  2. Councilor Communications.
  3. Executive Officer Communications.
  4. Written Communications to Council on Non-Agenda Items.
  5. Citizen Communications to Council on Non-Agenda Items.
- 8:00 6. CONSENT AGENDA

6.1 Minutes of the meetings of April 14, and April 25, 1983.

### Development Committee Recommendations:

- |                                                                                                                                  |                        |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 6.2 <u>Resolution No. 83-398</u> , for the purpose of approving a procedure to allocate Federal Aid Urban Funds to Forest Grove. | Williamson/<br>Cotugno |
| 6.3 <u>Resolution No. 83-399</u> , for the purpose of amending the FY 83 Unified Work Program for Computer Purchase.             | Williamson/<br>Cotugno |
| 6.4 <u>Resolution No. 83-404</u> , for the purpose of approving the FY 1984 Unified Work Program (UWP).                          | Williamson/<br>Cotugno |

### Coordinating Committee Recommendations:

- |                                                                                                                                    |                        |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 6.5 Contract approval for the purchase of Transportation Planning software (Emme 2) and hardware (Pixel Super Micro-Computer).     | Kirkpatrick/<br>Lawton |
| 6.6 <u>Resolution No. 83-406</u> , for the purpose of authorizing a new Regional Planner I position in the Solid Waste Department. | Kirkpatrick/<br>Sims   |
| 6.7 Ratification of Waiver of Personnel Rules.                                                                                     | Kirkpatrick/<br>Banzer |

COUNCIL AGENDA

May 26, 1983

Page Two

Approx.  
Time

Presented By

7. ORDINANCES

8:05	7.1 <u>Consideration of Ordinance No. 83-154</u> (authorizing computer purchase), relating to the FY 1982-83 budget and appropriations schedule, and amending Ordinance No. 82-132. (Second Reading)	Kirkpatrick/ Lawton
8:15	7.2 <u>Consideration of Ordinance No. 83-155</u> , relating to the composition of the Contract Review Committee of the Council and amending Ordinance No. 82-130. (First Reading)	Kirkpatrick/ Banzer

8. RESOLUTIONS

8:25	8.1 <u>Consideration of Resolution No. 83-405</u> , for the purpose of supporting the Governor's budget request for obtaining new minimum or medium security prison space.	Hansen/ Oleson
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9. OTHER ACTIONS

8:35	9.1 Confirmation of appointment of Councilor Etlinger to the Council Coordinating Committee.	Banzer
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10. Legislative Report

11. Committee Reports

9:00 ADJOURN



BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF DECLARING THE	)	RESOLUTION NO.
METROPOLITAN SERVICE DISTRICT	)	
COUNCIL'S INTENT TO DO NOTHING	)	
TOWARD THE MERGER OF THE TRI-	)	
COUNTY METROPOLITAN TRANSPORTATION	)	Introduced by
DISTRICT AND THE METROPOLITAN	)	Councilor Van Bergen
SERVICE DISTRICT	)	

WHEREAS, the issue of the relationship between the Tri-County Metropolitan Transportation District (Tri-Met) and the Metropolitan Service District (Metro) has been the subject of public discussion by this Council through consideration of:

1. H.B. 2228 currently introduced in the Legislature which would alter the merger provisions for Tri-Met and Metro;

2. A letter from Representative Glenn Otto to the Metro Council and the Tri-Met Board of Directors requesting the leadership of the two organizations to establish a mutually acceptable process for resolving the "uncertain" relationship between the two parties;

3. A recommendation from the Executive Officer in a memo dated May 3, 1983 supporting an independent review of the Tri-Met/Metro relationship and further recommending that: a) a letter be sent to Representative Otto setting forth certain agreed upon principles which Metro feels are important in such a review; and b) the Metro Council should agree upon a set of policies relevant to the review; and

4. A resolution introduced by Councilor Bonner for the purpose of declaring the Metro Council's intent to develop a plan and bring about the merger of Metro and Tri-Met; and

WHEREAS, it is important for the Metro Council to bring this issue to a conclusive and definite close so that it may proceed to conduct more pressing business confronting the organization, including development of a plan and strategy for future funding for the Zoo and general government activities, and development and adoption of Solid Waste Systems and Zoo Master Plans; and therefore,

BE IT RESOLVED,

1. That the Metro Council declares that it will do nothing to change the basic existing working arrangement and relationship between Metro and Tri-Met;

2. That the Metro Council understands and respects the fact that both organizations are separate municipal corporations which have separate but compatible functions in the area of public transportation and that Metro supports continuance of the close cooperative working relationship that has developed between both organizations;

3. That the Executive Officer be instructed to convey the message of this resolution in an appropriate manner to all interested parties and the general public.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

GVB:ef  
5/17/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT .

FOR THE PURPOSE OF DECLARING THE	)	RESOLUTION NO.
METROPOLITAN SERVICE DISTRICT	)	
COUNCIL'S INTENT TO COMMENCE THE	)	Introduced by
EVALUATION OF COMBINED METRO/	)	Councilor Hansen
TRI-MET FUNCTIONS	)	

WHEREAS, Public transportation is a regional service and its efficient provision is a regional priority; and

WHEREAS, The proliferation of single purpose regional government should be discouraged and the consolidation of regional governments under an elected governing body would increase the accountability and responsiveness of regional officials to the citizenry through the election process; and

WHEREAS, The accountability through direct election of regional policy officials was supported, as a desirable goal, for the Tri-County Local Government Commission and the Oregon Legislature in 1977, by the voters of this region in 1978, and again by the State House Committee on Intergovernmental Affairs this year; and

WHEREAS, The relationship between Metro and Tri-Met can no longer remain undefined; now, therefore,

BE IT RESOLVED,

1. That the Metro Council hereby declares its belief that the relationship between the Metropolitan Service District and Tri-Met should be defined.

2. That the Metro Council will commence the evaluation of combined Metro/Tri-Met functions, powers, duties, responsibilities and funding of both organizations.

3. That reasonable options for delivering regional transportation services shall be formulated and evaluated on the following criteria:

- a. Increasing accountability and responsiveness of regional officials to the citizenry through the election process;
- b. Efficient operation of regional transit service;
- c. Reduction in the number of single purpose regional jurisdictions;
- d. Ability to integrate land use planning.

4. That the completion of this evaluation shall be no later than January 30, 1984.

5. That the Metro Council direct the Presiding Officer and Executive Officer to initiate a process for such an evaluation and present it to the Council. Such a process shall include provisions for wide public review.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

CB/gl  
8647B/349  
5/23/83





METRO

**METROPOLITAN SERVICE DISTRICT**

527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

**MEMORANDUM**

Date: May 25, 1983  
To: Metro Council  
From: Rick Gustafson, Executive Officer  
Regarding: Yard Debris Steering Committee Report

In February 1981, I appointed a Yard Debris Steering Committee to assist with the management of an air pollution control program grant and to advise on the alternatives that could be taken to meet its objectives and goals. The Committee recently completed and transmitted a copy of their report and recommendations to me. I am pleased to also provide you with a copy of their work. Now that the report is available we can commence deliberations on long-term policy implications. A brief history will help put our role into perspective.

Metro applied for and was awarded a \$265,000 grant from the Environmental Protection Agency (EPA) in January of 1981. "The demonstration program would be managed by a regional coordinator and a project steering committee made up of the DEQ, Metro, City of Portland and other pertinent jurisdictions." The purpose of the award was to "provide funding for the demonstration of usable alternative uses of yard debris to prevent the resumption of backyard burning and the loss of air quality benefits." The general objectives of the project were to:

1. Demonstrate that a total ban on backyard burning in the Portland metropolitan area can be implemented without placing an additional burden on the area's scarce landfill capacity.
2. To demonstrate that special processing techniques can convert the yard debris waste stream into a valuable, usable resource.
3. To provide a better information base to implement a viable alternative program on a permanent basis.

The specific project goal for Metro was to "demonstrate publicly acceptable and feasible alternatives for the recovery of yard debris in the Portland metropolitan area. Based on the final evaluation of the project to recommend an implementable regional yard debris recovery program."

Memorandum  
May 26, 1983  
Page 2

One of the Committee's findings are that "it has been demonstrated that with an adequate collection system, recycling of yard debris into hog fuel, mulch and compost is a publicly acceptable and feasible alternative for the recovery of yard debris in the Portland metropolitan area. Although an areawide collection is not now in place it has been demonstrated that feasible collection alternatives are available or can be made available."

It is also significant that the Committee's recommendations for making alternatives available are directed not only at Metro, but DEQ, citizens, local jurisdictions, haulers and processors. They recognize, and I agree, that all of the policy decisions necessary are not within Metro's authority and that the cooperation and commitment of all involved is necessary to meet the original goals and objectives.

The action I recommend is to jointly conduct two public forums, asking all involved to comment on the report. This is a pertinent role for Metro. The key policy decisions are interjurisdictional and need a forum for resolution. Long-term actions should come after the discussions have illuminated those policies, priorities and responsibilities. Our own actions must harmonize with those of others.

My directions to staff were to model these forums after the successful series of meetings held on the ERF last fall. It will take approximately eight weeks to set them up (May 26-July 22); one week to conduct (July 25-27); and three to publish the results (August 1-19). This will precede and complement DEQ's hearings on a burning ban this fall. In the first eight weeks an Executive Summary of the Yard Debris Steering Committee's Report will be distributed to the general citizenry. Full reports will be mailed to local jurisdictions, key public officials, citizens and organizations, the state of Oregon, EPA, commercial haulers and processors. An accompanying letter will outline our interest in holding the forums and invite their comments.

DM/gl  
8673B/D4

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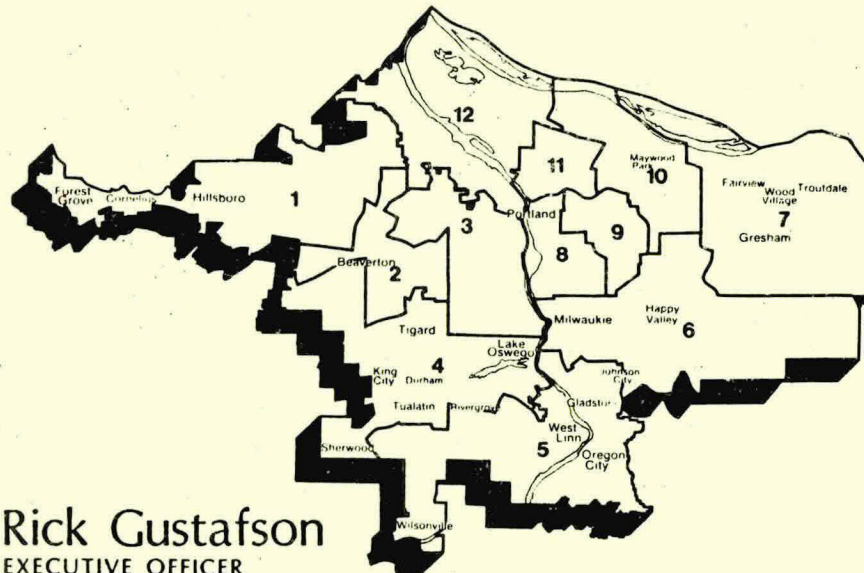
A DEMONSTRATION  
PROJECT FOR RECYCLING  
YARD DEBRIS



**METRO**  
MARCH 1983

---

# METROPOLITAN SERVICE DISTRICT



**Rick Gustafson**  
EXECUTIVE OFFICER

## C O U N C I L

**Cindy Banzer**  
PRESIDING OFFICER  
DISTRICT 9

**Bob Oleson**  
VICE-PRESIDING OFFICER  
DISTRICT 1

**Richard Waker**  
DISTRICT 2

**Sharron Kelley**  
DISTRICT 7

**Charlie Williamson**  
DISTRICT 3

**Ernie Bonner**  
DISTRICT 8

**Corky Kirkpatrick**  
DISTRICT 4

**Bruce Etlinger**  
DISTRICT 10

**Jack Deines**  
DISTRICT 5

**Marge Kafoury**  
DISTRICT 11

**George Van Bergen**  
DISTRICT 6

**Gary Hansen**  
DISTRICT 12





## METROPOLITAN SERVICE DISTRICT

Providing Zoo, Transportation, Solid Waste and  
other Regional Services

May 23, 1983

Rick Gustafson  
Executive Officer

### Metro Council

Cindy Banzer  
Presiding Officer  
District 9

Bob Oleson  
Deputy Presiding  
Officer  
District 1

Richard Waker  
District 2

Charlie Williamson  
District 3

Corky Kirkpatrick  
District 4

Jack Deines  
District 5

George Van Bergen  
District 6

Sharron Kelley  
District 7

Ernie Bonner  
District 8

Bruce Etlinger  
District 10

Marge Kafoury  
District 11

Gary Hansen  
District 12

The Honorable Rick Gustafson,  
Executive Officer  
Metropolitan Service District  
527 SW Hall Street  
Portland, Oregon 97201

Dear Rick:

In February 1981, you established the Yard Debris  
Steering Committee with the following purposes:

1. To assist you with the Yard Debris Demonstration Project as part of the EPA Air Pollution Control Grant.
2. To recommend and monitor the yard debris detail work program.
3. To advise on alternatives which Metro might undertake to meet project objectives.
4. To involve state agencies, local jurisdictions and general public in the Metro area in the decision making process.

The Yard Debris Steering Committee has met regularly for the past two years and we feel a lot has been accomplished. As a result of the Demonstration Project, three private firms have set up sites to recover yard debris. We feel that a viable alternative to burning and landfilling is available to a majority of the citizens in the region.

Based on the findings of the attached Project Evaluation Report, we offer the following recommendations for your consideration:

527 SW Hall St.  
Portland, OR  
97201  
503/221-1646

Honorable Rick Gustafson  
May 23, 1983  
Page 2

To improve the air quality of the region, and to reduce the region's dependency on landfills, Metro and the Department of Environmental Quality (DEQ) should take appropriate measures to keep existing processing operations viable. These measures include:

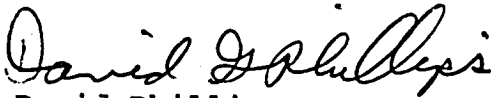
1. DEQ should take the appropriate measures to divert all yard debris from disposal to processing facilities.
2. Metro should continue the policy of separate handling and processing of all source separated yard debris brought to Metro facilities.
3. DEQ and Metro should encourage and provide technical assistance to all local jurisdictions to provide separate collection of yard debris.
4. Metro should provide promotion/education assistance to local jurisdictions who initiate separate collection of yard debris.
5. Metro should consider including yard debris as a material to be recovered in residential recycling collection programs proposed by Metro.
6. When there is a sufficient public demand for the service, commercial haulers should provide separate collection of yard debris.
7. DEQ should ban backyard burning in appropriate areas and appropriate times in accordance with the findings of the report.

Honorable Rick Gustafson  
May 23, 1983  
Page 3

We appreciate the opportunity of working with you on this project and look forward to periodically monitoring the program adopted by yourself and the Metro Council.

Thank you again.

THE YARD DEBRIS STEERING COMMITTEE

  
David Phillips,  
Committee Chairman

DP/WC:pp

A DEMONSTRATION PROJECT  
FOR  
RECYCLING YARD DEBRIS

Metropolitan Service District  
Solid Waste Department

March 1983



DISCLAIMER

"Although the research described in this article has been funded wholly or in part by the United States Environmental Protection Agency through grant A000227810 to the Metropolitan Service District, it has not been subjected to the Agency's required peer and policy review and, therefore, does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

### ACKNOWLEDGEMENTS

This project was partially funded from an Environmental Protection Agency (EPA) Air Pollution Control Program Grant #EPA-A-000227810.

#### PROJECT COORDINATION - Metropolitan Service District

Project Management: D. Durig, N. Wietting, D. Mulvihill and G. Rivera  
Author: W. Coppel  
Staff Support: N. Carter, D. Robertson, A. Holsted,  
S. Blackledge, G. Logan, B. Bailey, J. Willworth

#### PROJECT ADMINISTRATION - U. S. Environmental Protection Agency

Project Officers were: J. Vlastelicia, Director,  
Oregon Operations Office  
J. Herlihy, Air Coordinator,  
Oregon Operations Office

#### STEERING COMMITTEE

##### Voting Members:

City of Portland	D. Stefani
Dept. of Environmental Quality	M. Hope (B. Bree and
	J. Kowalczyk)
Washington County	M. Sandberg
Clackamas County	D. Phillips (Chairman)
City of Troutdale	P. Christian
City of Oregon City	D. Fish
City of Beaverton	D. Bailey
City of Gladstone	R. Partch
City of Lake Oswego	C. Vaniman
Air Quality Advisory Committee	J. Roy
City of Hillsboro	K. Martin

##### Non-Voting Members

Environmental Protection Agency	J. Herlihy
Metropolitan Service District	G. Rivera (W. Coppel)

Minutes: P. Polly, Metro

#### DEMONSTRATION CONTRACTORS

Shredding Systems, Inc.  
P. O. Box 574  
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Wilsonville, Oregon 97070  
(503) 682-3633

Waste By-Products, Inc.  
8501 N. Borthwick  
Portland, Oregon 97217  
(503) 282-6903

McFarlane's Bark, Inc.  
P. O. Box 338  
13345 S.E. Johnson Road  
Clackamas, Oregon 97015  
(503) 659-4240

Grimm's Fuel, Co.  
1631 South Shore Boulevard  
Lake Oswego, Oregon 97034  
(503) 636-3623

Genstar/Easley and Brassy  
Waste-Go Services  
Edwin O. Ege Sanitary Service, Inc.

Rossman's Sanitary Service  
Rossman's Landfill, Inc.

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## PART 2

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### PART 2

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### Appendix

Appendix to Part 1 . . . . .

Appendix to Part 2 (under separate cover)

EXECUTIVE SUMMARY

## INTRODUCTION

The problem is yard debris--limbs, brush, vines, leaves and grass--and how to dispose of over 600,000 cubic yards (cu yd) which is generated each year in the metropolitan area. As can be seen in Figure 1, some people burn their yard debris and some illegally dump it on the side of the road. Most people either compost, give their yard debris to the garbage collector with the rest of the garbage, or haul it themselves to a landfill.

The Portland metropolitan area is designated a non-attainment area for National Ambient Air Quality Standards for total suspended particulates (TSP). The Department of Environmental Quality (DEQ) has identified open burning of yard debris as a significant controllable source of particulate air pollution in the Portland metropolitan area. Thus, a need has been identified to develop alternatives to open burning. Landfilling is not an acceptable alternative since capacity is strained at present.

In December 1980, the Environmental Quality Commission (EQC) adopted a ban on backyard burning of yard debris. Metro received an Air Pollution Control Program Grant in February 1981 to develop acceptable ways to dispose of yard debris which would have been generated by the ban. The EQC lifted the ban in March 1981 because the Commission was faced with possible action by the Oregon Legislature to lift the ban. The Legislature was concluding that local governments did not have a reasonable means to dispose of additional yard debris. The Legislature then adopted Senate Bill 327 which prevented the EQC from re-instituting the ban until June 30, 1982. Thereafter, EQC could only impose a ban if such prohibition was necessary to meet air quality standards and alternative disposal methods were reasonably available to a substantial majority of the population.

## PROJECT SCOPE

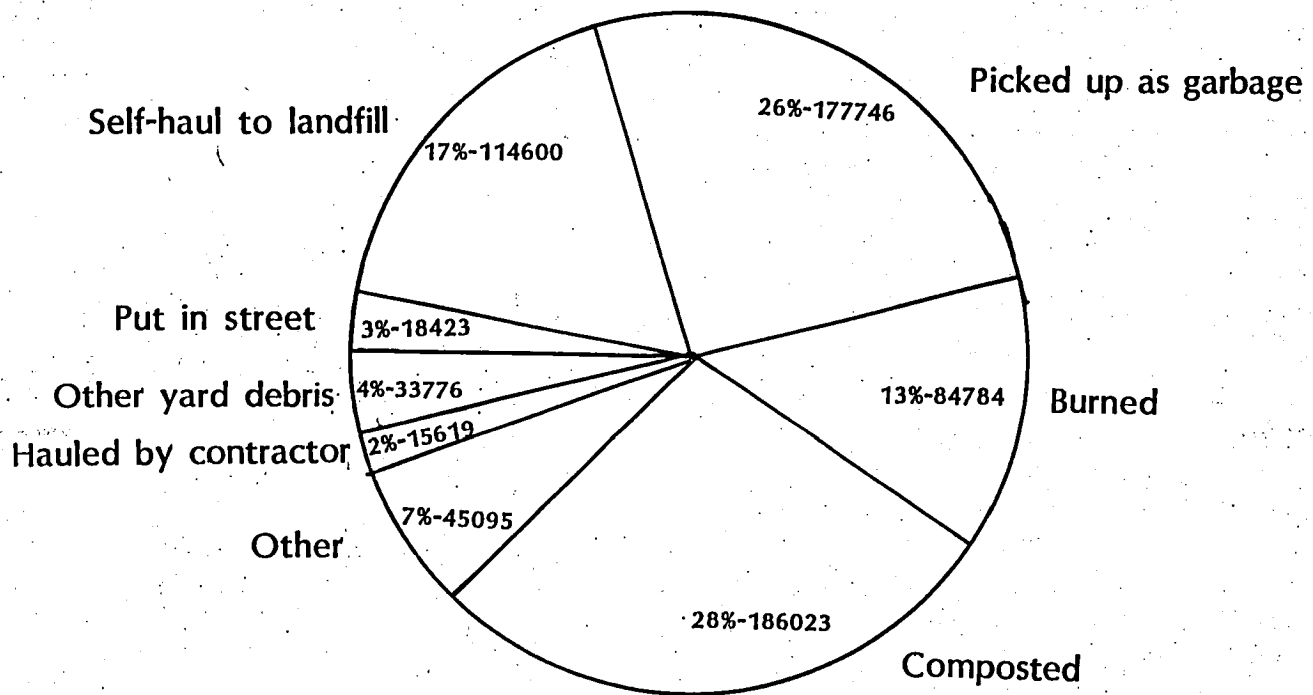
The objectives of this project were: 1) to demonstrate that a total ban on backyard burning in the Portland metropolitan area can be implemented without placing any additional burden on the area's scarce landfill capacity; 2) to demonstrate that special processing techniques can convert the yard debris waste stream into a valuable, usable resource; and 3) to provide a better information base to implement a viable alternative program on a permanent basis.

The project goal was:

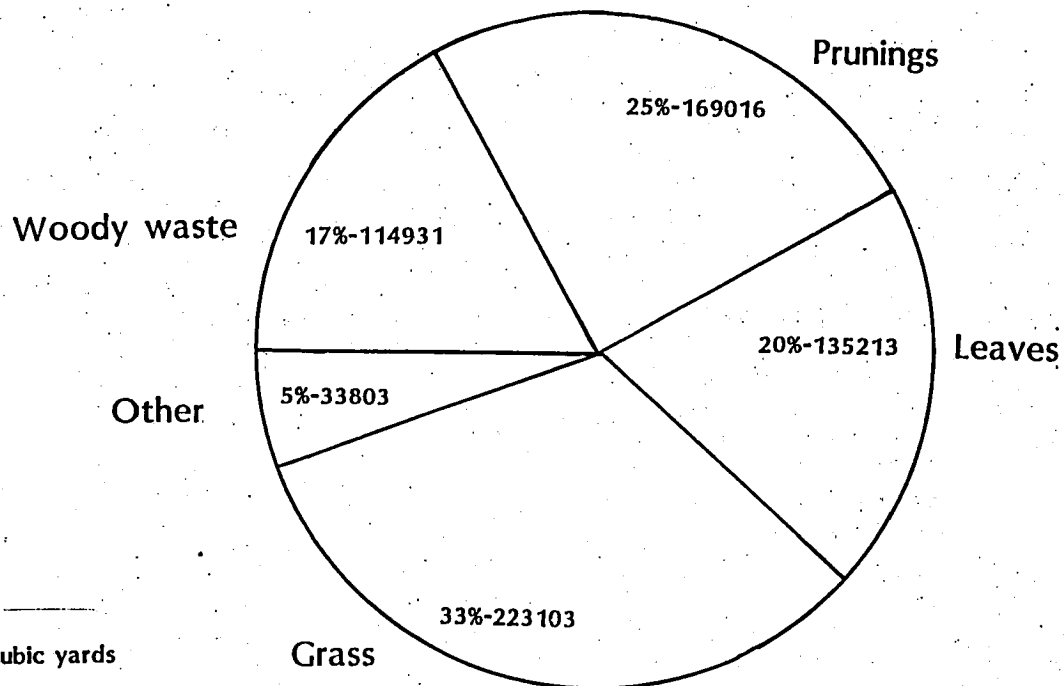
To demonstrate publicly acceptable and feasible alternatives for the recovery of yard debris in the Portland metropolitan area and to recommend an implementable regional yard debris recovery program.

The work plan was based on the following assumptions:

## What happens to yard debris?



## What is yard debris?



Values in cubic yards

Source: DEQ Survey, 1979



## YARD DEBRIS QUANTITIES

FIG. 1

1. There is an immediate need for a cost-effective system to adequately handle increasing amounts of yard debris due to a possible yard debris burning ban by DEQ.
2. Pressures on existing landfills discourage the continued disposal of increased volumes of material.
3. A workable solution must be based on proven examples of yard debris recovery programs, either locally or in other parts of the U.S.
4. There is a need to determine the volume and composition of yard debris as part of developing a comprehensive long-range program and market.
5. If there is an educational campaign, there will be an increase in the level of participation by the general public to do their own composting. Given either a homeowner's inability or unwillingness to compost/mulch green waste, a comprehensive program may have to address both green waste and wood waste (twigs, branches and tree limbs).
6. According to DEQ, open burning contributes to the particulate non-attainment status for the Portland Air Quality Maintenance Area (AQMA). According to the EQC and the DEQ, if viable alternatives to open burning are not available, a burning ban would be difficult to initiate and administer.

With a Coordinating and a Steering Committee of local officials, the Yard Debris Demonstration Project was conducted from May 1981 to September 1982. Metro was the coordinating agency for the project. Collection and processing alternatives were demonstrated to recover, process yard debris into marketable products. The demonstration project was conducted in several phases and an evaluation was completed for each. The purpose of the Phase Evaluations was to present the data on the collection and processing alternatives. The Phase Evaluations are in Part 2 of this report. The discussion and analysis of the alternatives are presented in Part 1.

#### PROJECT DESCRIPTION

The purpose of this report is to evaluate the Yard Debris Demonstration Project and outline collection, processing and market options which could be pursued in the future. The Demonstration of recovery processes and collection systems occurred in several phases over a 1-1/2 year period. The initial phase in May 1981 sought to recover only woody yard debris in a region-wide clean-up week. Shredding Systems, Inc., a processing service, demonstrated that with minor modifications, a mobile shredder could produce a marketable fuel product. In Phases II, III and IV, Waste By-Products, Inc., a waste recovery firm, showed that a Medallion 910 Grinder could process all types of yard waste into

salable fuel. McFarlane's Bark, Inc., a bark and wood products firm, improved their existing receiving site and purchased a hammermill as part of their composting demonstration. Toward the end of the project, Grimm's Fuel Co., a bark and wood products firm, started receiving yard debris and began producing a compost material. The processing alternatives demonstrated are outlined below and summarized in Table 1.

Shredding Systems, Inc.: Mobile shredding to "hog" fuel (correct usage is "hogged" fuel, but common usage is "hog" fuel).

Waste By-Products, Inc.: Mobile grinding to hog fuel. Pre-grinding, screening and magnetic separation, grinding to hog fuel and compost.

McFarlane's Bark, Inc.: Hammermilling, screening and composting in large stockpiles to compost products.

Grimm's Fuel Co.: Hammermilling, screening and composting in windrows to mulch/compost or hog fuel products (proposed).

Six collection alternatives were demonstrated in Phases II, III and IV. On-call and on-route curbside collection by private haulers and municipal crews were conducted. Two clean-ups were also held. A summary of collection alternatives demonstrated are in Table 1.

Case Study 1: Oregon City - On-route curbside collection by city crews.

Case Study 2: Lake Oswego - On-call curbside collection by franchised hauler.

Case Study 3: West Linn - On-call curbside collection by city crews.

Case Study 6: City of Portland - Neighborhood clean-ups.

Case Study 7: City of Beaverton - City-wide clean-up by city crews and franchised haulers.

Case Study 8: Southeast Portland - On-route curbside collection by non-franchised hauler.

## FINDINGS

This section summarizes the results of the analysis of the Yard Debris Demonstration Project.

### General

1. It has been demonstrated that with an adequate collection system, recycling of yard debris into hog fuel, mulch and compost is a publicly acceptable and feasible alternative for the recovery of yard debris in the Portland metropolitan area. Although an area-wide collection is not now in place, it has been demonstrated that feasible collection alternatives are available, or can be made available.



TABLE 1.  
Program Summary

<u>Phases</u>	<u>Dates</u>	<u>Collection Alternatives</u>	<u>Processing Locations</u>	<u>Yard Debris Quantities</u>	<u>Level of Participation</u>	<u>Promotion</u>
I (woody waste only)	May 16-24 1981 (1 week)	West Linn - Rossman's Sanitary Service Troutdale - Edwin O. Ege Sanitary Service City of Portland - Clean-ups	St. Johns Landfill Rossman's Landfill Obrist Pit	1,613 cy. yds.	610	News Releases Flyers Brochures PSA TV PSA Radio Newspaper Ads
II	October 23- February 28 1982 (19 weeks)	Case Study 1 - Oregon City Case Study 2 - Lake Oswego (2 collections) Case Study 3 - West Linn	St. Johns Landfill (Case Study 4) McFarlane's Bark (Case Study 5)	20,743 cu. yds.	5,657	Radio Spots Brochures Newspaper Ads PSA Tags News Releases
III	March 1- June 30 1982 (17 weeks)	Case Study 6 - City of Portland Clean-ups Case Study 7 - Beaverton Clean-up Case Study 8 - Waste-Go Services (S.E. Portland)	St. Johns Landfill McFarlane's Bark	24,141 cu. yds.	16,758	Radio Spots News Releases Brochures Presentations
IV	July 1- September 30 1982 (13 weeks)	-	St. Johns Landfill Waste By-Products McFarlane's Bark Grimm's Fuel	18,336 cu. yds.	6,608	Presentations

WC:bb  
12/9/82

2. It has been demonstrated that it is less expensive to process and recover yard debris than landfill the material.

Total costs for processing yard debris, exclusive of revenues from fees or marketed product, is \$1.48-\$3.45 cu yd. The cost to landfill is about \$3.00 per cu yd.

3. As a result of the demonstration project, three processing centers were established as a viable alternative to burning or landfilling of yard debris. The alternatives are available to citizens, commercial landscapers and collectors who want to dispose of source separated yard debris and/or wood waste.

The processing demonstration project was a success. Most of the project effort was made in the processing alternatives and as a result, Waste By-Products in North Portland, McFarlane's Bark, Inc. in Clackamas and Grimm's Fuel Co. in Sherwood have set-up sites to receive and process yard debris and wood waste.

4. It has been demonstrated that mixed yard debris can be processed into marketable products.

It has been demonstrated that mixed yard debris can be processed and sold as hog fuel for use in industrial boilers. It has been demonstrated that mixed yard debris can be processed into a compost product. The two processors who will market the product expect to sell all the compost produced from their operations. Two hog fuel markets were identified in the project--Weyerhaeuser Corp. in Longview, Washington, and Willamette Industries in Albany, Oregon. They have paid for hog fuel produced in the project. Although McFarlane's and Grimm's market compost material at their sites, not enough information has been generated to determine the levels of demand for the product. McFarlane's and Grimm's are currently developing products from the yard debris processed during the demonstration.

5. The three processing centers conveniently serve a majority of the region when convenience is defined as a condition where a user is within a 20-minute one way trip of a processing center.

Three current processing sites are conveniently located in the region. They are located on or near major highways and are

Author's Note: At the time of publication, a fourth site started receiving yard debris. The Wood Yard, Inc., a bark and wood products company in Aloha, will contract with a processor to produce hog fuel. The Wood Yard will deliver hog fuel to the supplier of their unprocessed bark. They say they could receive 10,000 cu yd of yard debris each month. This site would serve the Aloha, Beaverton, Hillsboro, Cornelius, Forest Grove area in Washington County.

generally accessible to a majority of residents in the region. However, according to traffic analyses, areas of Washington County and East Multnomah County are lacking convenient processing sites.

6. It was found that the four processors were willing to take substantial risks (costs of equipment, site development, etc.) to participate in the demonstration project.

All processors who participated in the project purchased equipment and/or developed processing sites. All have spent well over \$100,000 for equipment with the intent of receiving yard debris and wood waste in the future. In addition, processors with sites committed labor and material from other parts of their operations, and risked having to dispose of stockpiled material if products could not be marketed. Some reasons risks were taken:

- Processors were encouraged by EPA funding and DEQ support
- Environmentally conscious
- Processors were in wood or waste processing business

7. In 1983, the three established processing centers will be capable of receiving and processing all the yard debris generated in the region.

On the basis of on-site storage, unloading spaces, site access and safety, the three processing sites could receive well over 600,000 cu yd of yard debris this year. Because of their small site, Waste By-Products must continue to sell and remove their material. McFarlane's and Grimm's, however, could accept and process over 400,000 cu yd of yard debris and store over 20,000 cu yd of compost.

8. To cover costs, Grimm's Fuel Co. must receive and process 5,350 cu yd per month of yard debris (64,200 cu yd per year); Waste By-Products needs 6,000 cu yd per month (72,000 cu yd per year); and McFarlane's needs about 5,000 cu yd per month (60,000 cu yd per year) for a total of 196,200 cu yd annually.

9. 196,200 cu yd of material could be generated annually, if the following occurred:

- divert all yard debris currently self-hauled by the public to landfills (100,000-115,000 cu yd);
- divert all yard debris currently hauled by landscapers (14,000-16,000 cu yd); and
- divert all yard debris currently being burned (76,000-85,000 cu yd).

From the data and interviews, the three processors need substantial yard debris and wood waste to continue operating. Waste By-Products, who produces a hog fuel product, needs more than just yard debris to sustain operations. They need wood

waste from commercial sources to improve the fuel value of the (sometimes very wet) yard debris.

10. Of the six collection alternatives demonstrated, on-route curbside collection by the private hauler was most effective in terms of economics, efficiency and public convenience.

Costs for a one-time pick-up of yard debris by a private hauler including disposal varied from \$4.50 - \$5.25 per loose cu yd and \$2.50 - \$8.00 per participant. The range of costs was large because of the difference in collection methods, housing density and yard debris generation per household of the collection alternatives. City sponsored clean-ups with voluntary labor and donated equipment were the least costly collection alternatives demonstrated. Low resident voluntary participation and small quantities of yard debris recovered were generally experienced when demonstrating collection alternatives.

11. Yard debris was received uniformly from March through November.

With a few exceptions, flows of yard debris were generally consistent except in the winter months (December, January, February) when flows fell off. Quantities of yard debris in Phase II (October-February) averaged over 1,000 cu yd per week and in Phases III and IV (March-September), average quantities increased to 1,400 and 1,700 cu yd per week (in first nine weeks) respectively. High flows were experienced in July and August when backyard burning was prohibited. The current rate is about 6,000 cu yd per month.

12. There were problems with contamination of yard debris during the demonstration project and it was found that the best way to prevent contamination of the compost and hog fuel products was to thoroughly inspect unloading of yard debris.
13. As a result of recovering over 65,000 cu yd of yard debris during the demonstration project (10 months), over 8,000 cu yd of landfill space was saved.

This savings is equivalent to increasing the St. Johns Landfill life over four days. Over \$36,000 in disposal costs would have been spent if the demonstration project had not been conducted.

#### Promotion

1. Promotion/public information efforts significantly increased calls to the Recycling Switchboard.
2. Highest interest (demonstrated by calls to the Switchboard) was generated when posters/brochures/flyers were widely distributed during an intense campaign. Mass media by itself resulted in lower level of interest.

3. According to a questionnaire survey, more participants learned of the program by radio ads than by newspaper ads.
4. The number of calls to the Recycling Switchboard increased just after new television spots were aired.
5. The number of calls to Switchboard increased during spring and fall, and decreased during winter and summer months.
6. Frequent news releases leading to news stories produced an increase in calls and a decrease of calls was experienced during periods when no news releases were issued.

### RECOMMENDATIONS

#### Citizens (generators, transporters, disposers)

All citizens in the region should use available recovery alternatives to recycle yard debris.

1. Citizens who generate yard debris should compost yard debris on their property rather than disposing of the material.
2. Citizens who generate yard debris, and who do not have separate collection alternatives available, should try to keep yard debris separate from garbage and consider either contracting with a hauler to collect separated material or self-hauling the material to a processing center.
3. Citizens who need ground cover or soil additives for their gardens should purchase mulch or compost from the processing centers producing this material from yard debris.
4. Citizens who do not have separate collection of yard debris should encourage their local jurisdictions to provide service.
5. Citizens who do not have separate collection of yard debris should consider conducting small neighborhood projects and contracting with a hauler to collect material and take it to a processing center.

#### Local Jurisdictions (generators, transporters, collection authorities, disposal and fire districts)

All local jurisdictions should identify options for the collection of source separated yard debris and provide for those options if feasible.

1. Local jurisdictions should thoroughly investigate all collection alternatives to determine which would be most effective for their local situation. Local jurisdictions who start collecting yard debris should conduct the service on a trial basis to get information on costs within their system.

2. Local jurisdictions which generate and transport yard debris should keep the yard debris separate from garbage and take it to processing centers.
3. Local jurisdictions which are currently collecting separated yard debris using city crews should consider continuing this service.
4. Local jurisdictions which have collection franchise authority should consider having their hauler collect separated yard debris by sponsoring neighborhood clean-ups, or by conducting on-route or on-call collection projects.
5. Local jurisdictions with disposal authority should consider diverting separated yard debris from solid waste facilities.
6. Local jurisdictions with disposal authority should enforce scavenger dumping of yard debris and open burning regulations.
7. Local jurisdictions without franchises should consider organizing neighborhood clean-ups and/or contracting with private hauler(s) to conduct on-route or on-call collection projects.
8. Local jurisdictions which need ground cover or soil additives for public areas should consider purchasing mulch or compost from the processing centers producing this material from yard debris.
9. Local jurisdictions located far from processing centers should consider establishing temporary sites for receiving yard debris during times of high generation. Stockpiled yard debris could then be processed by mobile processing equipment and transported to processing centers or to markets.
10. Local jurisdictions should support regional and state public awareness efforts by assisting with the distribution of promotion and education materials.

Regional (disposal authority)

Metro should take appropriate measures to keep existing processing operations viable.

1. Metro should divert separated yard debris from their solid waste facilities.
2. Metro should enhance public awareness of composting, yard debris collection projects and the processing centers by conducting a comprehensive promotion program. Metro should consider promoting the use of yard debris garden products.
3. Metro should consider including yard debris as a material to be recovered in residential recycling programs proposed by Metro.

4. Metro should assist local jurisdictions in locating and siting temporary yard debris receiving/processing sites if requested by local jurisdictions.

#### State (disposal authority)

DEQ should take appropriate measures to keep existing processing operations viable.

1. DEQ should take steps to divert separated yard debris to processing facilities.
2. DEQ should enhance public awareness of composting, yard debris collection projects and the processing centers by assisting Metro in its promotion and education efforts. DEQ should consider promoting the use of yard debris garden products.
3. DEQ should periodically inspect processing centers to determine whether they are safe and environmentally sound.
4. DEQ should provide financial incentives (tax credits, etc.) to assist processing centers.

#### Commercial Haulers (transporters)

Commercial haulers should participate in the efforts of citizens and governments to recycle yard debris.

1. Commercial haulers with or without collection franchises should work with local jurisdictions to organize separate collection of yard debris.
2. Commercial haulers who offer drop box service should inform customers that they could save money on the disposal charge if only yard debris or wood waste was disposed.
3. Commercial haulers should determine which regular customers produce contamination-free loads of yard debris and wood waste.
4. Uncontaminated loads of yard debris should be taken to processing centers rather than disposed at landfills.

#### Processors (disposers)

Processors should continue to process and sell yard debris brought to their sites and they should continue to develop and sell the yard debris garden/fuel products.

1. Processors with sites should consider contracting with commercial haulers to receive loads of pure yard debris or wood waste.
2. Processors with sites should work closely with Metro, DEQ and local jurisdictions to inform them of project needs.

3. Processors with sites should ensure that their operations are safe and environmentally sound and are in accordance with local regulations.
4. Before making significant supply commitments, processors who produce compost or mulch products should be certain about the compost process; product consistency (quality); and production rate.
5. Processors with sites should consider joint marketing of products.



PART 1 - DISCUSSION AND ANALYSIS

## METRO SOLID WASTE SYSTEM DESCRIPTION

### INFORMATION

Metro was established as a municipal corporation by the Oregon Legislature and approved by the District area voters in 1970 to solve area-wide problems that transcend the boundaries of individual cities and counties. The District currently exercises authority over solid waste disposal, the Zoo facilities, transportation and other regional planning functions. Metro, as the result of voter approval underwent a major reorganization. Beginning January 1, 1979, Metro was governed by a directly elected board of twelve Councilors, with operations headed by an Executive Officer elected on a district wide basis. This is the first directly elected regional governing body in the United States.

### SOLID WASTE DEPARTMENT GOALS AND OBJECTIVES

Metro operates pursuant to Chapter 268 of the Oregon Revised Statutes. The Solid Waste Department is funded through user fee charges imposed at all area landfills. Capital improvements are funded in part through State of Oregon grant/loan monies.

The Solid Waste Department has management responsibility for all local aspects of solid waste disposal. Metro does not have any authority in the area of solid waste collection. Metro's basic solid waste authority is spelled out in ORS 268.317, which grants the power to:

- Own, operate, or regulate landfills, transfer stations, and resource recovery facilities;
- Enter into short or long-term contracts;
- Require generators of solid waste to make use of Metro facilities;
- Require collectors and disposers of solid waste to make use of Metro facilities;
- Grant contracts, franchises, or licenses and collect fees therefore;
- Regulate the services provided by contractees, franchisees, and licensees;
- Receive, accept, process, recycle, reuse, and transport solid wastes.

The main thrust of the Metro Solid Waste Department is to implement a management program that systematically and economically provides for the recycling and disposal of all solid wastes in the Metro area. The Plan calls for a system of landfills, transfer stations and an enhancement of waste reduction as a means of providing for

the disposal needs of our area. A public education program provides useful information that can help reduce the increasing stresses on our disposal system.

The Metro Solid Waste staff assumes technical responsibility for the disposal needs of approximately 900,000 people living in the Metro area. The local cities and counties in the Metro area have responsibility for all matters relating to the collection of waste materials. All disposers, whether they are collectors, private businesses, or individual homeowners, must make use of the Metro authorized disposal sites.

#### LOCAL SOLID WASTE CONDITIONS

All of the residential waste collected in the area is collected by private haulers hired directly by the homeowners. Areas in Clackamas and Washington Counties are covered by City or County franchise ordinances, which designate collector responsibility for various areas. All incorporated areas in Multnomah County and the city of Portland are open to free market competition. Collection service is not mandatory in any area of the Metro region. During the fiscal year 1981-1982, 336,000 usages of the landfills were made by private citizens hauling their own wastes.

Residential wastes account for approximately 415,000 tons each year. Commercial and industrial wastes are also currently delivered for disposal either by private haulers hired directly by these businesses or by the business itself. The City and County franchised areas of Clackamas and Washington Counties apply to commercial as well as residential accounts. Approximately 340,000 tons of waste are disposed annually from commercial and industrial sources. This figure does not include the approximately 50-75,000 tons per year of demolition materials.

Based on measured weights at the major area landfills, Metro has determined that approximately 755,000 tons of materials are currently landfilled annually. No wastes are incinerated in the Metro area with the exception of some individual industries and institutions.

Currently, seven landfills operate in the proximity of the Portland metropolitan area. The two major sites are St. Johns Landfill in the north and Rossman's Landfill in the south. These two landfills fulfill over two-thirds of the total waste disposal needs for the area. Rossman's Landfill has capacity to remain open until spring 1983. St. Johns Landfill will reach capacity and close by 1987. The remaining sites will be approaching capacity by 1983 or accept only limited types of waste. A breakdown of flow is in the Appendix.

The cost of residential waste collection and disposal is paid by each customer to the private collector. The collector, in turn, pays the disposal costs at the landfill. Individuals who prefer not to subscribe to collection service can haul their own wastes and pay the disposal cost at the landfill.

On January 3, 1983, Metro raised the disposal rates charged at disposal facilities in the metropolitan area. The rates for Metro and other facilities can be found in the Appendix.

#### METRO'S WASTE REDUCTION PLAN

In January 1981, a Waste Reduction Plan was adopted by the Metro Council. The plan outlines short and long-term waste reduction goals. The short-term goal specifies that waste reduction will occur at a rate of two percent per year resulting in doubling of current levels of recycling by the end of 1985. This includes a short-term goal of recovering 40 percent of the yard debris generated in the region. The long-term waste reduction goal calls for the recovery of 100 percent of all yard debris generated.

## ANALYSIS OF ALTERNATIVES

### PROCESSING ALTERNATIVES

The processing alternatives will be analyzed according to the following criteria:

- operating performance;
- ability to deal with contamination;
- market/products;
- economics;
- potential for on-going program; and
- potential for wider application.

Several processing alternatives were demonstrated in the four phases of the project:

- Shredding Systems, shredding to "hog" fuel
- Waste By-Products, grinding to hog fuel;
- Waste By-Products (pre-grinding and screening to hog fuel or compost)
- McFarlane's Bark (hammermilling, screening and composting to compost products)
- Grimm's Fuel (hammermilling, screening and composting to mulch and compost products (proposed))

Detailed descriptions of the alternatives may be found in Part 2 - Phase Evaluation in this report.

Note: To assist the reader in understanding the differences between the alternatives, a graphic summary for each alternative has been prepared. This summary illustrates how each compares on a relative basis to the other. The circular graphics (Figures 2 and 3) depict a score of 0 (unacceptable) at the center and a score of 10 (excellent) at the circumference of the circle. This technique is intended to provide a method to illustrate the strengths and weaknesses of each alternative examined. It is not intended to provide a numerical score which may be compared. Figures 2 and 3 were completed by Metro Solid Waste technical staff.

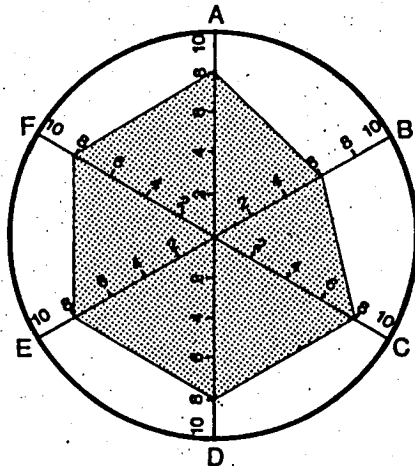
### Shredding Systems

The Phase I Evaluation Report, containing an analysis of the one-week clean-up in May 1981, can be found in Part 2 of this report. When compared to the other phases, this alternative required the most lead time and the greatest effort to conduct. The yard debris collected the same week a year later (1982) at both processing locations was 2,556 cu yd compared to 1,594 collected in May 16-24, 1981. The greatest one-week total of yard debris at St. Johns in Phases II, III and IV occurred in the same week as the first yard debris clean-up. It is not known whether the people who used St. Johns during the week ending May 23 heard about or

To assist the reader in understanding the differences between the alternatives, a graphic summary for each alternative has been prepared. This summary illustrates how each compares on a relative basis to the other. The circular graphic depicts a score of 0 (unacceptable) at the center and a score of 10 (excellent) at the circumference of the circle. This technique is intended to provide a method to illustrate the strengths and weaknesses of each alternative examined. It is not intended to provide a numerical score which may be compared.

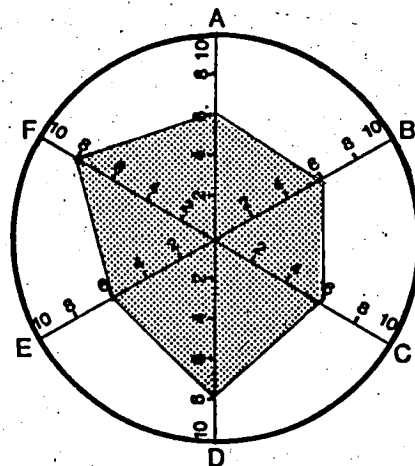
#### WASTE BY-PRODUCTS

##### Mobile Primary Processing



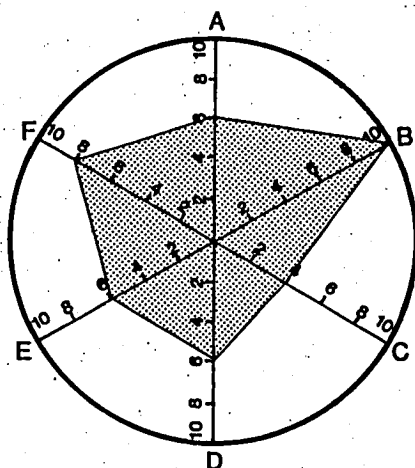
#### SHREDDING SYSTEMS

##### Mobile Primary Processing



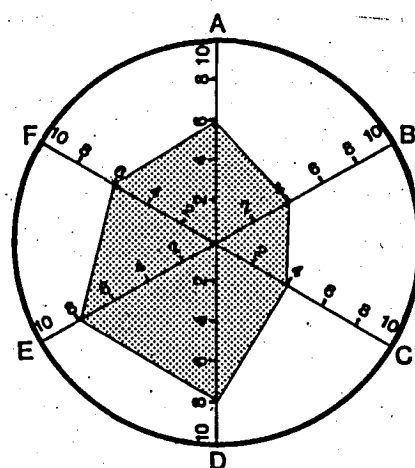
#### WASTE BY-PRODUCTS

##### Mobile Pre-processing



#### McFARLANE'S BARK

##### Stationary Processing



#### CRITERIA

- A. Operating performance
- B. Ability to deal with contamination
- C. Market/product success
- D. Economics
- E. Potential for on-going program
- F. Potential for wider application

#### SCORING

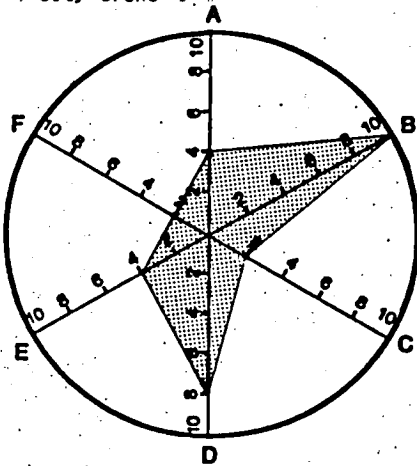
- 10 Excellent
- 8 Very good
- 6 Good
- 4 Fair
- 2 Poor
- 0 Unacceptable



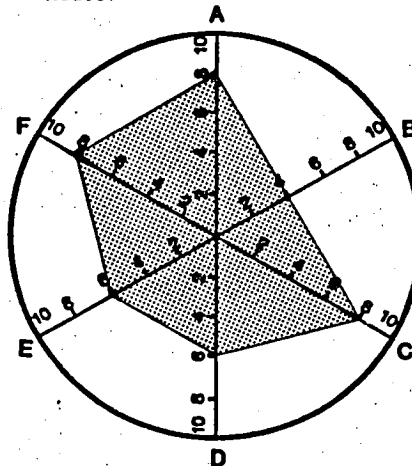
## PROCESSING ALTERNATIVES

FIG. 2

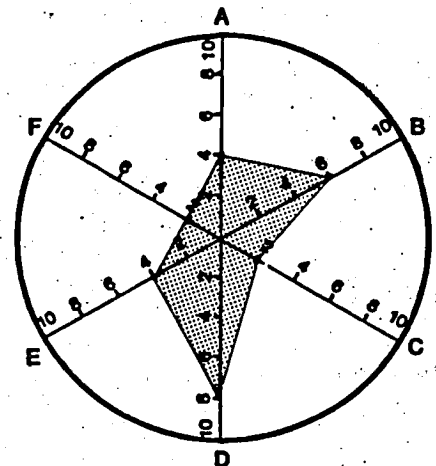
CASE STUDY 1: OREGON CITY  
On route curbside collection by  
city crews



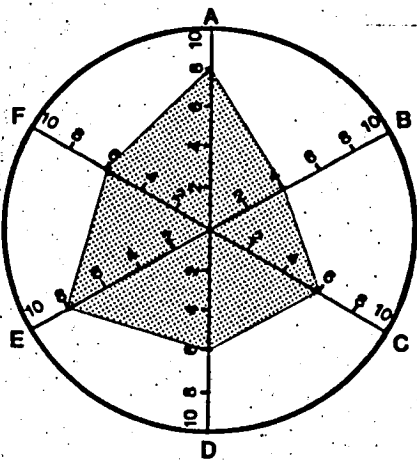
CASE STUDY 2: LAKE OSWEGO  
On call pick-up by franchised  
hauler



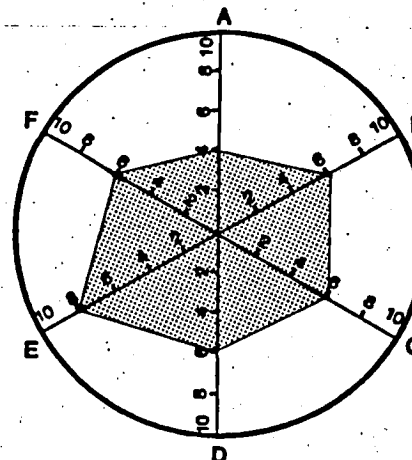
CASE STUDY 3: WEST LINN  
On call pick-up by city crews



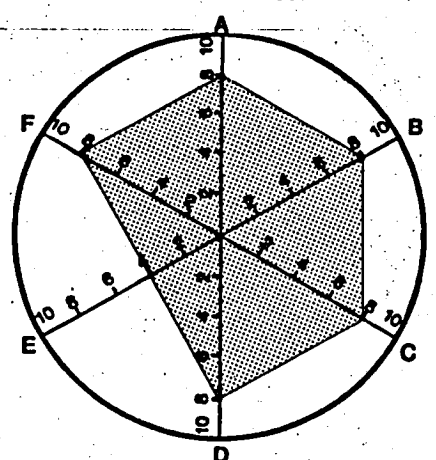
CASE STUDY 6: CITY OF PORTLAND  
Neighborhood clean-ups



CASE STUDY 7: BEAVERTON  
Clean-up by city crews and  
franchised haulers



CASE STUDY 8:  
On route curbside collection by  
non-franchised hauler



#### CRITERIA

- A. Ease of implementation
- B. Participation
- C. Economics
- D. Public acceptance
- E. Potential for on-going program
- F. Potential for wider application

#### SCORING

- 10 Excellent
- 8. Very good
- 6 Good
- 4 Fair
- 2 Poor
- 0 unacceptable



## COLLECTION ALTERNATIVES

FIG. 3

participated in the first clean-up week. The participation in the one-week clean-up was better than most of the other weekly totals in Phase II. This may have been due to the wider distribution of the brochure and flyer in Phase I.

The locations of the receiving sites in Phase I were St. Johns Landfill, Rossman's Landfill and the Obrist Pit in Troutdale. Rossman's and St. Johns were acceptable in terms of safety, convenience and storage capacity. The site in Troutdale had problems with access and mud. The site in Troutdale would be suitable as a future storage location if:

- the yard debris stockpile area was closer to the entrance on Troutdale Road;
- major improvements were made to the roads and unloading and stockpile areas; and
- full-time personnel and suitable facilities were on-site.

Weyerhaeuser Corp., the market for the hog fuel in Phase I, is located in Longview, Washington about 60 miles from the Portland area. Weyerhaeuser was selected because it uses conveyance systems which can accommodate an irregular sized product.

The shear type horizontal shredder (Saturn Model 72-46, 300 HP) has a good history of performance. This unit could process 120-200 cu yd of loose yard debris per hour (without screening) and produce 30-40 cu yd per hour of product (5-6 tons per hour). According to Shredding Systems, to produce a uniform fuel product, Rader disc discharge screens (4"x 4" openings) could be used under the shredder. The processing rate would be reduced 30-50 percent to 3-4 tons of product per hour. The down time of the equipment is minimal approximately 10 percent.

The hydraulic grappling hook attached to the "low-boy" trailer loads yard debris into the feed hopper of the shredder. The shredded material falls onto a belt conveyor which can be elevated to load trucks. Contamination is not a problem for the equipment since the shredder is designed to process metal scrap, plastics, tires, and other materials. When a large unprocessable object enters the machine, the low torque rotors reverse to prevent damage to the equipment. A magnetic separator could be added to the unit to reduce contamination of the hog fuel.

The firm expressed interest in the project and said they would consider processing and marketing yard debris if there were sufficient supplies. With a screening attachment, they could produce hog fuel sized material which could be marketed locally. With a flow rate of yard debris similar to that received at McFarlane's, they could make a profit. The following is a generalized cost scenario for an operation assuming no cost for the storage site:



Costs:

Processing Costs (6,000 cu yd)	\$3,250
Spotter (90 days)	4,680
Total	<u>\$7,930</u>

Revenues:

Gate Fees (\$1.00 per cu yd)	\$6,000
Fuel Product	2,000
Total	<u>\$8,000</u>

Although the initial costs of the system demonstrated were high (Tables 2 and 3), it now appears that this processing alternative is viable as an on-call processing service to local storage areas and/or landfills. In addition, shredding equipment is more versatile than other processes demonstrated because it could process yard debris during the months it is generated and process other materials the rest of the year.

Waste By-Products

Two processing modes were demonstrated by Waste By-Products. A Medallion 910 tub grinder was used as a primary grinder in all phases. In Phases III and IV, a stump grinder was used in conjunction with screening and magnetic separation to pre-process contaminated yard waste prior to primary grinding.

St. Johns Landfill was used for receiving and processing yard debris. The following is a list of advantages and disadvantages of using St. Johns Landfill as the location for processing:

Advantages:

- No need to get land use approval or promote and develop new site.
- Yard debris already being brought to facility could be easily diverted.
- Existing gatehouse people could receive fees and direct traffic to unloading area.
- Suitable area for storage, unloading and processing.
- Unloading area had rock surface.
- Convenient and safe access for public vehicles.
- Landfill equipment on-site could be used for stockpiling.
- Same spotters from public transfer area could be used for yard debris project.
- Area was fenced and secured.

Disadvantages:

- Citizens tend to bring yard waste mixed with garbage.
- Site not paved--mud or rocks mixed with yard debris.
- Site not centrally located.
- Site needed some preparation.

TABLE 2

UNIT COSTS OF PROCESSING ALTERNATIVES

	Quantity of Yard Debris Recovered (cu yd)	Site Preparation Costs (\$/cu yd)	Stockpiling & Facility Ops Costs (\$/cu yd)	Processing Costs (\$/cu yd)	Total Costs (\$/cu yd)	Market Revenue (\$/cu yd)	Disposal Fee Revenue (\$/cu yd)	Total Revenue (\$/cu yd)	Profit- (Loss) (\$/cu yd)
Waste By-Products (Oct 23-Feb 28, 1982) 19 weeks (Phase II)	8,794	0.47	1.85	1.13	3.45	0.34 (est)	0.90	1.24	(2.21)
McFarlane's Bark, Inc. (Oct 23-Feb 28, 1982) 19 weeks (Phase II)	11,949	0.18	1.24	0.86	2.28	-0-	0.75	0.75	(1.53)
6-1 Waste By-Products (March 1-Aug 31, 1982) (Phases III and IV)	20,015	0.47	0.82	1.47	2.76	-0-	0.94	0.94	(1.82)
McFarlane's Bark, Inc. (March 1-June 30, 1982) 17 weeks (Phase III)	10,941	0.18	1.06	0.76	2.00	-0-	0.87	0.87	(1.13)
McFarlane's Bark, Inc. (July 1-Sept 30, 1982) 13 weeks (Phase IV)	11,491	0.18	0.76	0.54	1.48	-0-	0.79	0.79	(0.69)

TABLE 3

TOTAL COSTS OF PROCESSING ALTERNATIVES

	Quantity Yard Debris Recovered (cu yd)	Participation	Total Cost	Revenue from Fees	Revenue from Markets	Net Cost
Shredding Systems Woody Waste Only (May 16-24, 1981)	1,613	610	\$38,705 <sup>1</sup>	\$ 1,604	\$ 475	\$36,626
Waste By-Products (Oct 23-Feb 28, 1982) 19 weeks (Phase II)	8,794	3,008	45,090 <sup>2</sup>	7,953	3,000 (est)	34,137
McFarlane's Bark, Inc. (Oct 23-Feb 28, 1982) 19 weeks (Phase II)	11,949	2,649	29,123	8,901	None	20,223
Waste By-Products (March 1-June 30, 1982) 17 weeks (Phase III)	13,200	5,817	35,490	12,553	None	22,937
McFarlane's Bark, Inc. (March 1-June 30, 1982) 17 weeks (Phase III)	10,941	3,812	19,855	9,505	None	10,350
Waste By-Products (July 1-Aug 31, 1982) 9 weeks (Phase IV)	6,815	3,061	10,232	6,251	None	3,981
McFarlane's Bark, Inc. (July 1-Sept. 30, 1982) 13 weeks (Phase IV)	11,491	3,547	14,891	9,128	None	5,763

<sup>1</sup>Includes one time \$20,000 set up cost<sup>2</sup>About \$21,000 of this went to Genstar for stockpiling and spotting

The Medallion 910 grinder is equipped with a rotary hopper and a floor mounted stationary hammermill. During grinding, the hopper sides rotate, moving the material across the floor and over the hammermill. Material is sheared off by the hammers and drawn into the grinding chamber where it is forced through sizing screens and onto the discharge conveyor belt. The unit could process enough material to fill a 95 cu yd chip trailer in about one hour. The sizing screens come in two sections and reduces the material to the specified 2-inch minus fuel product specification. The down-time for maintenance is approximately 20-30 percent depending on contamination. Because of the small rotor plates and short shafted hammers the unit has a problem with metal contamination. When contamination occurred in Phases III and IV, the 60 hammers and the sizing screens had to be replaced. There was also damage to the rotor.

The market, Willamette Industries, purchased the hog fuel from Waste By-Products in Phase II (except for 4,000 cu yd contaminated with sludge). Willamette supplied the 95 cu yd fuel trailers to haul 75 miles (one-way) from St. Johns Landfill to Albany, Oregon. The fuel value (\$15-28 per bone dry unit) of that material was not as good as typical bark chip hog fuel. Since yard debris had 50 percent moisture, it took two units to make a bone dry unit (unit = 7.5 cu yd). Because of the wet conditions during the winter months, the material did not have a good fuel value.

The cost for preparing the site, processing and stockpiling is listed in Tables 2, 3 and 4. As can be seen, stockpiling and facility operations cost more than processing. The net loss in Phase II was approximately \$2.21 per loose cu yd. This cost is significantly more than the commercial disposal rate at St. Johns Landfill. (\$2.21 per cu yd @ 250 lbs per cu yd is \$17.68 per ton or @ 150 lbs per cu yd is \$29.47 per ton.) (\$3.00 per cu yd for public disposal.)

This processing alternative would have potential for an ongoing program, if:

- increase quantity of yard debris;
- increase fuel value of product by processing more wood waste from commercial sources;
- contamination was reduced (to increase fuel value and decrease maintenance);
- reduce costs for stockpiling and facility operations performed by Genstar;
- charge greater disposal fee at gatehouse (e.g., \$2.21 per cu yd); and/or
- a combination of the above (sell all product as hog fuel at \$28 per bone dry unit and increase disposal fee by only \$1.74 per cu yd).

TABLE 4  
WASTE BY-PRODUCTS COSTS

	<u>Phase II</u>		<u>Phase III</u>		<u>Phase IV</u>		<u>Average</u>	
	<u>Equip.</u>	<u>Labor</u>	<u>Equip.</u>	<u>Labor</u>	<u>Equip.</u>	<u>Labor</u>	<u>Equip.</u>	<u>Labor</u>
Processing	\$0.88	\$0.25	\$1.68	\$0.03	\$1.00	\$0	\$1.28	\$0.10
Site Ops	0.60	1.25	0.53	0.45	0.41	0.12	0.52	0.62
Total	\$1.48	\$1.50	\$2.21	\$0.48	\$1.41	\$0.12	\$1.80	\$0.72
Total.	<u>\$2.98</u>		<u>\$2.69</u>		<u>\$1.53</u>		<u>\$2.52/yd<sup>3</sup></u>	

Note Process labor cost eliminated  
Site Ops labor cut 1.13

All Costs in \$/loose yd<sup>3</sup>

Site Ops performed by Genstar

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## Handling and Processing Contaminated Material---

The problem of contamination was present through all phases of the yard debris project. Regardless of the levels of inspection, materials which degrade the product entered the system. There were two causes of contamination in the project:

- Visual inspection was not effective because material was in bags and/or spotter was not present or did not constantly watch unloading.
- If stockpile area was dirt (sludge) or rock this material got mixed with yard debris when stockpiles were worked.

To deal with these causes of contamination several techniques to handle and process yard debris were demonstrated at St. Johns Landfill during Phases III and IV:

- Visual inspection with hand-held metal detection.
- Disc screen and magnetic separation equipment.
- Pre-grinding with specialized equipment.
- Effectively using spotter's time.

Since the primary market was hog fuel, the objective of this demonstration was to salvage as much of the material for hog fuel as possible.

In Phases III and IV, the stump grinder was used in conjunction with screening and magnetic separation to pre-process contaminated yard debris prior to primary grinding in the Medallion. The stump grinder attachment on the forks of a front-end rubber tire loader (bucket removed) was effective in reducing the volume of stockpiled contaminated yard debris. A small crawler dozer with a rake-like blade was also needed for the pre-grinding operation. The stump grinder could process at least 100 cu yd (stockpiled) per hour. The pre-ground yard debris was then fed into the pre-screening process where material was screened through 1/2-inch and five-inch screens. A magnetic separator at the end of the conveyor removed metal. The processing rate of the screening varied with the condition of the pre-ground yard debris (no actual operating data is available).

Three products were to be developed--a fine organic material (1/2-inch minus), an acceptable hog fuel product, and course material (greater than 5-inch). The screens were found to be inadequate to handle the pre-ground material because the material was too large and lanky. As a result, screens were damaged and the materials did not separate well. In addition, the magnetic separator was not effective in removing metal contamination when "globs" of brush were present. It appears that a longer screen residence time (i.e., long screen design or trommel design) would accomplish material separation.

Approximately 80 percent of the pre-ground material was to be processed in the Medallion and sold as hog fuel product. However,

since the material was allowed to stockpile several months prior to pre-grinding and screening, almost all of the material lost its hog fuel value and was marketed as a compost-like soil additive. At the time of publication, none of the processed material (2,000 to 2,500 cu yd) has been sold, but it was anticipated that in the spring months the material will be dried, sold and removed from the St. Johns Landfill. It is thought that the processed material could be sold as a garden soil amendment, top dressing or potting mix for about \$8.00 per cu yd (\$16,000-\$20,000 total possible revenue).

It was learned that the best way to produce a noncontaminated product was to have a spotter (with an interest in keeping out contamination) thoroughly inspect the loads as they were unloaded. Stockpiling with a claw attachment on a wheeled loader and grinding in the Medallion appeared to be the most effective way of handling and processing the yard debris. To remove contamination, it was not effective to:

- pregrind and screen (using small screens)
- use hand-held metal detection
- reduce the amount of inspection (spotting) during unloading.

More information on the problems with contamination can be found in Part 2, Phases III and IV of this report.

#### Costs---

Tables 2, 3 and 4 contain costs for Phases III and IV processing, site preparation, stockpiling and facilities operation. The cost of processing increased over Phase II because of the pre-grinding and screening, but this increase was only \$.34 per cu yd. The greatest difference in cost between phases was due to the removal of the spotter. It cost \$.69 per cu yd less to remove the spotter and pre-process the material in the last two phases than it did to provide the spotter and grind with the Medallion. Equipment cost for site operations was reduced 20 percent from Phase II to Phase IV because the operator may have become more efficient in stockpiling.

Assuming similar costs, this process could be successful in the future if all the material produced were either marketed as compost and/or hog fuel. Assuming all 20,015 cu yd were composted and sold at \$11.20 per cu yd (price currently charged by McFarlane's Bark), the net revenue of \$11,208 would not cover the operating cost. However, if the disposal fee was increased \$1.26 per cu yd and the compost product was sold, the costs would equal revenues. If all the material were processed and sold as hog fuel (\$6,671), the disposal fee would have to be increased \$1.50 per cu yd for the costs to equal revenues.

#### Current Status---

Waste By-Products has been officially receiving yard debris at their N. Albina site since September 1, 1982. Initially they charged the



same rate as at St. Johns Landfill but had to increase the rate primarily because of low flow (see Rate Schedule in Appendix). Although stockpiling space on-site is limited, they could handle process and remove approximately 15,000 cu yd per month. The processing capacity is roughly 100 cu yd per hour including 20-30 percent down time for maintenance (based on one spotter, one equipment operator and the Medallion 910 Grinder). The existing unloading areas can accommodate five to six vehicles simultaneously. If necessary the site could be redesigned and expanded to handle twice as many vehicles. According to Waste By-Products, there is not enough yard debris to sustain the operation, so they are depending on commercial drop boxes with wood-type waste to supplement the yard debris (see Figure 4). The commercial wood waste loads contain various levels of contamination--averaging about five percent. For the operation to be continued, 6,000 cu yd per month of yard debris and/or other wood waste is required. Waste By-Products would consider expanding their operation to an additional site if at least 12,000 cu yd per month of wood and yard debris material would be delivered to both sites.

Waste By-Products is investigating trommel screening after grinding to improve quality of hog fuel by removing grit and dirt. The fine material would then be composted in windrows and marketed as mulch or compost. Recently, however, they have set up the screening unit previously used at St. Johns Landfill in Phases III and IV. The unit removes fine material from the hog fuel. They are experimenting with composting the fine material in windrows. In addition, the hog fuel sized product has been recently marketed for use in horse stables and paddocks.

#### McFarlane's Bark

McFarlane's Bark, Inc. received a total of 34,381 cu yd of yard debris from 10,008 participants from October 1981 to September 1982. Their operation was to include hammermilling to reduce the volume of yard debris prior to composting. Due to problems with the diesel generation unit and problems with material bridging in the infeed hopper of the hammermill, only a small amount of yard debris was processed. Instead of using the hammermill to reduce the volume of yard debris, a crawler dozer was used to crush and stockpile the material into large compost piles. After composting, the material was screened. Larger pieces of wood were put back in the compost pile. When compared to other primary processing alternatives, McFarlane's process was the least costly. However, since the hammermill was not used, "processing" costs were primarily stockpiling costs. Cost for stockpiling, facility operation and processing (depreciation of equipment), decreased over the three phases. Labor costs (Table 5) were reduced almost 40 percent between Phase II and Phase IV.

Contamination did not appear to be as much of a problem with McFarlane's as it was with Waste By-Products. This could have been because during the demonstration project, a spotter was used.



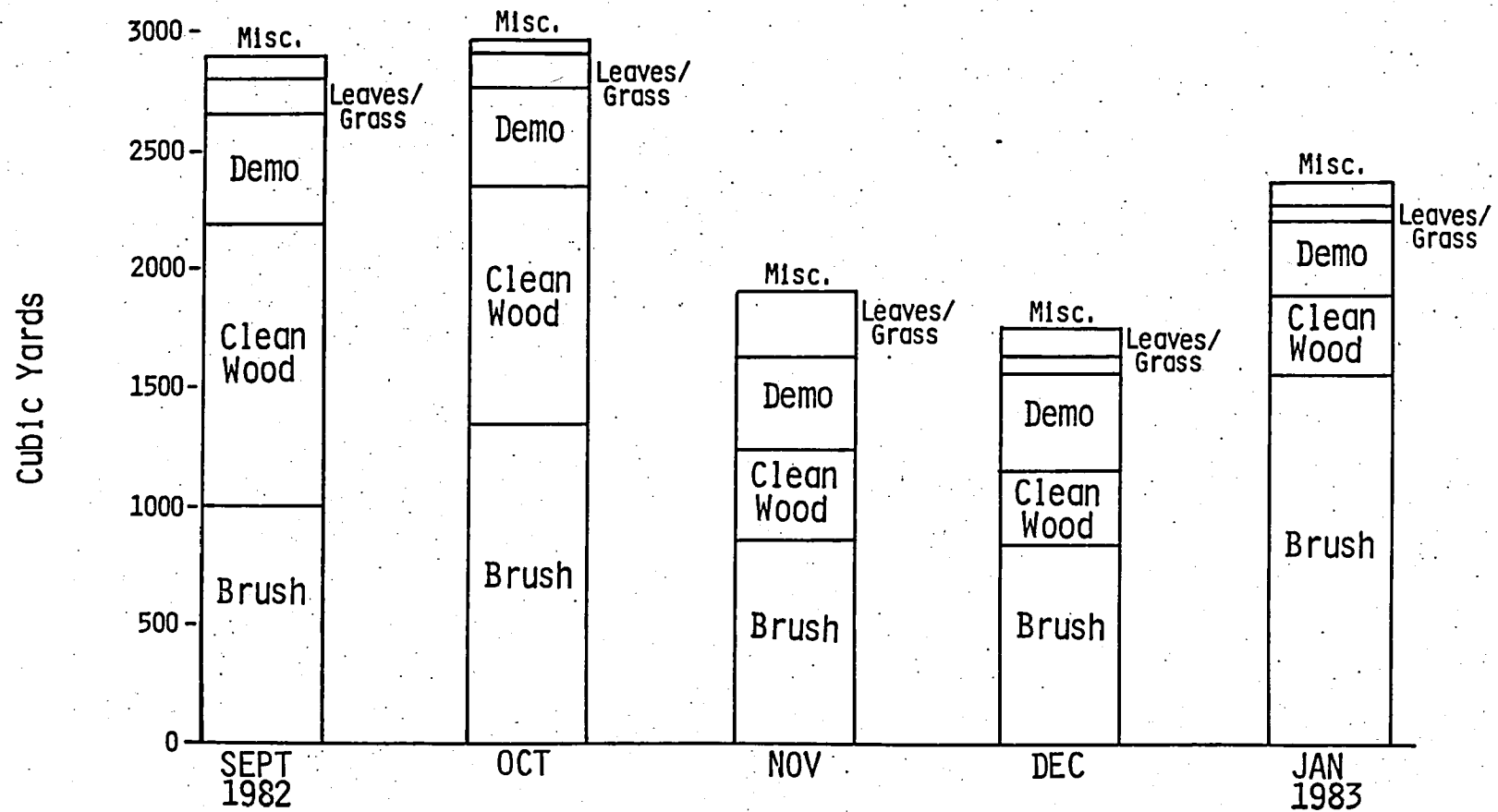


TABLE 5

YARD DEBRIS - PROCESSING  
McFarlane's

<u>Cost Category</u>	<u>Phase II \$/yd<sup>3</sup></u>	<u>Phase III \$/yd<sup>3</sup></u>	<u>Phase IV \$/yd<sup>3</sup></u>
*Labor	\$1.06	\$0.93	\$0.66
Maintenance	0.20	0.17	0.12
Property Rent	0.13	0.11	0.08
Insurance	0.05	0.02	0.02
Diesel	0.06	0.06	0.04
*Depreciation	0.60	0.53	0.38
Site Preparation	<u>0.18</u>	<u>0.18</u>	<u>0.18</u>
Total (Gross)	\$2.28	\$2.00	\$1.48
Income (Dump Fees)	<u>0.75</u>	<u>0.87</u>	<u>0.79</u>
Net Loss	(\$1.53)	(\$1.13)	(\$0.69)

\* Key to total cost differences.

All costs in \$/yd<sup>3</sup> loose

Yard received:

Phase II	11,949
Phase III	10,941
Phase IV	11,491

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Another reason is that many of the participants were commercial landscapers who knew what material could be dumped. In addition, the stockpiled material was not processed using the hammermill and it appeared that little damage was done to the screening systems.

There is some risk in assuming McFarlane's Bark as a processing alternative because of the following:

- the site size is limited and it is limited to the quantity of yard debris it can receive;
- the site access needs improvement so customers are not deterred by the mud and puddles;
- very little product has been sold and it is unknown whether there is sufficient demand for the product; and
- as a private company, it can close its doors anytime for any reason.

#### Costs---

A 20:1 reduction of yard debris to compost material was experienced in all phases. Based on 34,381 cu yd of yard debris received, there would be 1,719 cu yd of product to sell. The demand for the compost product is seasonal--with the primary demand in the spring and early summer months. Based on the year's data, for McFarlane's operation to recover the cost of the demonstration, he would have had to sell all 1,719 cu yd of product at \$11.20 per cu yd and increase his disposal fee by \$.50 per cu yd. Based on Phase IV flows, costs and revenues, if McFarlane was to conduct a similar program in the future he could:

- increase disposal fee by \$.69 per cu yd and give the material away for free, or;
- sell the compost product for \$13.79 per cu yd.

#### Current Status---

McFarlane's has made a few changes since Phases III and IV. They have converted the hammermill to run on electric because the diesel generator did not supply enough power. Consequently, the hammermill is restricted to the Clackamas site or another site with suitable power. Yard debris is now being run through the main bark dust plant where material is screened down from a 1" minus to a dust size. The dark compost product is being sold for \$14 for a 1-1/4 cu yd scoop. Although very little product has been sold, interest is expected to increase during the spring landscaping season.

The site has sufficient unloading area to accommodate 5-6 private vehicles unloading simultaneously. Since the compost undergoes a 20:1 volume reduction, sufficient equipment and room is on-site to compost over 8,000 cu yd per month. There have been some problems with vehicles getting stuck or people deciding not to unload their yard waste when they see the wet and soft looking access road. Although there is already a gravel road to the stockpile area, McFarlane's is trying to generate enough money (\$10,000) from the

operation to pave the access road. McFarlane's has also experienced some contamination problems recently and they may have to hire a spotter to inspect all loads. They feel the inspection might slow down the unloading of vehicles and increase costs.

### Grimm's Fuel

The discussion of Grimm's operation is discussed in Part 1 of the report because information was obtained after the publication deadline of the Phase Evaluation.

Grimm's Fuel Co. started receiving yard debris at their Sherwood location in mid-August 1982. They have received over 1,000 cu yd of yard debris through January 1983. They have been stockpiling the material in windrows, running over the piles with a D-8 CAT Crawler dozer, and allowing the material to compost. Current fees are \$2.00 per pickup load and \$1.00 for each additional cu yd. They are proposing to produce three products--mulch, compost and hog fuel. Hog fuel will be produced if they receive enough clean wood demolition. Figures 5, 6 and 7 contain flow diagrams and schematics of the process and layout of the site. (Note: Figure 7, schematic diagram of the equipment, does not show the hammermill outfeed conveyor which moves milled material back to the drag chain conveyor above the screens.) Mulch, the primary product would replace barkdust (they sold 6000-7,000 units last year at \$70-90 per unit) as a ground cover and soil conditioner. Compost would replace rotten sawdust (they sold 1,100 units last year) and would sell as a fertilizer or soil additive. They have purchased and installed a Jefferies hammermill, several screens and conveyance systems to handle yard debris. The hammermill would produce a 4" minus material. The site is located on twenty acres and sufficient room exists for the expanded yard debris operation. The existing unloading area can accommodate 20 public vehicles unloading simultaneously. The proposed equipment could process 22,000 units (165,000 cu yd) per year of brush and 55,000 units (412,000 cu yd) of wood demolition waste. To cover capital, operating and maintenance costs, they must process at least 5,350 cu yd per month of yard debris.

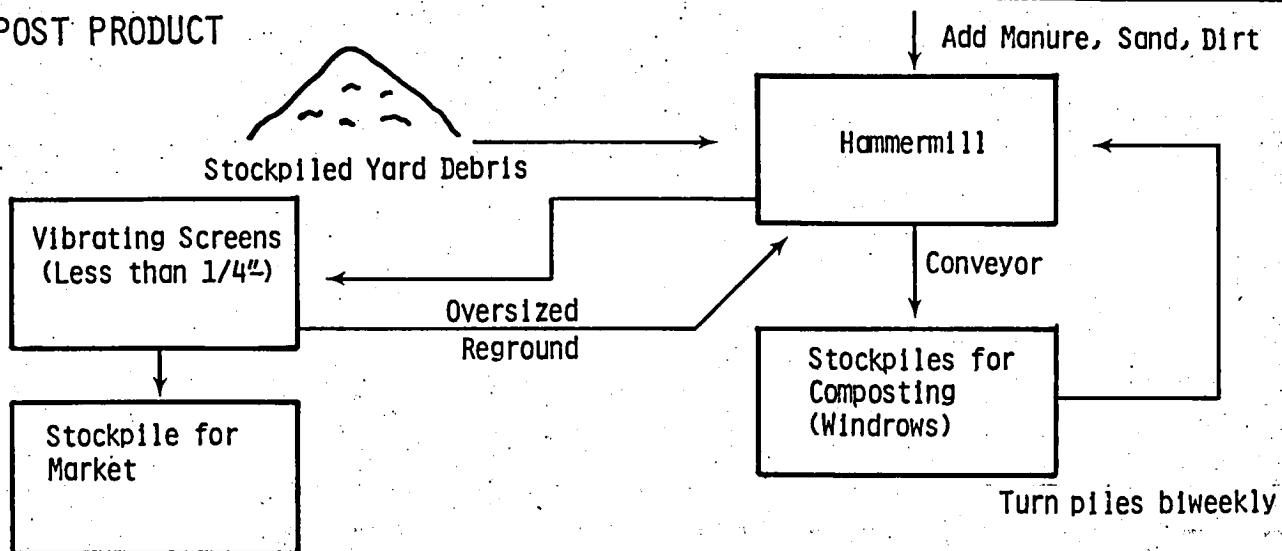
Grimm's Fuel would like to have yard debris currently going to Hillsboro, Newberg, and Grabhorn Landfills diverted to the Sherwood operation.

### Summary of Existing Processing Centers

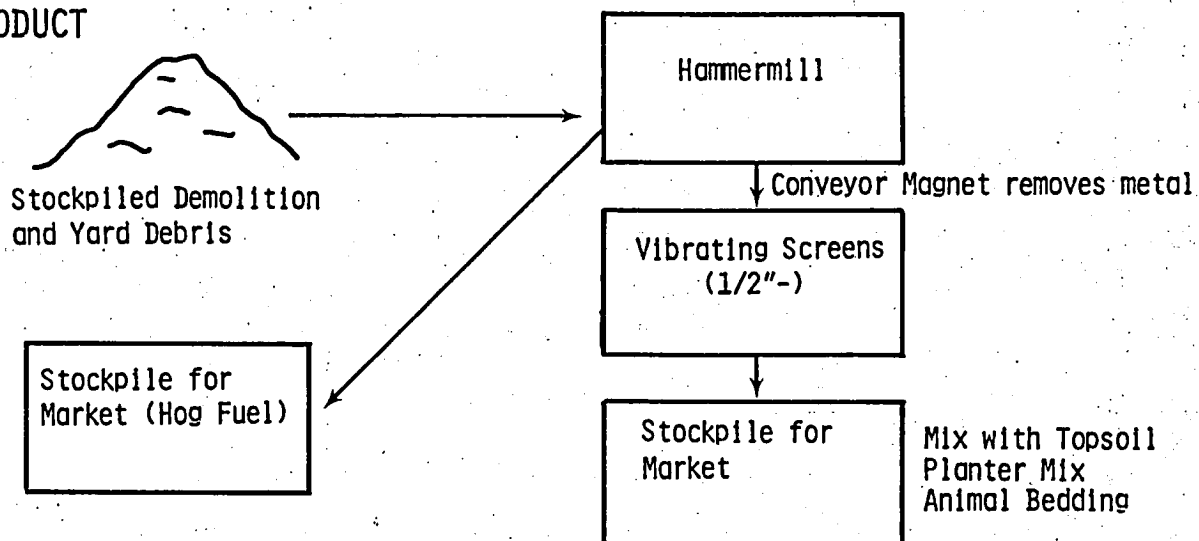
The three processors with sites have stated that they need more material to make their ventures successful.

Grimm's and McFarlane's expressed a desire to have commercial loads of clean lumber, planer ends and sawdust brought to their sites. Waste By-Products says they need commercial wood waste to sustain business because not enough yard debris is entering the North Portland site. All three processors with sites have expressed a desire to continue operating although no formal agreements for doing

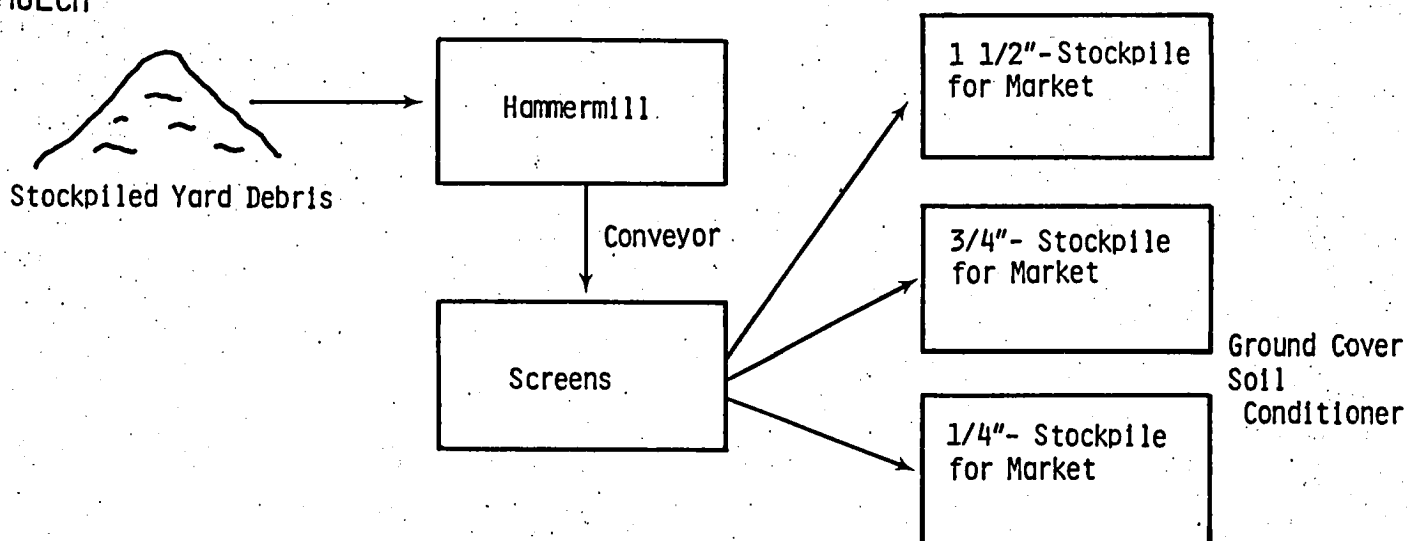
## COMPOST PRODUCT



## HOG FUEL PRODUCT



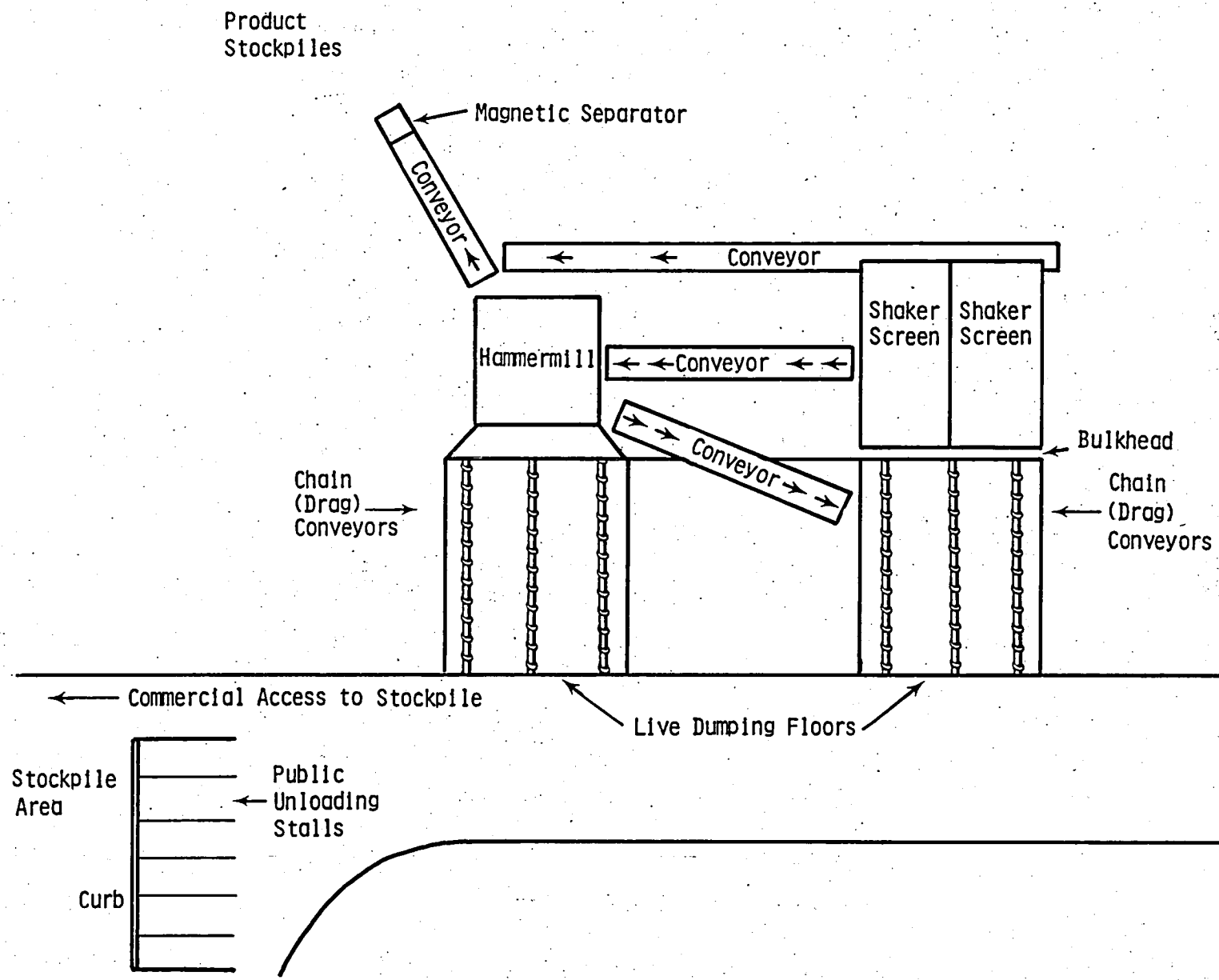
## MULCH

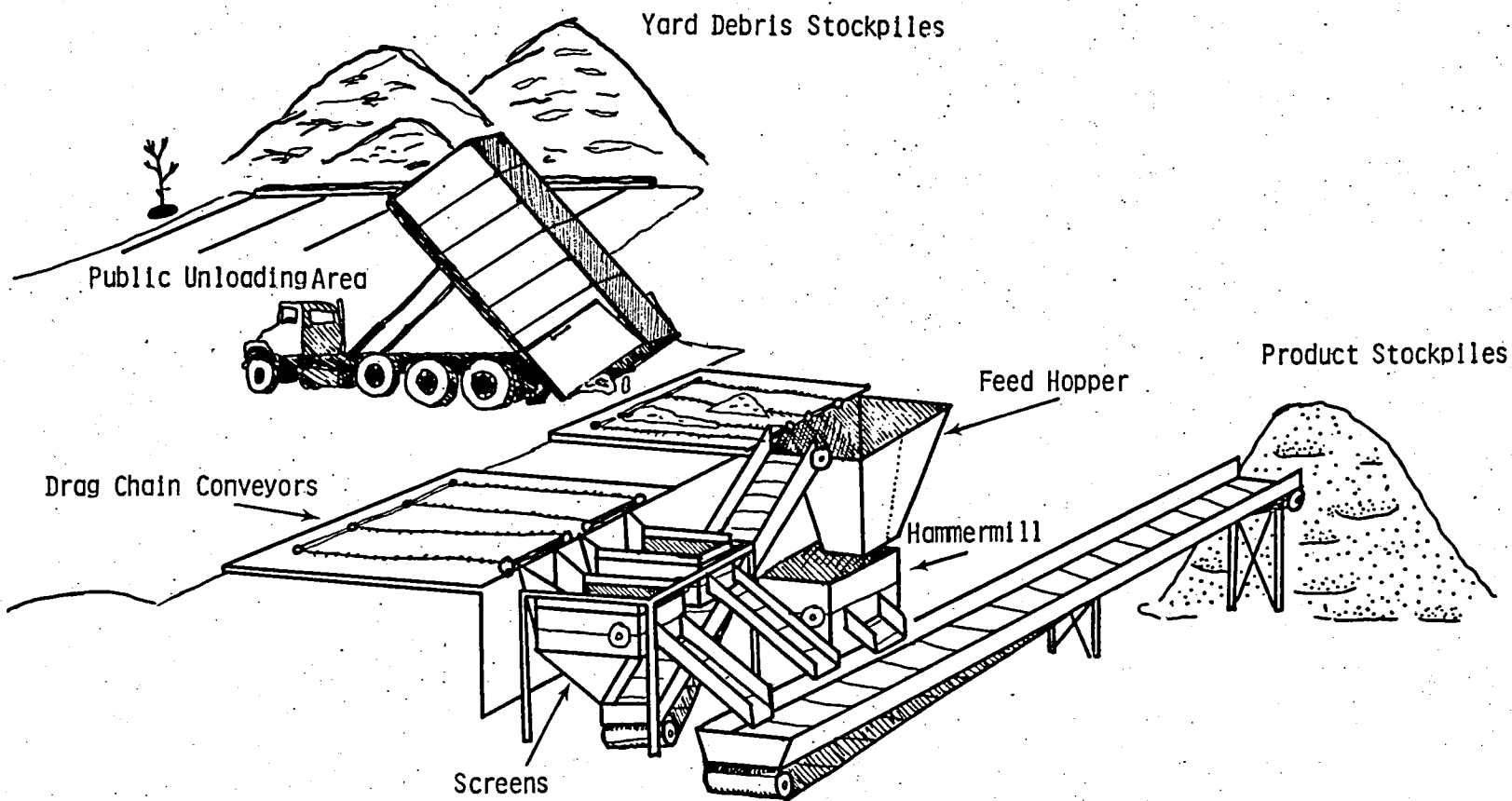


**GRIMM'S FUEL CO.**  
**SCHEMATICS OF PROPOSED PROCESSES**

**FIG. 5**

1-21





1-22



**SCHEMATIC DIAGRAM OF GRIMM'S FUEL OPERATION**

**FIG. 7**

so have been made. Waste By-Products, McFarlanes's Bark and Grimm's Fuel have depended on other operations to subsidize the yard debris operations. McFarlane's and Grimm's markets are active mostly in the spring and summer months while Waste By-Product's market demand for material is relatively constant during the year. If Waste By-Product's flow are low, the wood operation has to be subsidized by other processing operations. It is Waste By-Products' intent to have the wood operation stand on its own. The decrease in yard debris flow (and fuel value) in the winter could have a significant negative impact on Waste By-Products because they are the only processor with equipment which could not be used to develop other products. During periods of low flow, Waste By-Products has pursued processing on a service contract basis.

In terms of size, convenience and safety, the sites appear to be suitable. Access roads and unloading areas on-site must continue to be well maintained so there is no danger to the public. The sites are well situated in the region so most Metro citizens do not have to drive more than 20 minutes to any site. See Figures 8, 9, 10, 11 and 12. From past Metro studies, it has been estimated that 50 percent of all public users of general use landfills travel greater than 20 minutes to those facilities.

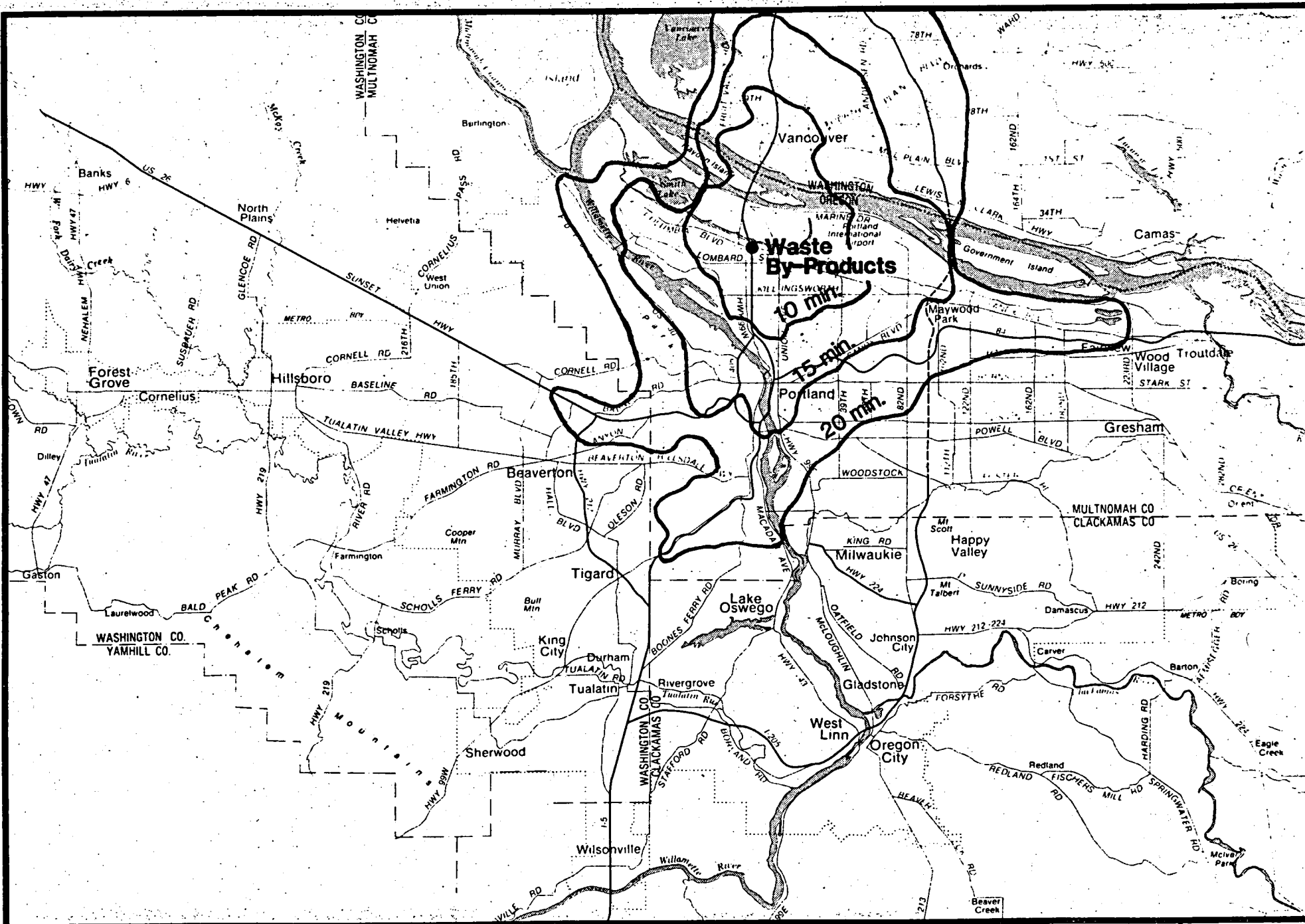
#### City of Portland Sludge Composting Project

City engineers were contacted to determine whether yard debris could be mixed with municipal sewage sludge and composted in the proposed Taulman/Weiss composting facility to be constructed at the Columbia Boulevard Treatment Plant. It was concluded by City engineers that yard debris could not be used in the process because of the risk of excessive wear to composting equipment by grit mixed with processed yard debris. However, processed yard debris could be mixed with the sludge compost product and marketed. The Taulman Company who must market the compost has been contacted to determine their interest in this possibility. In addition, since the City needs large quantities of sawdust for the compost process, it is possible that yard debris related products could ease the increased local demand for sawdust. This benefit to the City could be significant enough to warrant their future involvement in a yard debris recovery program.

#### General Trends

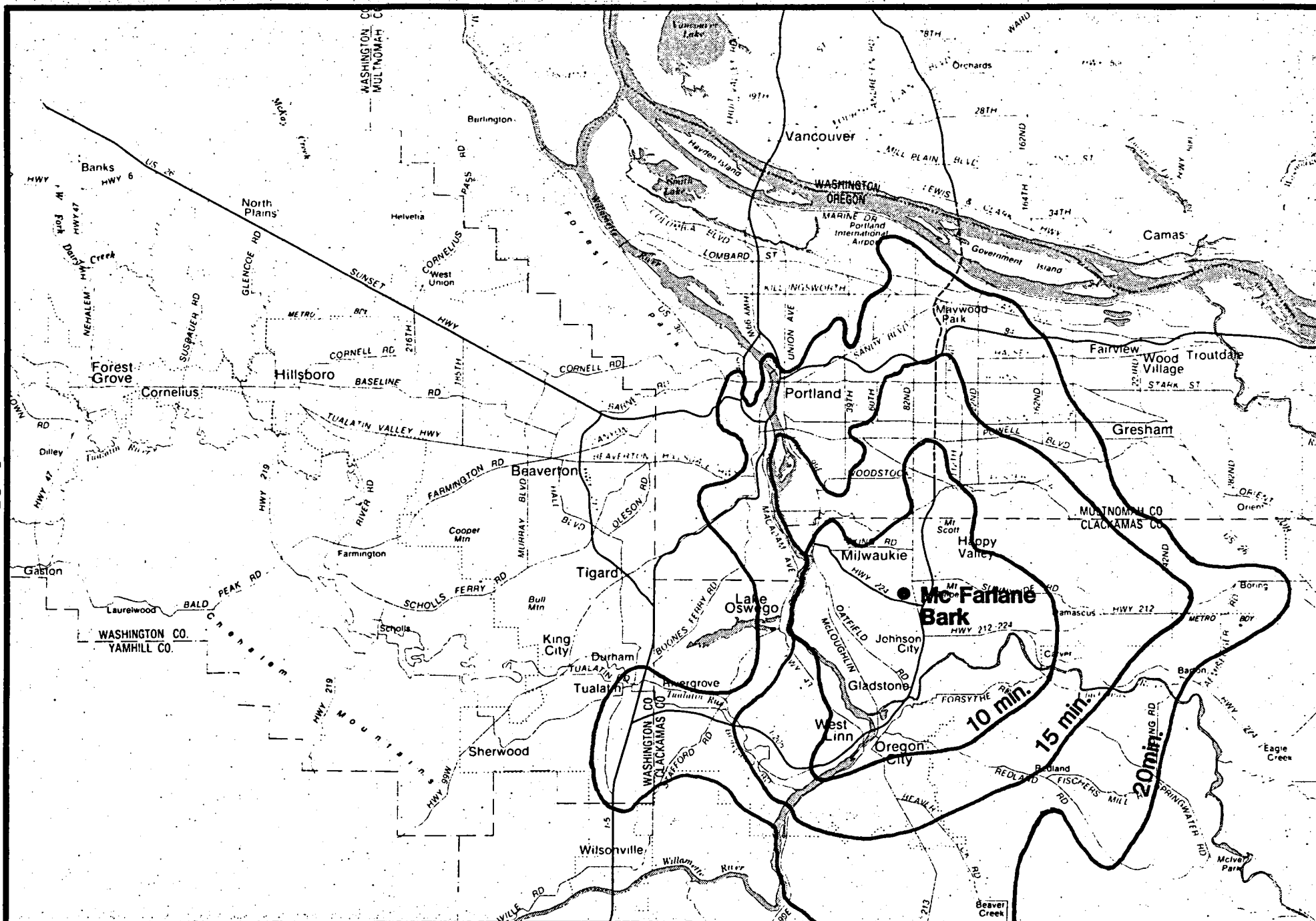
1. Low flows of yard debris were experienced during weeks of poor weather.
2. Approximately one-third of McFarlane's users were commercial, while at St. Johns Landfill, almost all traffic was private.
3. Highest volumes of yard debris were experienced after the storm in November 1981 and in mid-May 1982.
4. From a composition survey taken June 20-30, 1981 at St. Johns Landfill; 8.7 percent of the total waste brought by the public





# TRAVEL TIME TO WASTE BY-PRODUCTS

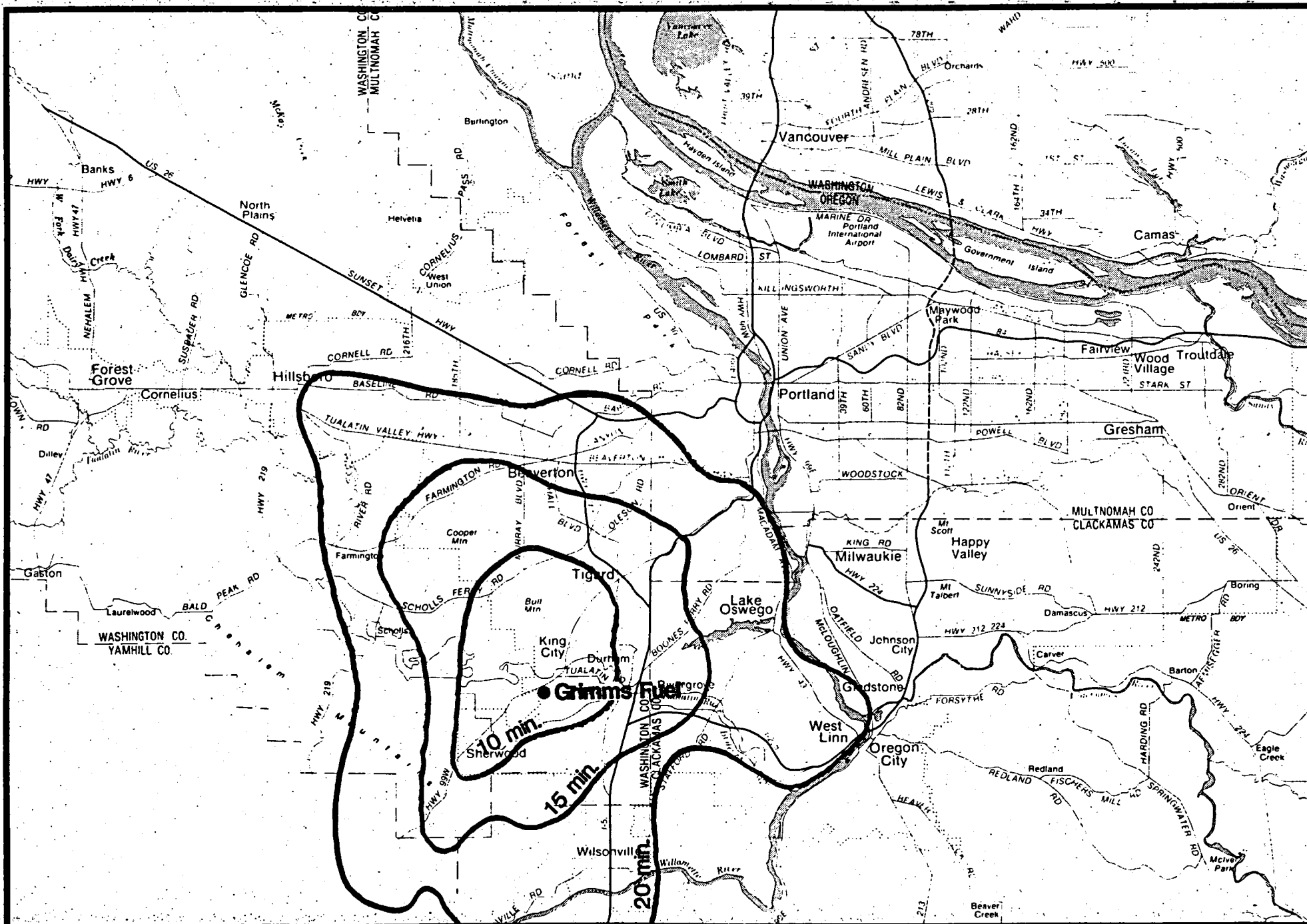
FIG. 8

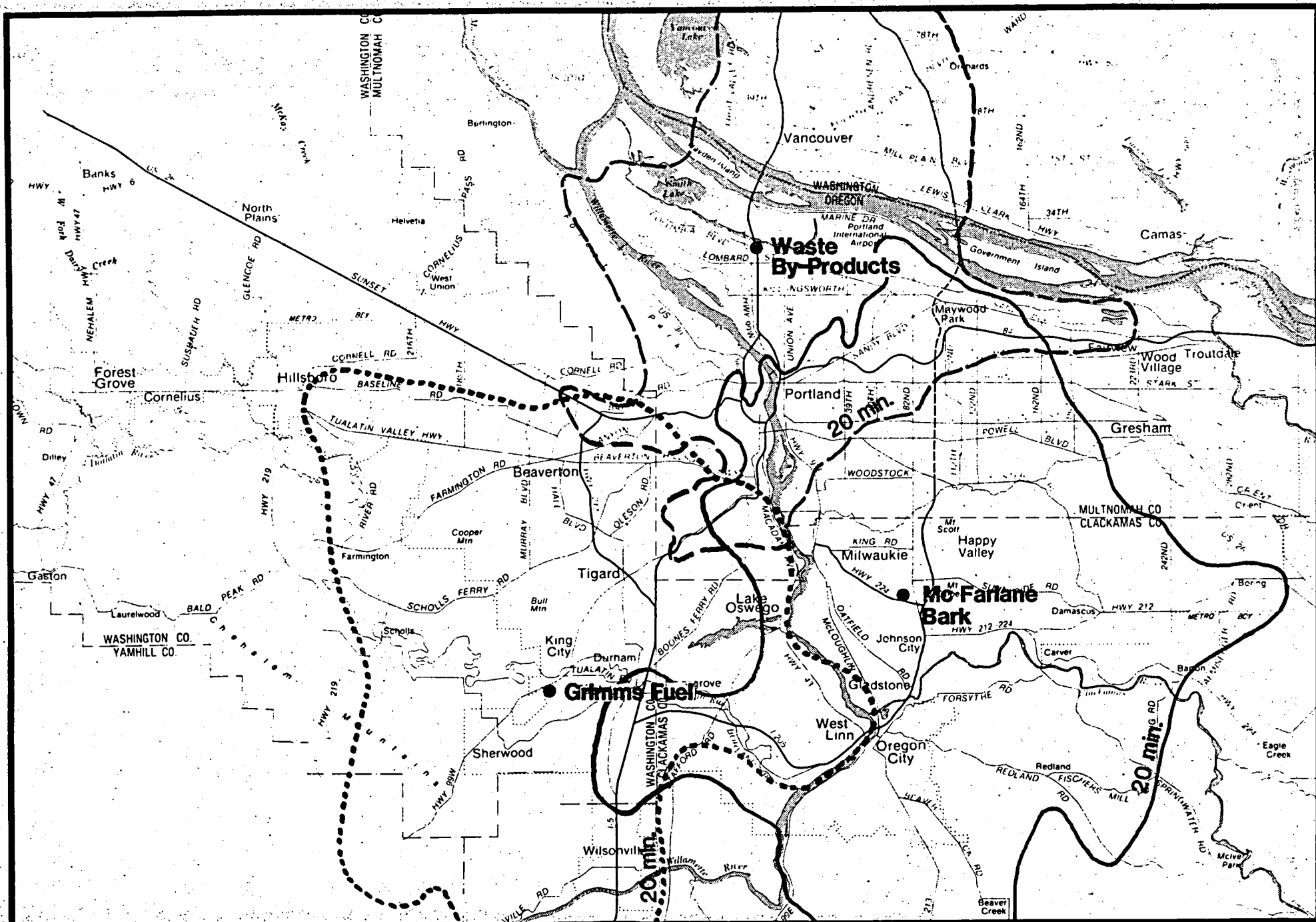


**TRAVEL TIME TO Mc FARLANE BARK**

**FIG. 9**

**FIG. 10**

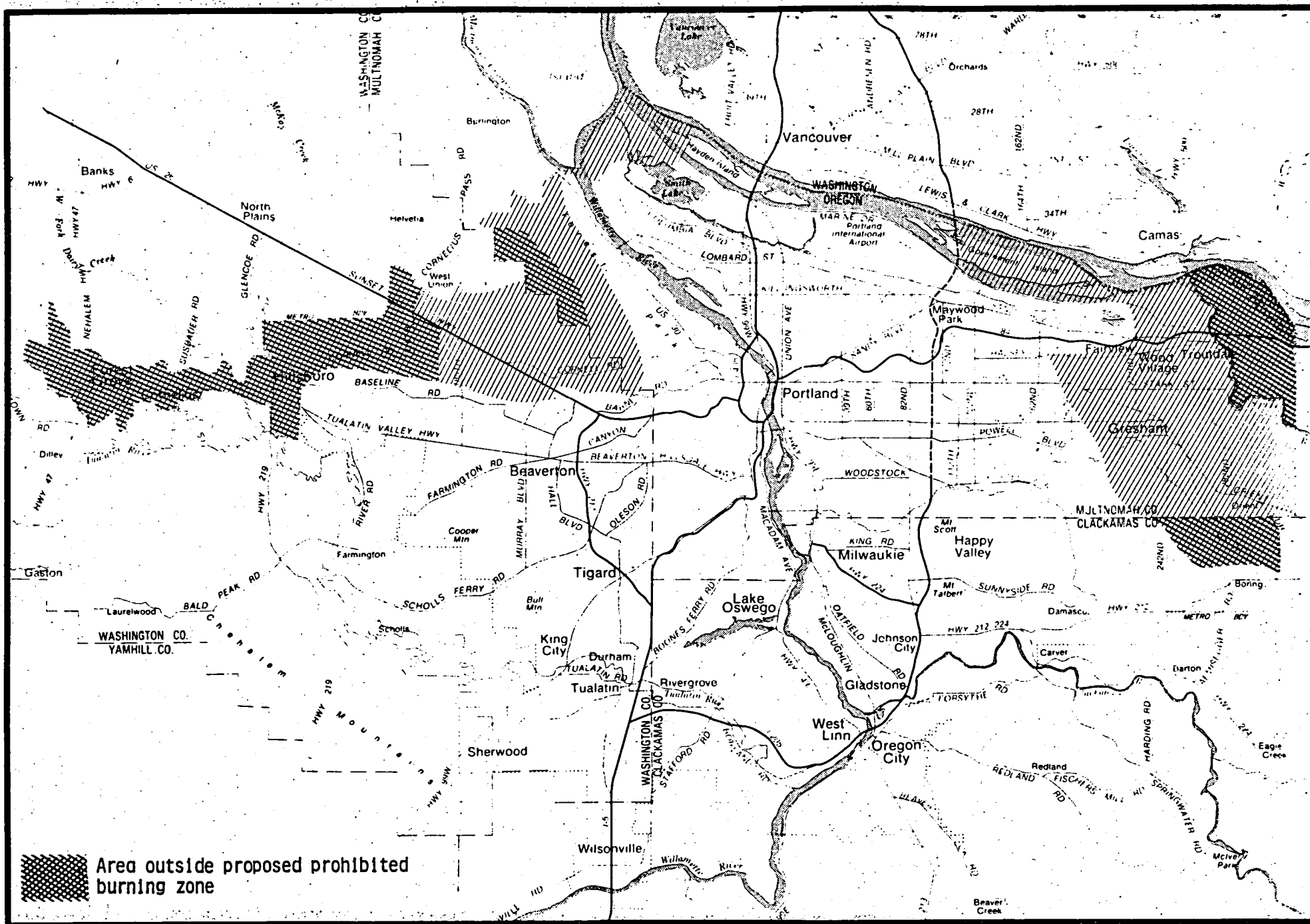




**20 MIN. TRAVEL TIME TO PROCESSING CENTERS**

**FIG. 11**

1-28



**AREAS NOT WITHIN 20 MIN. TRAVEL TIME**

**FIG. 12**

was wood yard debris and 40 percent of the total waste brought by the public was wood contaminated with other vegetative yard debris.

In FY 82, almost 100,000 tons of garbage was disposed by public vehicles in the region. Based on the survey, the following where quantities brought by the public and disposed in landfills in one year: 8,700 tons (69,600-116,000 cu yd) of wood waste (yard debris) and 4,000 tons (32,000-53,333 cu yd) of contaminated wood waste (yard debris). The total of these values, 12,700 tons (101,600-169,333 cu yd @ 250-150 lb per cu yd compares well with DEQ survey estimates of 100,000-115,000 cu yd for the amount of yard debris self-hauled by private citizens to disposal facilities.

5. Higher flows of yard debris were experienced during the summer months in Phases III and IV when a ban on burning was in effect.
6. In Phase II, 8,794 cu yd in 19 weeks was received at St. Johns Landfill, and the subsidy was \$2.21 per cu yd. At their site in N. Portland, Waste By-Products has received 11,787 cu yd from September-January at cost of about \$1.60-\$2.00 per cu yd.
7. In January 1982, 826 cu yd of yard debris was received and recovered at St. Johns and in January 1983, Waste By-Products received and recovered 2,336 cu yd of yard debris. Waste By-Products has recovered a total of 44,000 cu yd of material at their north Portland site since they started receiving material (October 1981-January 1, 1983). From December 13, 1981 - January 12, 1982, McFarlane's recovered 1,185 cu yd of yard debris and from December 13, 1982 - January 12, 1983, they collected 4,246 cu yd.

## Collection Alternatives

The collection alternatives will be analyzed according to the following criteria:

- ease of implementation;
- participation;
- economics;
- public acceptance;
- potential for ongoing program; and
- potential for wider application.

The analysis of collection alternatives is graphically summarized in Figure 3. Table 6 contains information on the collection alternatives and Table 7 outlines a summary of the costs of the projects. Descriptions of Case Studies 1, 2 and 3 can be found in the Phase III Evaluation and Case Studies 4, 5 and 6 can be found in Phases III and IV Evaluation in Part 2 of this report.

### Case Study 1 - Oregon City - On-Route Curbside Collection by City Crews

The level of effort in labor and equipment used in Oregon City's pick-up was somewhat greater than the other alternatives. While they recovered the most material, they incurred the greatest cost. According to Oregon City officials the participation rate was approximately 80 percent which made this project the most effective. Since the project was free to residents and no preparation of yard debris was required, the public probably welcomed the project. Because of the costs, this method of collection will probably not continue on a regular basis.

#### Drawbacks:

- The material could be out on the curb for a month.
- Taking the material to the Public Works Shop area for transfer created extra handling.
- Residents had to clean-up their yard with only a few days notice.
- Using small open trucks required frequent trips to McFarlane's.
- Excessive cost for this service. Many cities lack equipment and labor to conduct this type of project.

#### Options for Consideration:

- Look at using compacting vehicles on-route and hauling directly to McFarlane's.
- Include on-route collection service in collection franchise.
- Pick-up yard debris in both spring and fall.
- It would be more convenient if material could be dropped at Rossman's Landfill for processing.
- Expand promotion of project.

TABLE 6

YARD DEBRIS COLLECTION ALTERNATIVES

Location/Case #	Oregon City 1	A Lake Oswego B	West Linn 3	Portland 6	Beaverton 7	SE Portland 8	
Amount of Material Collected <sup>1</sup>	2,285 yd. <sup>3</sup>	98 yd. <sup>3</sup>	34 yd. <sup>3</sup>	690 yd. <sup>3</sup>	716 yd. <sup>3</sup>	1,791 yd. <sup>3</sup>	45 yd. <sup>3</sup>
Labor Cost/Loose Yd. <sup>3</sup>	\$2.45	\$3.06	\$2.94	\$12.90	0.37 yd. <sup>3</sup>	\$0.40	\$2.43
Transportation and Equipment Cost/ Loose Yd. <sup>3</sup>	\$6.16	\$1.16	\$1.56	Labor, Equip. & Trans.	\$1.75	\$0.01	\$1.70
Processing Cost/ Loose Yd. <sup>3</sup>	\$0.50	\$0.30	\$0.24	\$0.48	\$0.48	\$1.00	\$0.56
Total (Gross)/ Loose Yd. <sup>3</sup>	\$9.11	\$4.52	\$4.74	\$13.38	\$2.60	\$1.41	\$5.24
Revenue/Loose Yd. <sup>3</sup>	-0-	\$3.00	\$3.00	-0-	-0-	-0-	-0-
Net Cost/Loose Yd. <sup>3</sup>	(\$9.11)	(\$1.52)	(\$1.74)	(\$13.38)	(\$2.60)	(\$1.41)	(\$5.24)
Time of Collection	11/15 - 12/14/81	11/18 - 12/4	1/4 - 1/14	11/30 - 12/4	8 individual days	3/27	5/1
Weather	Windstorm 11/13	Windstorm detrimental	Snow just before	--	--	--	--
Volunteers	None	None	None	None	Volunteer Labor	Labor & Equip. donated	None
Processing Center	McFarlane's	McFarlane's	McFarlane's	McFarlane's	McFarlane's/St. Johns	Waste By-Products	McFarlane's

<sup>1</sup>All figures are listed in loose yardsDR:bb  
12/21/82



TABLE 7

SUMMARY OF COLLECTION ALTERNATIVES

<u>Case Study</u>	<u>Location</u>	<u>No. of Residences</u>	<u>Project Participants</u>	<u>Quantity Collected</u>	<u>Total Cost</u>	<u>\$/cu.yd. Loose</u>	<u>\$/Residence</u>	<u>\$/Participant</u>
1	Oregon City	4,260	(80%) 3,480*	2,285	\$20,818	\$9.11	\$4.89	\$5.98
2 a)	Lake Oswego	12,000	(0-1%) 55	98	\$441 (\$147)	\$4.50 (\$1.50)	\$.04 --	\$8.02 (\$2.67)
b)		12,000	(0-1%) 21	34	\$161 (\$59)	\$4.74) (\$1.74)	\$.01 --	\$7.67 (\$2.43)
3	West Linn	4,360	(4%) 177	690	\$9,231	\$13.38	\$2.12	\$52.15
6	Portland	20,000 (est.)	570 (est.) <sup>2</sup>	716	\$1,836 <sup>1</sup>	\$ 2.60	--	-- \$3.21 (est.) <sup>2</sup>
7	Beaverton	15,175	(10%) 1,500	1,800	\$2,515	\$1.40	\$.17	\$1.68
8	Southeast Portland	726	(13%) 92	45	\$236	\$5.24	\$.33	\$2.57

\*Oregon City estimates

N.D.: No Data

<sup>1</sup>Does not include Administrative Costs

<sup>2</sup>Assumes 2.2 cu.yd. per trip

( ): Cost less revenue

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12/21/82

## Case Study 2 - Lake Oswego - On Call Pick-Up by Franchised Hauler

This alternative was not difficult to set up and carry out. The one-person crew on a small packer was also effective. The level of participation was hindered by the weather and future efforts could produce better results. Charging the customers \$3.00 per cu yd may have been a disincentive, but it resulted in a more economically feasible project. Public acceptance was mixed because of the storm. Some did not want to wait for the new assigned pick-up date to have their debris picked up and some people did not want to prepare the yard debris as instructed. This project has good potential for an ongoing program because the unit cost (dollar per cu yd) was less than all non-clean-up collection alternatives.

### Drawback:

- System was not very efficient because many residences were passed during pick-up that could have been served.

### Options for Consideration:

- As quantity of material increases, use a larger packer so fewer trips are made to McFarlane's Bark.
- Increase promotion and education.
- Collect debris earlier in the fall season and again in the spring.
- Charge on a per residence basis with a specified maximum quantity of yard debris that will be picked up.

## Case Study 3 - West Linn - On Call Pick-Up by City Crews

The level of effort to carry out this project was moderate to excessive. The participation was fair to good because only woody waste from the storm was picked up. Also, the unit cost (dollar per cu yd) and the cost for each participant was the highest of all the collection alternatives. Although the city spent half as much as Oregon City, quantities of yard debris collected in Oregon City was more than three times the quantities collected in West Linn. Since this was a free service and the public did not have to bundle the woody waste, it is assumed that they supported the project. The project has a low potential for becoming an ongoing program because of the costs.

### Drawbacks:

- Too much equipment and labor dedicated to project.
- Project addressed limbs and branches from storm only. Bagged or other yard debris was not collected.
- Many cities lack equipment, labor and funds to perform this service.

### Options for Consideration:

- Collect debris earlier in the fall season and again in the spring.
- Collect debris with a packer truck rather than open trucks.
- Include on-route collection service in collection franchise.
- It would be more convenient to unload material at Rossman's Landfill for processing.
- Expand promotion.
- Look at extending collection time from one week to at least two weeks and decreasing to one crew.
- Look at collecting all yard debris.
- Look at charging a fee for the service.

### Case Study 6 - City of Portland - Neighborhood Clean-Ups

This project requires minimal effort to organize and implement, assuming the neighborhood runs the clean-up and supplies volunteers. When held in conjunction with a garbage clean-up, receiving yard debris requires more staffing and organization. It is difficult to determine the levels of participation. However, assuming 2.2 cu yd per trip about 570 residents brought in yard debris to the clean-ups (three percent estimated participation). The unit cost (dollar per cu yd) is almost the lowest. Since the project was free, (but participants had to load the material into vehicles and travel to a clean-up) it is assumed the acceptance of this project is good. This project has a very good potential for becoming an ongoing program because of the low cost. However, the City will not be funding this project in the next year.

### Drawbacks:

- Volunteers are needed. May have trouble getting volunteers once or twice a year.
- Contamination occurs when not enough volunteers are present to supervise unloading or volunteers are misinformed.
- Serves only a fraction of the people who need service.

### Options for Consideration:

- Look at possibility of having a small mobile chipper on-site to process bulky yard debris to reduce haul trips and disposal fees.
- Charge a fee for people to unload yard debris.

### Case Study 7 - City of Beaverton - Clean-Up by City Crews and Franchised Hauler

The level of effort to implement the clean-up was high. This was because two drop-off sites were established and yard debris was transferred to a third site in Beaverton where the material was processed. Although residents had to self-haul yard debris to the sites, participation was high in the one-day clean-up. The volunteer effort made this the most inexpensive alternative.

Generally, people who participated in the clean-up liked it because it was free and they got a good feeling of community involvement. This project has very good chances for continuing in the future.

Drawbacks:

- Volunteers may not participate more than once or twice a year.
- This alternative provided service to a fraction of the people who probably needed service.
- Would need twice as much yard debris in future projects to have Waste By-Products mobilize and process at the Denny Road site for a reasonable rate.

Options for Consideration:

- Increase promotion.
- Have yard debris processed on-site with rented or borrowed manually fed chippers and hauled to the Grimm's Fuel site in large 30-40 cu yd drop boxes.
- Have service incorporated into collection franchise.

Case Study 8 - Southeast Portland - On-route Curbside Collection by Non-Franchised Hauler

This alternative required only two vehicles and three people and the entire project took place in a few hours. The participation rate was the best of all alternatives besides Oregon City. The unit cost (dollar per cu yd) was comparable to the other curbside collection projects conducted by a commercial hauler. Since the project was free and was made available to a lot of people, the public probably liked the project. This alternative could be an ongoing program if each participant was charged about \$2.50 - \$3.00.

Drawback:

- Little incentive for non-franchised haulers to provide service.

Options for Consideration:

- Pick-up in afternoon so people have chance to put yard debris out.
- Charge customers a fee.
- Conduct project earlier in the spring and in the fall season.
- Pick-up on Monday morning so people have a weekend to prepare yard debris.

## GENERALIZED SYSTEM COSTS

There are six ways that people get rid of yard debris. Each option has both positive and negative costs and benefits. Figure 13 shows a schematic of the options and the generalized costs and benefits to each. By comparing the options the yard debris system can be better understood. The assumptions for each option are in Table 8.

Burning of yard debris has been a popular method of disposing of yard debris. Almost 90,000 cu yd each year are burned in the metro area (DEQ estimate). The value of air pollution offsets are the only quantifiable liability when yard debris is burned. More important however, are the "hidden" costs of the negative health and property impacts of the burning. Calculating the health and property impacts are beyond the scope of this report.

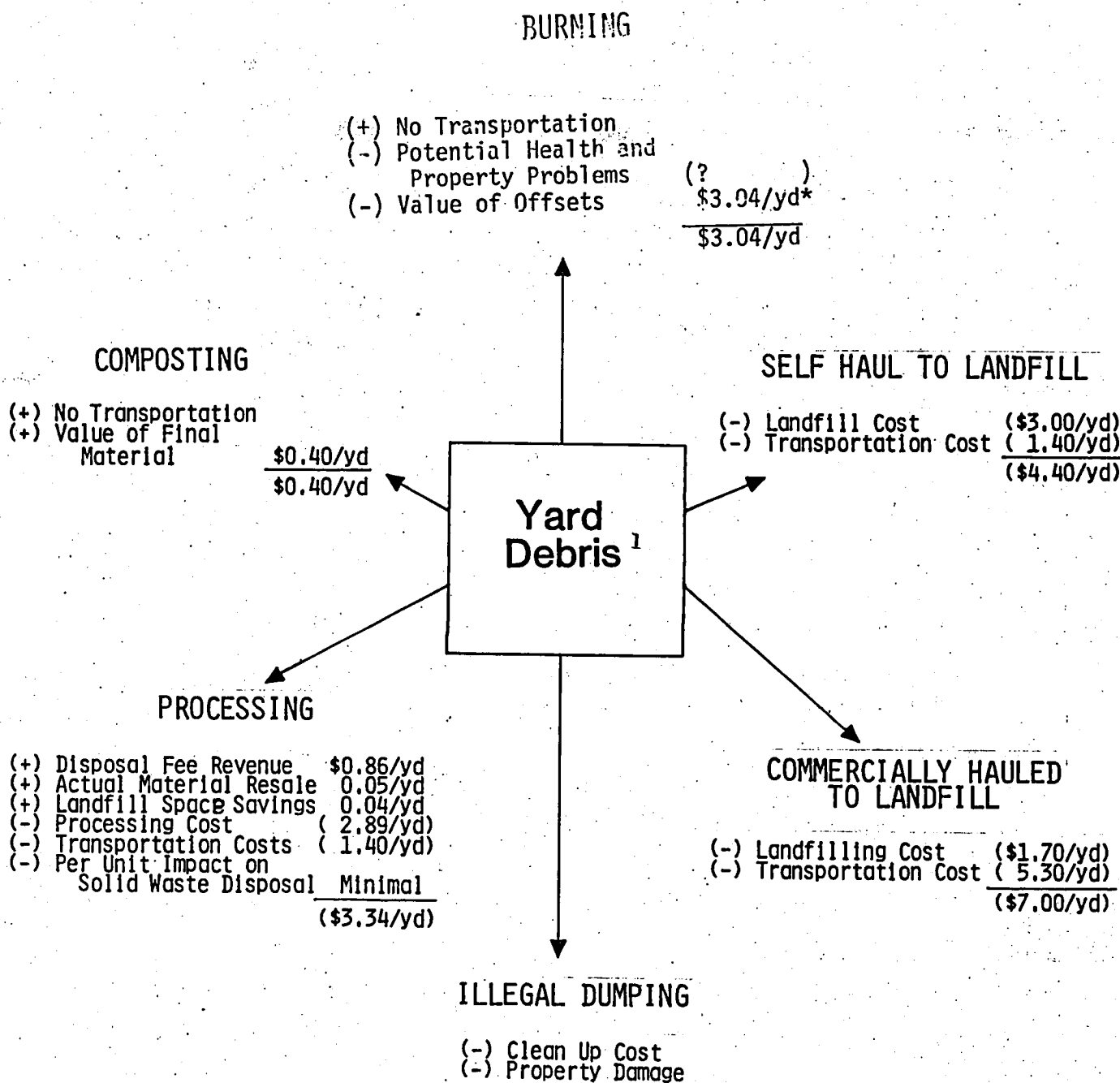
Landfilling of yard debris with the garbage has been the most common disposal option. Approximately 2/3 (400,000 cu yd) of all yard debris generated in the region each year is landfilled. Material can be brought to the landfill by self-hauling citizens or commercial haulers. If the yard debris is self-hauled the cost of landfilling is \$3.00 per cu yd (Metro public rate) and \$1.40 per cu yd for transportation. The costs for commercial disposal is \$1.70 per cu yd and \$5.30 per cu yd for transportation. The transportation cost for self-haul assumes use of a private vehicle, whereas the commercial costs reflect the operational costs of a commercial garbage hauling vehicle (based upon an estimate by Metro).

Over one-quarter of all yard debris in the region is composted. This end-use of yard debris results in no negative costs or liabilities (including transportation). Furthermore, if the compost is used by the resident, they would not have to buy the material. This would result in a \$.40 per cu yd net savings.

Illegal dumping has been a problem in the past and with increased collection and landfilling costs it could be a larger problem in the future. Clean-up costs to the local jurisdiction and the homeowner is significant but calculating these costs are beyond the scope of this report. In addition to the costs, the practice is undersirable on the basis of aesthetics and public health and safety.

Processing of yard debris has developed as a result of the demonstration project and these costs are quantifiable. The costs averaged approximately \$2.89 per cu yd for the handling and processing of debris and \$1.40 per cu yd for transportation (assuming a 20-mile per trip self-haul). Offsetting these costs were \$.86 per cu yd for disposal fee revenues and \$.05 per cu yd for selling the processed product. (Of all the yard debris processed by Waste By-Products and McFarlane's, only a fraction of the Phase II material was marketed by Waste By-Products.) Also, each cu yd of yard debris diverted from the landfill would save \$.04 of landfill space. Another benefit is the positive impact (e.g., social) received by the private concern who operates a yard debris recovery business. This too is difficult to quantify.





\* All Costs in \$ per Loose Yard<sup>3</sup>  
<sup>1</sup> See assumptions in Table 8

(+) Benefit or Value  
 (-) Cost or Liability



**YARD DEBRIS SYSTEM OPTIONS**

**FIG. 13**

Table 8

Yard Debris System Options - Assumptions

Burning

Value of Offsets (\$3.04 per cu yd) -- This \$ per loose cu yd value was set by a memo from J. Kowalczyk of DEQ according to the amount Metro was to pay to eliminate 76 ton per year of emissions as part of the Energy Recovery Project:

\$70,000 offered to be spent by Metro to remove 76 tons per year of emissions equals \$921 per ton of offset.

\$921 per ton (X) 280 tons of yard debris pollution is \$257,880.

\$257,880 (/) 84,784 cu yd of yard debris is \$3.04 per cu yd.

If a cu yd of yard debris is burned, it is "costing" \$3.04 of offsets.

Processing

1. Disposal Fee Revenue -- Average per loose cu yd revenue received at all of the processing centers.
2. Material Resale -- Actual average dollar per cu yd received for all material processed and sold.
3. Landfill Space Savings -- Average dollar per cu yd cost of the St. Johns Landfill expansion area = Total volume

4,906,000	yd <sup>3</sup>	total volume
133,000	yd <sup>3</sup>	cover material
4,773,000	yd <sup>3</sup>	volume for solid waste

\$1,364,000 total cost (/) 4,773,000 = \$0.29 per cu yd in-place or 4¢ per loose cu yd.

Note: To prevent double counting of cost savings, costs and/or savings are only counted once for the option through which costs and/or savings are incurred. A landfill disposal cost savings is not experienced when yard debris is diverted because the "space saved" will be used for other garbage. If yard debris is not landfilled, no operational cost is incurred. Landfill life will be extended, but the calculation of cost savings due to increased life is difficult to quantify and is beyond the scope of this report.

3. Processing Cost -- Average gross cost per yard of all processing centers.
4. Transportation Cost -- 20-mile round trip (assumed) x 22,504 trips x 20¢ per mile = \$90,000 - 65,000 = \$1.40 per cu yd.
5. Per Unit Price Impact -- Rate impact on solid waste because of loss of yard debris will be minimal.

#### Illegal Dumping

Clean-up cost and property damage are difficult to estimate and are beyond the scope of this report.

#### Self-Haul to Landfill

1. Landfill cost to the public = \$3.00 per cu yd.
2. Self-haul transportation cost is assumed to be equivalent to processing transportation cost.

#### Commercially Hauled to Landfill

1. Landfilling cost to commercial haulers = \$13.50 per ton (Metro) or \$1.70 per cu yd.
2. Transportation cost estimated by Metro to be \$70.00 per ton average for the region. This is equivalent to \$5.30 per cu yd (loose).

#### Composting

Assumes an \$8.00 value per cu yd of compost and a 20:1 compaction ratio.



It was beyond the scope of this report to identify all costs and benefits involved in the options in Figure 13. However, if a straight cost comparison is taken, processing appeared to be cheaper than landfilling (even with virtually no revenue from marketed products). If more product were sold, processing would improve its "position" over landfilling. Although burning appears to be the least expensive, the unquantifiable "negative" costs to the environment outweighs the small "out of pocket" costs of the individual.

## PROMOTION/EDUCATION

The promotion and education effort in the four phases impacted the number of calls to the Metro Recycling Switchboard. Because of the heavy influence of weather, it was difficult to determine relationships between promotion and participation except for Phase I. Detailed description of the promotion and education efforts may be found in Part 2 - Phase Evaluation of this report. The tools used to promote and inform the public of the Yard Debris Project were as follows:

### Mass Media

- television public service announcements
- paid radio advertisements
- paid newspaper advertisements
- press releases/interviews/press conferences

### Written Communications

- posters
- brochure
- flyers

### Oral Communications

- presentations to community groups
- presentations to school children
- presentations to summer camp children
- Recycling Switchboard

Figure 14 contains the schedule of promotion and education activities undertaken for the Project. Figure 15 is a chart of the numbers of calls to the Recycling Switchboard. The following are recommendations on what could be done in the future:

1. Promotion could be concentrated in the spring and fall rather than year-round.
2. Distribution of written information should be a high priority, with mass media used to back up the message.
3. Minimum budget to produce written and mass communications tools should be about \$10,000 for each seasonal campaign.
4. Revision of the Health Kit brochure should be dropped in favor of updating the Yard Debris flyer and printing at least 100,000 copies for distribution to garden centers, local jurisdictions, libraries, etc.
5. Existing yard debris television spots should be aired through fall.

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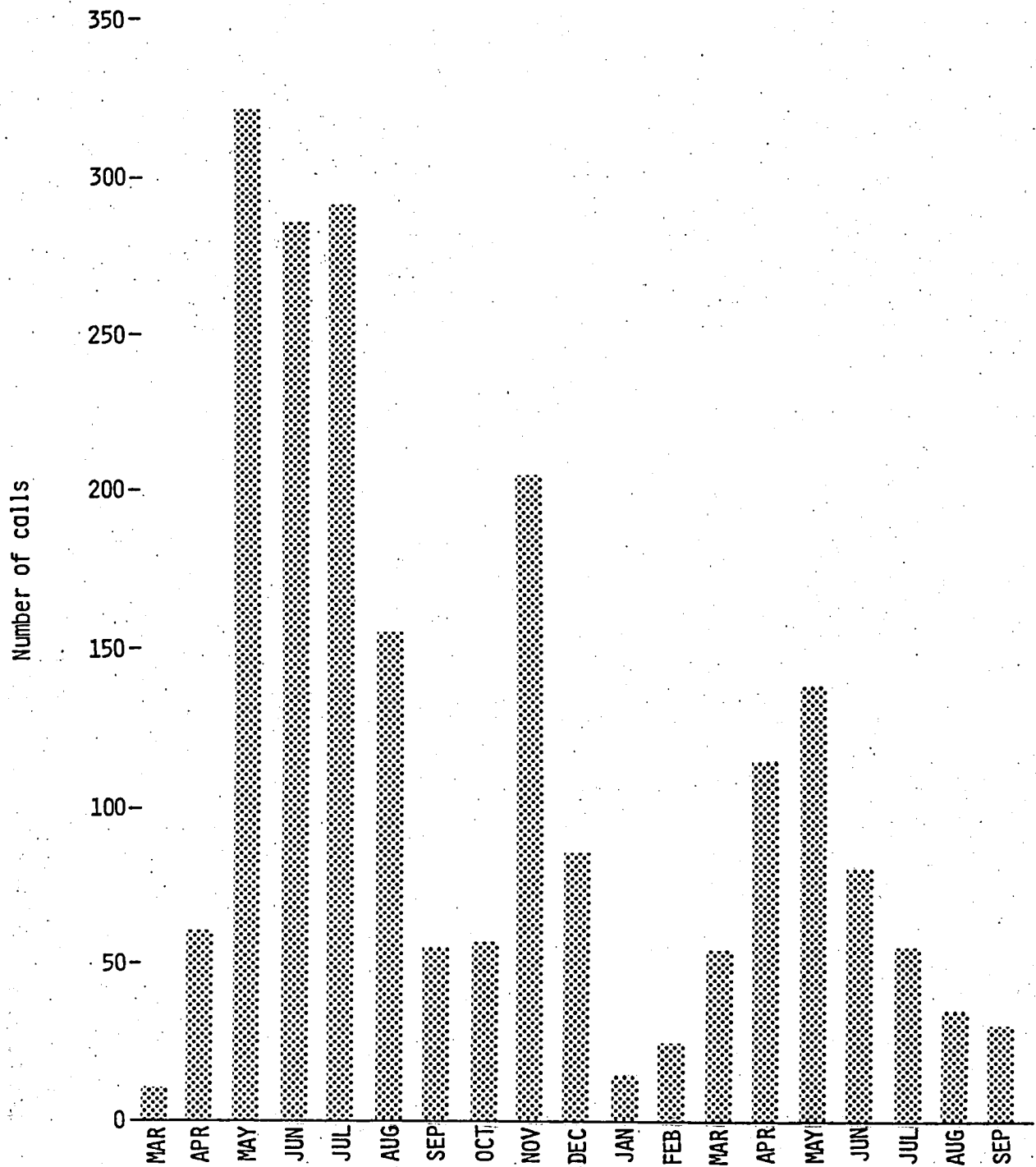
FIGURE 14  
SCHEDULE OF PROMOTION EFFORTS

	April 1981	May	June	July	Oct.	Nov.	Dec.
Television public service announcements	-----				-----	-----	
Radio ads (paid)					-----	-----	
Newspaper ads (paid)		-----			-----	-----	
Posters distributed	-----	-----					
Flyers distributed	-----	-----					
Brochure distributed	-----						-----
Press releases/interviews		X			X	X X	X
School presentations							
Camp presentations							
Community organization presentations							

FIGURE 14 (cont.)

1-43

	Jan. 1982	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.
Television public service announcements									—
Radio ads (paid)				—	—				
Newspaper ads (paid)									
Posters distributed									
Flyers distributed	—	—	—	—	—	—	—	—	—
Brochure distributed	—	—	—	—	—	—	—	—	—
Press releases/interviews		X	X X	XX	X				X
School presentations			—	—	—	—			
Camp presentations						—	—	—	—
Community organization presentations				—	—	—			



PHASE I  
May 16-24, 1981

PHASE II  
Oct-Feb 1982

PHASES III & IV  
Mar-Sep 1982



**YARD DEBRIS CALLS TO THE  
RECYCLING SWITCHBOARD**

**FIG. 15**

## APPENDIX

METRO REGION WASTE FLOW FACT SHEET  
FY 81 and FY 82

Total Waste Flow(tpy)	Commerical		Public		Total			
	FY81	FY82	FY81	FY82	FY81	%	FY82	%
St. Johns	231,764	210,791	20,452	20,070	252,216	32.2	230,861	30.6
Rossman's	273,176	264,434	40,781	33,745	313,957	40.1	298,179	39.5
Newberg	54,800	56,366	0	0	54,800	7.0	56,366	7.5
Woodburn	5,127	5,481	0	0	5,127	0.7	5,481	0.7
Rose City	51,483	30,825	38,106	36,418	89,589	11.4	67,241	8.9
Hillsboro	20,365	12,875	10,650	9,462	31,015	4.0	22,337	3.0
Grabhorn	25,526	26,582	0	0	25,526	3.3	26,582	3.5
Nash Pit(start up)	4,932	45,448	0	0	4,932	0.6	45,448	6.0
Marine	288	671			288	<0.1	671	0.1
MDC	1,383	1,064			1,383	0.2	1,064	0.1
Santosh	5,005	386			5,005	0.6	386	<0.1
TOTAL**	673,800	654,900	110,000	99,700	783,800		754,600	

\*\*Correct to nearest hundred

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METRO REGION HAUL TRIP FACT SHEET  
FY 81 and FY 82

	Commercial		Public		Total	
	FY81	FY82	FY81	FY82	FY81	FY82
Total Trips						
St. Johns	53,295	46,844	66,636	54,414	119,931	101,258
Rossmans	58,622	54,031	135,933	121,902	194,555	175,933
Newberg	8,515	8,579	0	0	8,515	8,579
Woodburn	1,255*	1,239*	0	0	1,255*	1,239*
Rose City	28,141	20,051	132,409	127,854	160,550	147,905
Hillsboro	8,496	6,465	35,721	31,559	44,217	38,024
Grabhorn	4,088	4,187	0	0	4,088	4,187
Nash Pit	1,806	15,804	0	0	1,806	15,804
Santosh	500	67	0	0	500	67
Total**	164,700	157,300	370,700	335,700	535,400	493,000

\*Estimate based on volume - 20yd<sup>3</sup>/compacted vehicle  
25yd<sup>3</sup>/loose drop box

\*\*Correct to nearest hundred

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DISPOSAL RATES AT CLACKAMAS TRANSFER & RECYCLING CENTER

<u>Vehicle Category</u>	<u>Base Rate</u>		<u>Metro User Fee</u>		<u>Regional Transfer Charge</u>		<u>Convenience Charge</u>		<u>Total Rate</u>	
	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>
<u>COMMERCIAL</u>										
Compacted	10.33	3.05	1.68	0.43	1.47	0.38	1.49	0.38	14.97	4.24
Uncompacted	10.33	1.30	1.68	0.25	1.47	0.22	1.49	0.22	14.97	1.99

<u>Vehicle Category</u>	<u>Base Rate</u>		<u>Metro User Fee</u>		<u>Regional Transfer Charge</u>		<u>Convenience Charge</u>		<u>Total Rate</u>	
	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>	<u>Per Trip</u>
<u>PRIVATE</u>										
Cars <sup>1</sup>	\$4.86		\$0.54		\$1.60		\$0.50		\$7.50	
Station Wagons <sup>1</sup>	4.86		0.54		1.60		0.50		7.50	
Vans <sup>2</sup>	5.61		0.54		1.60		0.50		8.25	
Pickups <sup>2</sup>	5.61		0.54		1.60		0.50		8.25	
Trailers <sup>2</sup>	5.61		0.54		1.60		0.50		8.25	
Extra Yards	2.43		0.27		0.80		0.25		3.75	

<u>Vehicle Category</u>	<u>Base Rate</u>	<u>Metro Fee</u>	<u>Regional Transfer Charge</u>	<u>Total Rate</u>
<u>TIRES<sup>3</sup></u>				
Passenger (up to 10 ply)	\$0.20			\$0.20
Passenger Tire (on rim)	\$0.90			\$0.90
Tire Tubes	\$0.55			\$0.55
Truck Tires	\$2.00			\$2.00
(20" diameter to 48" diameter on greater than 10 ply)				
Small Solids	\$2.00			\$2.00
Truck Tire (on rim)	\$7.00			\$7.00
Dual	\$7.00			\$7.00
Tractor	\$7.00			\$7.00
Grader	\$7.00			\$7.00
Duplex	\$7.00			\$7.00
Large Solids	\$7.00			\$7.00

<sup>1</sup>Based on a minimum load of two cubic yards.

<sup>2</sup>Based on a minimum load of two and one-half cubic yards.

<sup>3</sup>Cost per tire is listed.

# DISPOSAL RATES AT ST. JOHNS LANDFILL

<u>Vehicle Category</u>	<u>Base Rate</u>		<u>Metro User Fee</u>		<u>Regional Transfer Charge</u>		<u>Total Rate</u>	
	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>	<u>\$/ton</u>	<u>\$/cy</u>
<b>COMMERCIAL</b>								
Compacted	10.33	3.05	1.68	0.43	1.47	0.38	13.48	3.88
Uncompacted	10.33	1.30	1.68	0.25	1.47	0.22	13.48	1.77

	<u>Base Rate</u>		<u>Metro User Fee</u>		<u>Regional Transfer Charge</u>		<u>Total Rate</u>	
	<u>Per Trip</u>		<u>Per Trip</u>		<u>Per Trip</u>		<u>Per Trip</u>	
<b>PRIVATE</b>								
Cars <sup>1</sup>	\$3.36		\$0.54		\$1.60		\$5.50	
Station Wagons <sup>1</sup>	3.36		0.54		1.60		5.50	
Vans <sup>2</sup>	4.11		0.54		1.60		6.25	
Pick-ups <sup>2</sup>	4.11		0.54		1.60		6.25	
Trailers <sup>2</sup>	4.11		0.54		1.60		6.25	
Extra Yards	1.68		0.27		0.80		2.75	

	<u>Base Rate</u>		<u>Metro Fee</u>		<u>Regional Transfer Charge</u>		<u>Total Rate</u>	
<b>TIRES<sup>3</sup></b>								
Passenger (up to 10 ply)	\$0.20						\$0.20	
Passenger Tire (on rim)	\$0.90						\$0.90	
Tire Tubes	\$0.55						\$0.55	
Truck Tires	\$2.00						\$2.00	
(20" diameter to 48" diameter on greater than 10 ply)								
Small Solids	\$2.00						\$2.00	
Truck Tire (on rim)	\$7.00						\$7.00	
Dual	\$7.00						\$7.00	
Tractor	\$7.00						\$7.00	
Grader	\$7.00						\$7.00	
Duplex	\$7.00						\$7.00	
Large Solids	\$7.00						\$7.00	

<sup>1</sup>Based on a minimum load of two cubic yards.

<sup>2</sup>Based on a minimum load of two and one-half cubic yards.

<sup>3</sup>Cost per tire is listed.

# SOLID WASTE DISPOSAL RATES

Landfill	Current User Fee (December, 1982)			User Fee & Regional Transfer Charge Effective January 3, 1983				
	Base Rate	User Fee	Total Rate	Base Rate	User Fee	Transfer Charge	Base + User Fee & Transfer Charge	Total Rate
Rossman's								
Commercial (tons)	\$10.12	\$1.33	\$11.45	\$10.12	\$1.68	\$1.47	\$10.12+\$3.15	\$13.27
Public (2 cy)	\$ 5.41	\$ .45	\$ 5.86	\$ 5.41	\$ .54	\$1.60	\$ 5.41+\$2.14	\$ 7.55
Hillsboro (cy)								
Loose	\$ 1.45	\$ .20	\$ 1.65	\$ 1.45	\$ .25	\$ .22	\$ 1.45+\$ .47	\$ 1.92
Compacted	\$ 1.86	\$ .34	\$ 2.20	\$ 1.86	\$ .43	\$ .38	\$ 1.86+\$ .81	\$ 2.67
Demolition	\$ 1.90	\$ .20	\$ 2.10	\$ 1.90	\$ .25	\$ .22	\$ 1.90+\$ .47	\$ 2.37
Public	\$ 4.55	\$ .45	\$ 5.00	\$ 4.55	\$ .54	\$ 1.60	\$ 4.55+\$2.14	\$ 6.69
H. G. LaVelle (cy) (closed)								
Car/truck	\$ 2.55	\$ .45	\$ 3.00	\$ 2.55	\$ .54	\$ 1.60	\$ 2.55+\$2.14	\$ 4.69
Pickup/trailer	\$ 4.55	\$ .45	\$ 5.00	\$ 4.55	\$ .54	\$ 1.60	\$ 4.55+\$2.14	\$ 6.69
Demolition	\$ 1.80	\$ .20	\$ 2.00	\$ 1.80	\$ .25	\$ .22	\$ 1.80+\$ .47	\$ 2.27
Concrete, boulders	\$ 3.80	\$ .20	\$ 4.00	\$ 3.80	\$ .25	\$ .22	\$ 3.80+\$ .47	\$ 4.27
Brush over 5"	\$ 3.80	\$ .20	\$ 4.00	\$ 3.80	\$ .25	\$ .22	\$ 3.80+\$ .47	\$ 4.27
Drop box loose	\$ 1.50	\$ .20	\$ 1.70	\$ 1.50	\$ .25	\$ .22	\$ 1.50+\$ .47	\$ 1.97
Drop box compacted	\$ 3.00	\$ .34	\$ 3.34	\$ 3.00	\$ .43	\$ .38	\$ 3.00+\$ .81	\$ 3.81
Newberg (cy)								
Loose	\$ 1.50	\$ .20	\$ 1.70	\$ 1.50	\$ .25	\$ .22	\$ 1.50+\$ .47	\$ 1.97
Compacted	\$ 2.50	\$ .34	\$ 2.84	\$ 2.50	\$ .43	\$ .38	\$ 2.50+\$ .81	\$ 3.31
Public (minimum)	\$ 2.50							

# SOLID WASTE DISPOSAL RATES

Landfill	Current User Fee (December, 1982)			User Fee & Regional Transfer Charge Effective January 3, 1983				
	Base Rate	User Fee	Total Rate	Base Rate	User Fee	Transfer Charge	Base + User Fee & Transfer Charge	Total Rate
Santosh (cy)								
Compacted	\$ 1.75	\$ .34	\$ .09	\$ 1.75	\$ .43	\$ .38	\$ 1.75+\$ .81	\$ 2.56
Loose	\$ .95	\$ .20	\$ 1.15	\$ .95	\$ .25	\$ .22	\$ .95+\$ .47	\$ 1.42
Woodburn (cy)								
Loose	\$ 1.02	\$ .20	\$ 1.22	\$ 1.02	\$ .25	\$ .22	\$ 1.02+\$ .47	\$ 1.49
Compacted	\$ 1.50	\$ .34	\$ 1.84	\$ 1.50	\$ .43	\$ .38	\$ 1.50+\$ .81	\$ 2.31
Public (minimum)	\$ 4.00							
Additional yards	\$ 2.50							
Riverbend (McMinnville) (cy)								
Loose	\$ 2.00	\$ .20	\$ 2.20	\$ 2.00	\$ .25	\$ .22	\$ 2.00+\$ .47	\$ 2.47
Compacted	\$ 2.25	\$ .34	\$ 2.59	\$ 2.25	\$ .43	\$ .38	\$ 2.25+\$ .81	\$ 3.06
Public (minimum)	\$ 3.50							
Additional Yards	\$ 2.00							
Killingworth Fast Disposal (cy)								
Loose	\$ 1.40	\$ .20	\$ 1.60	\$ 1.40	\$ .25	\$ .22	\$ 1.40+\$ .47	\$ 1.87
Compacted	\$ 2.16	\$ .34	\$ 2.50	\$ 2.16	\$ .43	\$ .38	\$ 2.16+\$ .81	\$ 2.97
Stumps/logs	\$ 4.05	\$ .20	\$ 4.25	\$ 4.05	\$ .25	\$ .22	\$ 4.05+\$ .47	\$ 4.52
Boulders/concrete	\$ 4.05	\$ .20	\$ 4.25	\$ 4.05	\$ .25	\$ .22	\$ 4.05+\$ .47	\$ 4.52
Wire cable	\$ 4.05	\$ .20	\$ 4.25	\$ 4.05	\$ .25	\$ .22	\$ 4.05+\$ .47	\$ 4.52

# SOLID WASTE DISPOSAL RATES

Landfill	Current User Fee (December, 1982)			User Fee & Regional Transfer Charge Effective January 3, 1983				
	Base Rate	User Fee	Total Rate	Base Rate	User Fee	Transfer Charge	Base + User Fee & Transfer Charge	Total Rate
Grabhorn (Lakeside Reclamation) (cy)								
Loose	\$ 1.00	\$ .20	\$ 1.20	\$ 1.00	\$ .25	\$ .22	\$ 1.00+\$ .47	\$ 1.47
Compacted	\$ 2.00	\$ .34	\$ 2.34	\$ 2.00	\$ .43	\$ .38	\$ 2.00+\$ .81	\$ 2.81
Demolition	\$ 1.00	\$ .20	\$ 1.20	\$ 1.00	\$ .25	\$ .22	\$ 1.00+\$ .47	\$ 1.47
Stumps & Brush	\$ 2.00	\$ .20	\$ 2.20	\$ 2.00	\$ .25	\$ .22	\$ 2.00+\$ .47	\$ 2.47

TA:bb  
12/10/82

YARD DEBRIS DEMONSTRATION PROJECT

IMPACT ON LANDFILL

Total yard debris recovered: 65,397 cu.yd.

In-Place Volume (cu.yd.)

Density as Received (lb./cu.yd.)

		100	150	200	250
In-Place	1,000	6,540	9,810	13,079	16,349
Density	1,100	5,945	8,918	11,890	14,863
(lb./cu.yd.)	1,200	5,450	8,175	10,900	13,624
	1,300	5,031	7,546	10,061	12,576

Days Saved<sup>1</sup>

Disposal Costs Saved<sup>2</sup>

2.7	4.1	5.4	6.8
\$24,197	\$36,295	\$48,394	\$60,492

<sup>1</sup>Assume 1,200 tons/day (St. Johns Rate)

<sup>2</sup>Assume \$7.40/ton (St. Johns Disposal Rate)

WC:bb

12/21/82

California Yard Debris Projects (Update)

Palo Alto

(\$48,000 grant)

- Composting material generated by City crews.
- Forced aeration (not turning piles).
- Product to be used to close landfill and develop a park.

Davis

(\$68,000 grant)

- Separate collection by private hauler--front-end loader with 'claw' attachment loads into packer; clean-up crews follow.
- Equipment--W.H.O. is being tested.
- Composting in windrows on small site.

Sacramento

(\$35,000 grant)

- Leaf composting operation with Royer 300 shredder.
- Parks Department generates most material.

San Mateo

(\$75,000 grant)

- Composting City generated wastes using W.H.O. Tu's Grinder.
- Product to be used to close landfill and develop a park.

City of Hamet

(\$36,000 grant)

- Windrow composting by private garbage collection company.
- Scarab type equipment to turn piles.
- Agricultural end uses.

Modesto & Fresno

- Separate collection of yard debris.

All grants were awarded in June and July 1982 by California Solid Waste Management Board.

WC/srb  
7489B/342  
03/17/83

Rates at Yard Debris Processing Centers

(December 1982)

McFarlane's Bark

Private Vehicle

Cars	\$1.00
Pickup	\$2.00 (for first 2-1/2 cu yd)
Extra	\$1.00 per cu yd

Commercial Vehicle

Loose	\$.50 per cu yd
Compacted	\$1.00 per cu yd

Waste By-Products

Private Vehicle

Cars	\$3.00
Pickup	\$4.00 level pickup
	\$6.00 1 foot above bed
	\$8.00 to top of cab (maximum rate)

Commercial Vehicle

Loose	\$1.00 per cu yd
Compacted	\$1.20 per cu yd with 5% contamination

Grimm's Fuel

Pickup	\$2.00 minimum
Extra	\$1.00 per cu yd

WC/srb  
7489B/342  
03/17/83



PART 2 - PHASE EVALUATIONS

A Phase Evaluation was completed after each phase. The reports provide an information base from which the private and/or public sector could work to implement a program for processing and marketing of yard debris. Each report contains a description of the processing and collection alternatives demonstrated, quantities of yard debris received and vehicle type, environmental considerations, costs and promotion and education during the phase.

Phase I - May 16, 1981 - Clean-up Week (woody-waste only)

Three short-term processing locations were established at existing or old landfills. Shredding Systems processed 1,613 cu yd of woody waste into a hog fuel product. The collection alternatives demonstrated were in West Linn, Troutdale and the City of Portland. An intense promotion and education campaign was conducted.

Phase II - October 23, 1981 - February 28, 1982 - (19 weeks)

Two processing centers received all types of yard debris (no garbage, glass, rocks, etc.). Waste By-Products used a Medallion Tub Grinder to process yard debris into a hog fuel product at St. Johns Landfill. McFarlane's Bark used a hammermill and large mound compost process at their bark chip plant in Clackamas to make a compost product. Three collection alternatives were demonstrated in Oregon City (on-route curbside pick up by City crews), Lake Oswego (on-call curbside pick up by franchised hauler), and West Linn (on-call curbside pick up by City crews).

Phase III - March 1 - June 30, 1982 (17 weeks)

Phase IV - July 1 - September 30, 1982 (13 weeks)

Waste By-Products and McFarlane's continued to demonstrate processing alternatives. Contamination was experienced at St. Johns Landfill and methods to deal with this problem were demonstrated. Three more collection alternatives were demonstrated in Phase III; City of Portland (neighborhood clean-ups), Beaverton (city-wide clean-up) and Southeast Portland (on-route curbside pick up by unfranchised hauler). Waste By-Products opened a new site in North Portland and Grimm's Fuel opened a processing site near Sherwood. Grimm's is demonstrating the windrow method of composting.

The format for the evaluation reports was developed after Phase I (Phase I report is presented differently than the other Phases). Information in Phase II, III and IV reports is presented in several case studies. Other information on the demonstration project may be found in the Appendices under a separate cover. The Appendices contain news articles, promotion and education tools, committee minutes and contracts relating to the project. Each Appendix is numbered according to the respective Phase, so Appendix II-9 would be the ninth Appendix to Phase II.

PHASE I

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- I-14 Letter to Local Jurisdictions Regarding Collection Alternatives
- I-15 Agreement with Clackamas County and Rossmans Landfill, Inc.
- I-16 Agreement with City of Troutdale

## PROJECT DESCRIPTION

Realizing that the average homeowner would have the greatest difficulty disposing of bulky woody type waste (tree limbs, branches, twigs), the project focused on this material. In addition, a previous study conducted by Resource Conservation Consultants (RCC) identified boiler (hog) fuel as having the greatest market potential. Metro staff conducted preliminary market research which verified RCC's findings and ultimately led to product definition. The project was developed to answer two major questions:

- What is the quantity and composition of the material which could be collected during the spring months; and
- could woody waste be separated from other yard debris?

A clean-up week from May 16-24 was proposed to demonstrate collection, storage, processing, marketing, promotion and education alternatives. Based on the results obtained from this initial effort, subsequent recovery alternatives could be developed and implemented on an ongoing basis if appropriate.

A survey of area equipment dealers and land clearing firms was conducted to determine the types of processes which would be suitable to process the material into various products. A market survey was also conducted to determine product specifications and quantities of material which could be received at the various markets. Numerous lumber mills, landscaping suppliers and fuel companies were contacted.

Proposals were formally solicited for processing various quantities of material at designated temporary storage sites. In addition, the processor was asked to identify a specific market for the various materials produced. Although hog fuel was considered to have the greatest potential in terms of marketing, the request for proposals was designed to enable firms to propose several processes/products. The requests for proposals were sent to both processors and markets with the hope that a complete proposal would be submitted designating a processor and market. One responsive proposal was submitted by Shredding Systems, Inc. of Wilsonville, manufacturers of shredding equipment, and Weyerhaeuser of Longview, Washington, a large wood and paper products manufacturer. Their proposal outlined the process, equipment and product specifications and contained a Letter of Intent from Weyerhaeuser to purchase the hog fuel product.

With a process/product and market selected, Metro was prepared to implement the project as generally proposed in the grant request. This plan consisted of the following:

- Acquire suitable temporary storage sites and prepare sites to receive an unknown quantity of material.
- Request local jurisdictions to participate in demonstrating various collection alternatives.
- Develop and implement promotion and education programs.



- Implement a reduced disposal fee for clean woody waste brought to sites.
- Develop and implement an operational plan at each storage site.

### Temporary Storage Sites

Siting criteria were established and possible sites were identified. The selection criteria were as follows:

- Must be fenced
- Must be available
- Must have safe ingress and egress
- Accessible by major roads
- Must avoid proximity to residential areas
- Must be approximately five acres in size
- Must be strategically located to minimize transportation

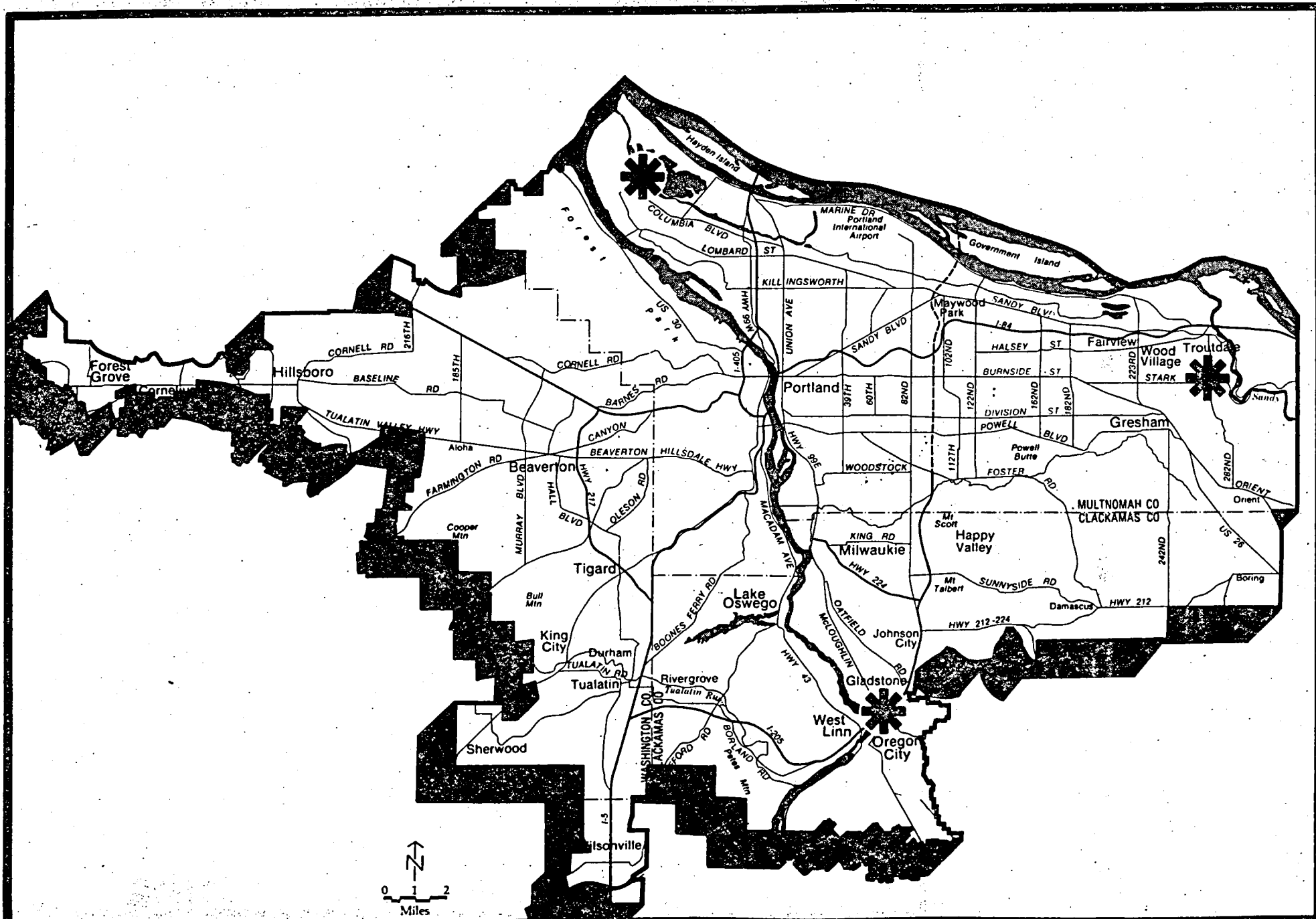
Six sites were chosen as short-term collection and processing sites that would qualify under these criteria. Of the original six, only three turned out to be feasible, given the time constraints for development and implementation of the project. The three sites were the St. Johns Landfill in north Portland, Rossman's Landfill near Oregon City and the Obrist's Pit in Troutdale (Figure 1).

Formal agreements were made with the owners/operators of the sites. The contracts designated responsibilities and costs for site preparation and operation.

### Collection Alternatives

All 27 local jurisdictions in the Metro region were requested to propose collection alternatives during the clean-up week. It had been hoped that many cities with collection franchises would require their haulers to participate in the project. However, only two jurisdictions (West Linn, Rossman's Sanitary Service and Troutdale, Edwin O. Ege Sanitary Service, Inc.) participated by providing separate collection of woody waste. The bureau of Neighborhood Environment with the City of Portland which organizes neighborhood clean-ups, participated by providing extra drop boxes for the separation of woody waste. Humbolt, Saben, Sellwood and Richmond Neighborhoods Associations participated by providing 'spotters' to supervise unloading of woody waste brought to their neighborhood clean-up projects. In addition, three small block groups in the City of Portland who initiated clean-ups participated in the project.

The City of West Linn, Neighborhood Associations and block groups, used drop boxes as the method of collection for their clean-up projects. These boxes were strategically placed for easy access by the individual residents and were staffed by volunteers including Lions Club, Boy Scouts, City staff and Neighborhood Association board members.



Yard Debris  
Program • Phase I

## LOCATION OF TEMPORARY STORAGE SITES

FIG. 1

### Reduced Disposal Fee

Metro has rate setting authority at the St. Johns Landfill and imposes a user fee at all disposal facilities in the area. An ordinance was passed by the Metro Council establishing a reduced rate for clean, uncontaminated woody waste brought to St. Johns Landfill. The reduced rate can be implemented on an ongoing basis at the discretion of the Executive Officer. The reduced rate was as follows:

Vehicle Category	Total Rate
Public	
cars, station wagons	\$1.00 <sup>1</sup>
pick-ups, trailers, vans	2.00 <sup>2</sup>
Commercial	
compacted	1.00/cy
uncompacted	.50/cy

<sup>1</sup>Based on a minimum load of two cubic yards.

<sup>2</sup>For the first two and a half cubic yards, each additional cubic yard is \$1.00.

Since the ban on open burning was lifted before conducting the clean-up week, the primary incentive to participate was the reduced fee. The city of Troutdale and Clackamas County/Rossman's Landfill agreed to institute the reduced rate at the other two storage sites during the clean-up week.

### Promotion and Education Program

The program was developed by Don Barney and Associates and Metro's Public Information Office. The program goal was to determine the effectiveness of various promotional and educational tools and distribution strategies and to advertise the clean-up week to as many homeowners as possible in a very short period of time (75 days). In addition, an ongoing education program was to be established to convey disposal alternatives of yard debris to the general public.

The materials developed included:

- Brochure "Yard Debris Health Kit" contained disposal alternatives for all types of yard waste (10,000 printed).
- Flyer "Yard Debris Clean-up Week May 16-24" outlined how to participate in project (200,000 printed).
- Poster "Yard Debris Clean-up Week May 16-24" outlined a more brief description of the project (2,000 printed).
- Fact Sheet "Composting" a brief five-step 'How to' description on composting.
- Public Service Announcement (PSA) "How to Get Rid of Yard Debris" a 30-second spot for people to contact the Metro Recycling Switchboard for questions on yard debris.
- Press Release "Metro to Pursue Alternatives for Yard Debris Disposal" promoted clean-up week.

All materials contained the telephone number of the Metro Recycling Switchboard.

Distribution of materials was conducted in the following manner:

- Brochures sent to all jurisdictions in Metro area.
- Brochures and flyers to City Halls, libraries, fire stations, public works departments, high schools and community colleges.
- Newspapers, magazines
  - .. Northwest Magazine (weekly for two weeks)
  - .. Tigard Times (two days)
  - .. Gresham Outlook (two days)
  - .. Hillsboro Argus (two days)
  - .. Valley Times (one day)
  - .. Clackamas County News (two days)
  - .. Enterprise Courier (two days)
  - .. This Week (all editions)
- The PSA appeared on local television stations.
- Approximately 100,000 flyers distributed to homeowners by local haulers in Clackamas, Multnomah and Washington Counties.
- PSA was recorded for radio and was played on several radio stations.
- City newsletters.

The Metro Recycling Switchboard also distributed information to callers before, during and after the clean-up weeks. Since the start of the project the number of calls pertaining to yard waste increased significantly:

March	-	10	calls
April	-	60	calls
May	-	320	calls
June	-	275	calls

The number of calls peaked during the clean-up week. Newspaper articles and special features on the clean-up week also appeared in many of the area newspapers. Special reports on local television news programs were also viewed. These were seen on four television stations.

#### Operational Plan

##### St. Johns Landfill--

The general purpose landfill is owned by the City of Portland and operated by Metro's contractor, Genstar/Easley and Brassy. The woody waste storage access road area had to be improved by grading and laying rock. To obtain data on the quantities and characteristics, woody waste had been received and stockpiled at an area near the public transfer area since mid-March. Before the clean-up week, citizens with vehicles containing clean woody waste would pay the regular disposal fee at the existing gatehouse and the

gatehouse attendants would direct the load to the stockpiled area. The stockpile was formed and maintained with Genstar's front-end rubber tire loader. Genstar agreed to prepare the site and maintain the stockpiles if they could use the processed woody waste as road cover for dust control. During the clean-up week, private vehicles with clean woody waste paid the reduced disposal fee at the existing gatehouse, proceed to the unloading area where a 'spotter' supplied by Genstar supervised unloading.

#### Rossman's Landfill--

The general purpose landfill is privately owned and operated by Rossman's Landfill, Inc. and franchised by Clackamas County. Site preparation included relocation of previously stored drop boxes, grading and laying rock in unloading stockpile area and access roads and securing a temporary gatehouse for use during the clean-up week.

The stockpile was located in an area of the landfill where there was activity. When a vehicle contained clean woody waste stopped at the permanent gatehouse during the clean-up week, the attendant would direct the vehicle to the gatehouse at the woody waste area. The attendant would inspect the load, collect the reduced disposal fee and direct the vehicle to an unloading stall at the stockpile where a spotter supervised unloading. Private vehicles which contained contaminated loads were required to pay the full disposal fee and dump at the work-face of the landfill. Clackamas County provided the woody waste, spotters and general supervision of personnel. The landfill operator donated a front-end loader and operator to prepare the site and maintain stockpiles. Metro contracted temporary help for the gatehouse.

#### Obrist Pit--

The Obrist Pit site, owned by the city of Troutdale, was not an operating landfill and had to be prepared. Access roads and stockpile areas were prepared by the City of Troutdale. The private vehicles were inspected at the temporary gatehouse and then directed to the unloading area where a spotter supervised unloading. City of Troutdale provided for the spotters and local supervision by the local police. The temporary gatehouse was staffed by Metro Solid Waste personnel who volunteered for this assignment.

## PROJECT ANALYSIS

### Constraints

Identification of institutional and political constraints is a prerequisite to an objective project evaluation. The controversy associated with the backyard burning issue had an impact on the project. For example, the City of Portland, Washington and Clackamas Counties supported the grant with conditions relating to the Environmental Quality Commission instituting the burning ban. Other local jurisdictions in the Metro region have chosen not to encourage or require their franchised haulers to participate in Metro's initial demonstration. Since Metro does not have collection authority, the cooperation of the local jurisdictions (and haulers) is a precursor to success of any recovery alternative.

The short lead time (approximately 75 days) may have prevented the local jurisdictions from instituting appropriate collection alternatives. Whereas most jurisdictions do have the authority to require their franchised hauler to provide service, the City of Portland and Multnomah County do not have a mechanism (via franchise) to require haulers to provide for separate collection of yard debris. The short lead time also prevented suitable promotion of the clean-up week, and acquisition of a greater number of appropriate temporary disposal sites.

During the clean-up week, the public could have burned yard debris on six of the nine days. Consequently, the quantities of woody waste recovered in the clean-up week does not accurately portray the quantities of woody waste generated in the region. Since there was an inexpensive convenient disposal alternative available to the homeowner (i.e., burning), the primary incentive to participate in the project was the reduced disposal fee.

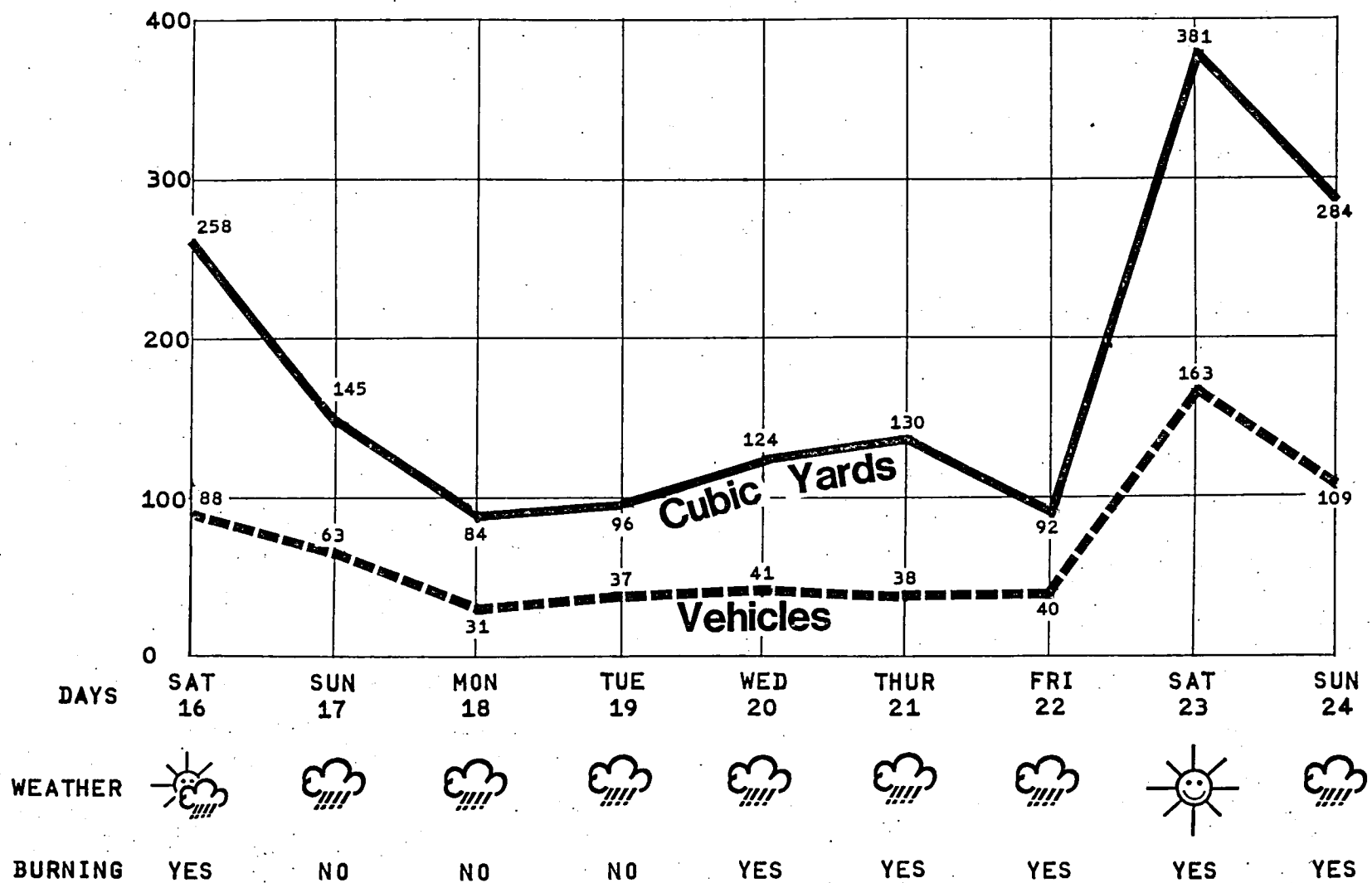
The weather conditions also had an impact on project participation. As can be seen in Figure 2, there was a higher participation rate when the weather was clear.

### Evaluation Criteria

To evaluate the initial demonstration effort the following criteria were developed:

- Ease of Implementation
- Participation
- Product/Market Development
- Economics
- Public Acceptance
- Potential for Becoming Ongoing Program

Based on the results of the clean-up week, recommendations will be made on future involvement strategies available to the region for the recovery of yard debris.



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**NUMBER OF VEHICLES & QUANTITY OF  
WOODY WASTE RECEIVED: All Sites, May 16-24**

**FIG. 2**

## Ease of Implementation--

Initiating a project of this nature requires moderate lead time to properly plan, develop and execute a work plan in cooperation with local jurisdictions and other government bodies. The milestones outlined in the grant request were optimistic at best and were based on an impending ban on backyard burning. Collection of material at St. Johns, for example, commenced in mid-March and processing occurred in mid-June. The complex tasks inherent to the project were difficult to implement in a short period of time (see schedule on Figure 3). Those tasks (within Metro's control) which were most difficult included:

- Securing processing capability
- Development and distribution of promotional and educational materials

Development and implementation of collection alternatives was the primary responsibility of the local jurisdictions. This task by far was the most difficult. Carrying out work tasks involving some of the local jurisdictions was found to be time consuming because each jurisdiction had to go through their own approval process. In the future, if local jurisdictions choose to implement collection systems of yard waste as part of their franchise, for example, Metro should provide suitable lead time and technical support.

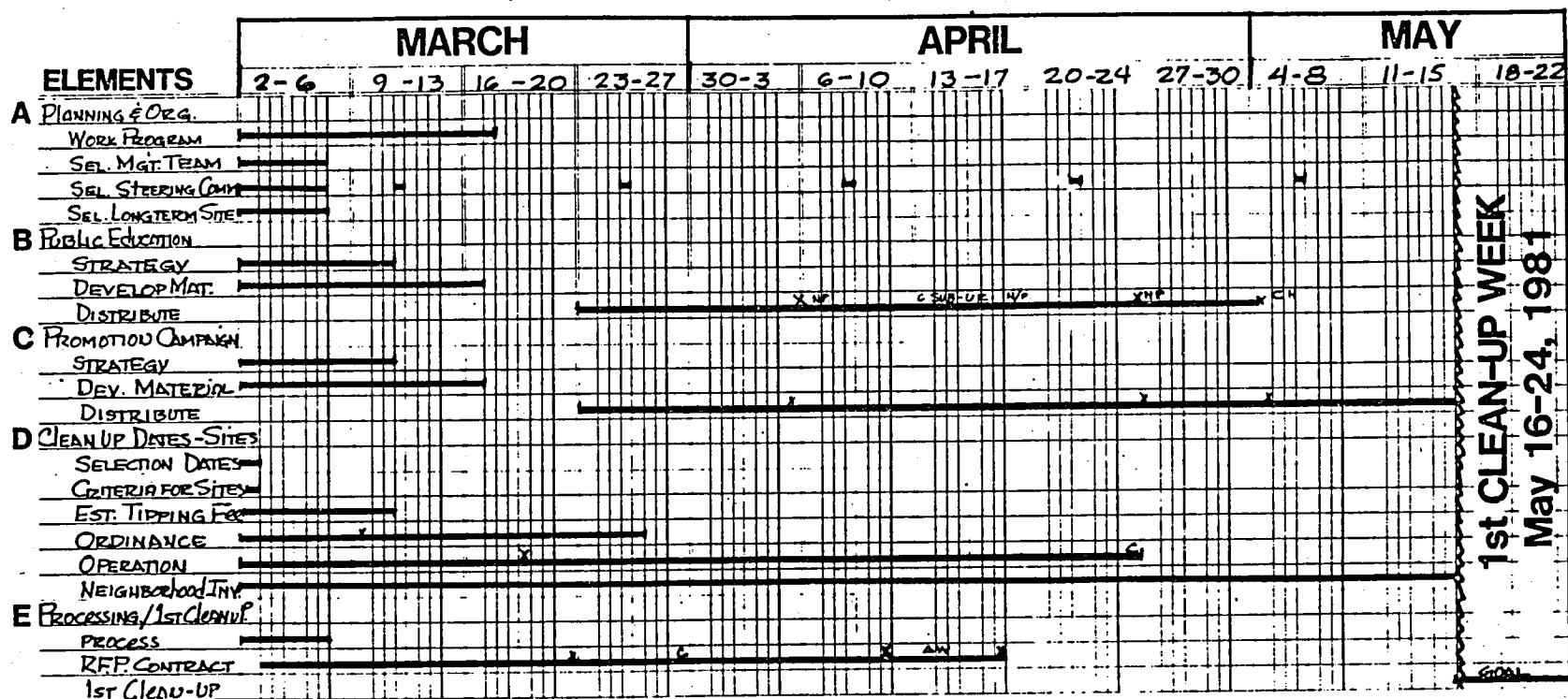
Metro, with the help of local jurisdictions, identified several possible storage sites. Of the three sites selected only Troutdale experienced operational problems. The site was not suitable for storage during wet weather. In addition, because the landfill was not operational, equipment had to be mobilized to the site. Long-term use of the Troutdale landfill as a temporary storage site could require further improvements resulting in added expenses.

Rossman's Landfill proved to be a well suited site to receive woody waste. Equipment was available on-site for preparing roads and unloading areas and maintaining stockpiles. The stockpile area and access roads were at/near final grade, so no new improvements would be necessary for future recovery efforts. The only operational problem experienced during the processing was the need for an extra gatehouse attendant. This resulted in increased operational costs.

Problems were also encountered when loading the material to market. Processing of woody waste occurred prior to product loading. When the material was ready to be loaded into the large (135 cubic yard) vehicles, the product loading conveyor could not reach the 13'-6" clearance required to load the truck. As a result, a platform was constructed to increase the height of the discharge.

Although Metro could have required Rossman's Landfill to stockpile the woody waste, the landfill owner was willing to cooperate with Metro on this demonstration project. An ongoing long-term project would require a greater commitment by the operator and, therefore, he would have to be compensated for the use of equipment and land.





At St. Johns Landfill, the processed woody waste was to be used on roads and near the work face to reduce dust and decrease the occurrence of flat tires. If the program was expanded and more material was stockpiled, a larger area would have to be developed. Since Metro has operational control of the landfill, implementation of an ongoing long-term program would require less lead time. However, Metro would have to amend the operations contract with the operator if the project was expanded.

#### Participation--

Metro conducted the project without knowing the quantities of material which could be delivered to the temporary disposal sites. As can be seen in Table 1, approximately 1,600 cubic yard were brought to the sites during the clean-up week. From mid-March until June, 5,000 cubic yards of woody waste contaminated with garbage and other yard debris was stockpiled and processed at St. Johns. (This material did not meet market specifications for hog fuel.)

These quantities are extremely low and could be misleading unless some of the factors which influenced the recovery of wood waste during the clean-up week are addressed:

- Number of neighborhood (municipal) clean-ups and the number of haulers who provided separate collection.
- Weather conditions.
- Seasonality.
- Effectiveness of promotion and education program.
- Location and number of storage sites.
- Ability of public to burn yard debris.

Local jurisdictions could have participated in the project by:

- Working with their local hauler(s) to provide collection of woody waste through neighborhood clean-ups or separate collection.
- Assisting Metro in acquiring temporary disposal sites.
- Assisting Metro in distribution of promotional materials.

#### Collection Alternatives

The City of Troutdale participated in every aspect of the project. Promotion and education in Troutdale was excellent--2,000 flyers were sent out in water bills and the local garbage hauler circulated flyers to each (approximately 2,000) customer. Information was also placed in three local newsletters. The franchised garbage hauler provided separate collection of woody waste as a service to his customers. The results--three cubic yards were collected by the hauler at a cost of approximately \$300.00 and 260 cubic yards of material were taken to the storage site by private citizens and landscapers.

The City of Portland organized four neighborhood to coincide with the clean-up week. Thirty cubic yard drop boxes were placed in

	COMMERCIAL						TOTAL		PRIVATE						TOTAL		GRAND TOTAL	
	ROSSMAN'S		TROUTDALE		ST. JOHNS				ROSSMAN'S		TROUTDALE		ST. JOHNS					
	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.	V.	YDS.
SAT. MAY 16	1	30	1	20	-	-	2	50	32	80	14	38	40	90	86	208	88	258
SUN MAY 17	-	-	-	-	-	-	-	-	25	59½	7	24	31	62	63	146½	63	145½
MON MAY 18	-	-	1	14	-	-	1	14	13	35½	4	13	13	27	30	75½	31	89½
TUE MAY 19	2	10	-	-	1	5	3	15	17	41	5	16	12	24	34	81	37	96
WED MAY 20	5	38	-	-	-	-	5	38	18	48½	2	4	16	34	36	86½	41	124½
TH MAY 21	1	5	-	-	1	20	2	25	17	62½	4	11	15	32	36	105½	38	130½
FRI MAY 22	-	-	-	-	-	-	-	-	17	45½	4	11	19	36	40	92½	40	92½
SAT. MAY 23	2	60	1	3	1	20	4	83	54	144½	16	33	89	121	159	298½	163	381½
SUN MAY 24	-	-	1	10	-	-	-	-	35	112½	19	66	55	106	109	284½	109	284½
TOTAL	11	143	4	47	3	45	17	225	228	629½	75	216	290	532	593	1377½	610	1,412½
										772½		263		577				1,612
										900		200		7423				7,423
														8,000				9,235

TABLE 1 - NUMBER OF VEHICLES AND QUANTITY OF WOODY WASTE RECEIVED AT ALL SITES

parking lots of commercial establishments between the hours of 10:00 am to 4:00 pm. At least one drop box was designated to receive woody waste. Citizens brought all types of waste to these drop-off points which were supervised by neighborhood volunteers and city staff. Passes were distributed to the hauler(s) taking pure loads of woody waste to the St. Johns Landfill. The passes were presented to the gatehouse attendants who charged the reduced rate to those loads. Contamination was encountered with this collection alternative due to the lack of direct supervision of drop boxes receiving only woody waste. Although signage was used, it was not effective in preventing other types of waste from entering the woody waste drop boxes. The costs for each clean-up is estimated to be approximately \$1,900.00 depending on the quantity of waste taken to the landfill. City clean-up organizers were not too concerned with the fact that drop-boxes containing contaminated woody waste were not eligible for the reduced rate, because the regular per ton disposal fee for the waste was only slightly higher than the reduced rate (due to the low density of the material).

West Linn also conducted a municipal clean-up partially funded by the project. On Saturday, May 23, six drop-off locations were designated in various parts of the city. A city truck and employee was placed at each location. Two thirty yard drop box loads of clean woody waste were unloaded at the storage area at Rossman's Landfill for processing. A few contaminated drop box loads had to be diverted for landfiling. Of the total clean-up cost of \$4,323.88, the Metro project funding was \$3,040.94. According to a survey conducted as part of the program, most material brought to the sites was yard debris. Eighty-one percent of the 111 participants mentioned that the clean-up day program sufficiently took care of their yard clean-up needs.

Five jurisdictions assisted Metro in recommending temporary disposal sites (City of Beaverton, City of Portland, Lake Oswego, City of Troutdale, Clackamas County, Oregon City). Fourteen jurisdictions assisted in distribution of promotional and educational materials. Washington County Haulers, City of Portland Haulers, Cloudburst Recycling (City of Portland) and the City of Troutdale hauler distributed materials to their customers. McDonald's, Association of Nurserymen, League of Women Voters, the Washington Park Zoo and Local 281 also distributed materials (see Table 2).

It can be concluded that recovery of woody waste should have occurred earlier in the spring season. In addition, although the weather was clear on the day collection occurred, homeowners could not prune and trim during the week due to the fact that it rained most of the week.

#### Product/Market Development--

The quality or characteristics of the product is dependent on the process (chipping, shredding, etc.) and the type (grass, leaves, woody waste, etc.) and moisture content of yard debris received. The project was developed to determine:

- the levels of contamination with varying degrees of inspection
- uses for two types of product having varying contamination

For example, contamination of material was experienced to a greater extent at St. Johns than Rossman's because only one person visually inspected loads at St. Johns and three people viewed loads at Rossman's. The product at St. Johns was utilized as part of the landfill operation. Material was processed and easily loaded into 30 cubic yard drop boxes which were taken to an area near the work face. The effectiveness of the material as road cover for controlling dust and tire blowouts was not determined.

A visual survey was conducted at St. Johns Landfill June 20-30, 1981 (Table 3) to determine quantities of clean and contaminated woody waste brought to the site. Although some contamination occurred at all storage sites, the product at Rossman's and Troutdale Landfills met the minimum specifications (less than two feet long) for Weyerhaeuser.

The equipment used by Shredding Systems, Inc. to process the material was a Model 72-46 horizontal shredder (300HP). The shredder, clamshell and conveyor were permanently placed on a double axle low boy for portable transport.

Visual observation and measurement of material has provided us with tentative data that can be utilized for future process planning.

- The shredding machine can process 120 cubic yards of stockpile woody waste per hour.
- The reduction ratio of stockpile wood waste to shredded material is 5:1.
- One cubic yard of shredded material equals 343 lbs (estimated).
- The product contained 40 percent moisture and most of the material was less than 18 inches long.

According to the grant request work scope, the strategy was to process the material into several possible products. Once the product(s) were established, markets would be developed and (hopefully) the private sector would take over the operation, with Metro supplying the waste material. Not knowing the quantities of woody waste which would be brought to the storage sites during the clean-up week, there was some concern of being 'buried' in the material and creating a disposal problem. Therefore, when Metro went out for bid for processing, a market was also solicited to purchase the processed product. Weyerhaeuser submitted a letter of intent to purchase the material at \$20 per dry ton if it met their minimum specifications. Product was loaded into large 135-cubic yard sawdust type trucks at both Rossman's and Troutdale Landfills for transfer to the plant located 60 miles in Longview, Washington. It would have been preferred to secure a local market but because local markets use forced air conveyance system, the product was not acceptable as processed. Weyerhaeuser uses conveyor belt to feed

their hog boilers and, therefore, has the ability to take larger sized product. Approximately 221 cubic yards or 39.5 tons (24 dry tons) of product was shipped to Longview.

#### Economics--

The grant request contained the following cost estimates to implement the yard debris demonstration project:

Public Education on Alternative Disposal Practices	\$ 50,000
Demonstration of Collection Alternatives	40,000
Processing and Transportation	150,000
Program Manager	25,000
	<u>\$265,000</u>

Matching funds by Metro, DEQ and the City of Portland (\$89,928) covered personnel, overhead, fringes, equipment and site preparation costs.

Table 4 contains a summary of costs and revenues for the clean-up week. The total expenses for the initial effort was \$92,422.40 and the revenues from disposal fees and the sale of the product was \$2,079. Although the costs seems to be excessive there were one-time expenses which will not have to be incurred for future projects. As can be seen, for Metro to conduct an ongoing program similar to the one demonstrated, long-term financing alternatives would need to be developed and implemented.

Long-term financing and revenue sources if Metro were to continue to provide the service include the following or a combination there of:

- user fee (dedicated to yard debris recovery project)
- landfill diversion credit (to private entities)
- DEQ loan (capital expenditures only-debt service paid back with user fees)
- disposal fee
- sale of processed product

User fee would spread the cost of providing the service over the entire disposal system.

Landfill diversion credit is a concept whereby Metro would compensate a private/commercial entity for diverting material from the landfill. This 'value' would be difficult to ascertain because:

- unit disposal costs decrease with increased solid waste flow
- the cost/benefit to achieving extended landfill life is difficult to estimate.

To determine the extended landfill capacity (space and time) achieved from diversion of material as a result of the initial demonstration effort:

## Woody Waste Recovered

### space

1,600 cubic yards of material diverted at 200 lb/cubic yard as received = 160 tons.  
assuming in place density of 1,000 lb/cubic yard, in place volume saved = 320 cubic yards.

### time

assuming regional solid waste generation rate of 2,000 tons per day 160 tons of material diverted (annual project) would extend landfill life less than 3/4 hours per year.

## Contaminated Woody Waste Recovered at St. Johns

### space

5,000 cubic yards of material diverted at 200 lb/cubic yard as received = 500 tons.  
assuming in place density of 1,000 lb/cubic yard, in place volume saved = 1,000 cubic yard.

### time

assuming regional solid waste generation rate of 2,000 tons per day 500 tons of material diverted (annual project) would extend landfill life about two hours per year.

If all yard debris (maximum estimated by RCC) were diverted from area landfills the impact on landfill capacity would be as follows:

### space

128,000 tons of material diverted (annually).  
assuming in place density of 1,000 lb/cubic yard, in place volume saved = 256,000 cubic yards.

### time

assuming regional solid waste generation rate of 2,000 tons per day 128,000 tons of material diverted would extend landfill life about two months per year.

## Public Acceptance--

It is difficult to determine whether the public supported the clean-up week. There were no complaints recorded during the one-week period. After the week ended, the Metro Recycling Switchboard received calls as a result of materials distributed and the PSA on yard debris was shown on television. Numerous callers wanted their yard debris picked up for free and when they were told that Metro could not supply this service (but they should contact their hauler) they were not satisfied.

Two citizen surveys were conducted (West Linn and Beaverton) where participants of city sponsored clean-ups were asked questions



relating to Metro's Clean-Up Week. Most people in Beaverton supported Metro's waste clean-up project and were willing to pay for the service.

Most haulers were indifferent toward Metro's Clean-Up Week. The hauler in Troutdale which provided separate collection of wood waste was not pleased when only a few citizens placed wood waste at the curbside for collection.

Informal discussions with a few franchised haulers indicate that they would not prefer to participate in separate collection of woody waste if they had to absorb the costs.

Several local jurisdictions were apprehensive about participating in the clean-up week because of their fear that it was a first step to a ban on backyard burning (and many opposed instituting the ban).

#### Potential for Becoming Ongoing Program--

The project as proposed could be developed into an ongoing program if several modifications were made:

- Expand promotion and education component of program.
- Give more lead time to local jurisdictions to develop collection alternatives and assist in distribution of promotion and educational materials. Metro should provide technical assistance (e.g., franchise language) in these efforts.
- Lower the already reduced disposal fee for commercial drop boxes creating a greater incentive to participate in the project. Raise the disposal fee to the private vehicle to recover more revenue.
- A Spring wood waste clean-up should be extended to three months and should occur early in the season-February, March or April.
- Have temporary storage of woody waste only at St. Johns and Rossman's Landfills unless local jurisdictions provide suitable sites, staffing and equipment for site operation.
- Backyard burning days should not coincide with clean-up projects.
- If possible, a local market should be sought.
- Processing and product loading should occur simultaneously.

Even with these modifications, an ongoing program would not be self-sustaining unless processing and other operational costs were significantly reduced.



## PROJECT SUMMARY

### Trends

1. The season, weather, lead time and duration of clean-up project have a large impact on project success.
2. Woody waste, if processed within two months, can be safely stockpiled without producing an increase of vectors at temporary storage sites.
3. Wood waste brought by the public can be effectively separated at temporary storage sites by using one spotter to supervise unloading.
4. The market (Weyerhaeuser) uses 104,000 dry bone tons of hog fuel annually and could, therefore, receive as much woody waste material as the Metro region could supply.
5. Neighborhood and municipal sponsored clean-ups must have constant supervision at drop boxes receiving woody waste to avoid contamination of the material.
6. To conduct an ongoing seasonal clean-up project as demonstrated, revenues from disposal fees and sale of product may have to be supplemented by other financing alternatives. According to projected cost estimates, a subsidy would be required.
7. The effectiveness of the promotion and education program is difficult to determine. Direct feedback from clean-up week promotion includes 600 calls to Recycling Switchboard in May and June and 600 participants who brought material to the storage sites.
8. As a result of the demonstration project, a mobile processing system was developed which could be used to recover other materials.
9. Although Metro has the authority to prohibit yard debris from being landfilled, the adopted Waste Reduction plan encourages yard debris recovery through the use of incentives.
10. Approximately 820 tons of material were recovered from the initial demonstration effort. If Metro is to achieve the Waste Reduction goal of 40 percent recovery of all yard debris by 1985, future yard debris recovery alternatives would have to recover 19,200-51,200 tons of material annually.
11. Approximately 75 percent of the loads brought to the temporary storage sites during the clean-up week were contaminated with non-wood type waste (leaves, grass clippings, etc.).

12. Two storage facilities located at general purpose landfills would be suitable for receiving and processing yard debris brought by the public and commercial haulers.
13. The educational component of the program must continue for several years before its full impact can be recognized.
14. The financial incentive for the disposal of yard debris is not as important to the private individual than to the commercial hauler or neighborhood municipality (organizing a clean-up project).
15. Although it seems to be economically advantageous for the private sector to initiate yard debris recovery efforts, there are risks associated with private involvement:
  - there is no guarantee that a private venture would provide a long-term permanent solution to the problem
  - Metro may need the material to meet steam demands at the Resource Recovery Facility.
16. The collection alternatives and incentives for the public to participate in the clean-up week did not meet project expectations.

#### Recommendations for Consideration in Next Phase

1. Since Metro has demonstrated that a process and market are available for recovering woody type waste generated during the spring months, Metro should demonstrate recovery alternatives for all types of yard waste (woody waste, leaves, grass clippings) which would be generated in the fall months.
2. The focus of the fall demonstration effort should be to work with the local jurisdictions to demonstrate collection alternatives and provide incentives for the homeowner to participate with the local hauler. Promotion and education should be concentrated within local jurisdictions.
3. Metro should investigate and recommend alternatives for financing an ongoing yard debris recovery program if it can be determined that such a program would be economically feasible.
4. Metro should provide local jurisdiction with model language for encouraging collection of yard debris to be incorporated in collection franchise ordinances.
5. The duration of subsequent recovery demonstrations should be extended from one to three months.

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TABLE 2

PROMOTION AND EDUCATION MATERIALS DISTRIBUTION  
AT VARIOUS LOCAL JURISDICTIONS

Beaverton - Clean Sweep Week. Notice in newsletter.  
20,000 distribution

Cornelius - Flyers and brochures for counter.

Durham - Free Trash Pick-Up Day, Saturday, April 25. Notice in  
newsletter. 325 distribution.

Fairview - 600 flyers inserted in newsletter.

Forest Grove - 1,000 flyers distributed public buildings.

Gladstone - Flyers at City Hall.

Gresham - 8,500 distributed in water bills.

Happy Valley - Flyers at City Hall. Notice in grade school  
newspaper, 340 distribution.

Hillsboro - 200 flyers at public buildings.

Johnson City - (Trailer Park - Notified owner only.)

King City - 50 flyers sent to City Hall.

Lake Oswego - 7,700 flyers inserted in water bills.

Maywood Park - Article in newsletter. 309 distribution.

Milwaukie - 200 flyers distributed in public buildings.

Oregon City - 2,500 flyers distributed in water bills.

Rivergrove - Article in newsletter. 140 distribution.

Sherwood - Flyers at public buildings.

Tigard - 200 flyers for Fire Department and public buildings.

Troutdale - 2,000 flyers for water bill insert.

Tualatin - Newsletter insert. 3,200 distribution.

West Linn - 6,000. The City distributed to merchants and public  
buildings.

Wilsonville - Article in newsletter. Flyers at public buildings.

Washington Co.  
Fire Districts - 6,000 flyers distributed to the six stations.

Multnomah Co.  
Libraries - 20,000 flyers for 16 branches and posters.

Clackamas Co.  
Libraries - 20,000 flyers for 14 branches.

Clackamas Co. - 200 flyers for Court House.

Clackamas Co.  
Fire Districts - 20,000 for stations.

Washington Co.  
Libraries - 15,000 for distribution to 11 libraries and posters.

Association of  
Nurserymen - 7,000 flyers distributed to nine nurseries.

Zoo - 19,000 distributed to patrons.

Multnomah Co.  
Fire District - 1,000 flyers for ten stations and posters.

St. Johns  
Landfill - 1,000 flyers.

Washington Co.  
Haulers - 20,000 flyers.

Cloudburst  
Recycling - 1,000 flyers.

League of  
Women Voters - Article in newsletter.

McDonalds - Listed on calendar placemat.

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TABLE 3

SURVEY OF LOADS BROUGHT BY THE PUBLIC TO  
ST. JOHNS LANDFILL ON JUNE 20-30, 1981

Date	Cubic Yards Received	Material Received
June 20-22	167 55 846	Clean Woody Waste Contaminated Woody Waste Total-Mixed Loads
June 23-27	46 40 1,400	Clean Woody Waste Contaminated Woody Waste Total-Mixed Loads
June 28-30	41 24 643	Clean Woody Waste Contaminated Woody Waste Total-Mixed Loads

8.7 percent of the total yards brought by the public to St. Johns Landfill from June 20-30 was clean woody waste.

4.0 percent of the total yards brought by the public to St. Johns Landfill from June 20-30 was contaminated woody waste.

12.7 percent of the total yards brought by the public to St. Johns Landfill from June 20-30 was either clean or contaminated woody waste.

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TABLE 4

## EXPENSE/REVENUE SUMMARY FOR CLEAN-UP WEEK\*

	<u>Expenses</u>	<u>Revenues</u>
A. Planning and Organization <sup>1)</sup>	\$ --	\$ --
B. Public Education Campaign	5,638.16	--
C. Promotional Campaign	6,859.94	--
D. Promotional Campaign	3,040.94	--
E. Clean-up preparation	5,540.55	1,604.00
F. Processing (estimate)	36,177.85	--
G. Marketing	390.00	475.00
H. Evaluation <sup>1)</sup>	--	--
I. Final Evaluation	--	--
1) Salaries/Fringe/O.H.	34,775.78	--
TOTAL	\$92,422.40	\$2,079.00

\*Un-audited costs 8/18/81

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PHASE II

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## Appendix

The Appendix is under a separate cover.

I-1 Brochure

II-1 Phase II Program

II-2 By-Laws of Steering Committee and Minutes

II-3 Request for Proposals

II-4 Advertisement for RFP

II-5 Marshall Associated Contractors, Inc. Proposal

II-6 Waste By-Products Proposal

II-7 Council Ordinance on Rate Change

II-8 Letter from McFarlane to Metro  
(dated November 23, 1981)

II-9 Promotion and Education Program/  
News Clippings

II-10 Oregon City Newsletter

II-11 Lake Oswego Newsletter (Notice)

II-12 West Linn Newsletter

October 23, 1981 - February 28, 1982

### PROJECT DESCRIPTION

The results of the Phase I demonstration were used to develop the work program for Phase II (Appendix II-1). The following issues were addressed in Phase II:

- Expand list of yard debris materials to be collected, processed and marketed.
- Increase the duration of the demonstration Phase beyond one week.
- Investigate further mechanical processes to handle the mixed debris.
- Conduct an expanded educational and promotional campaign.
- Develop local processing sites.
- Demonstrate various collection alternatives in conjunction with processing alternatives.
- Determine economic/marketing factors relating to products.
- Supply other information to be used in the design of a long-term program.
- Expand role of Yard Debris Steering Committee.

The Phase II Work Plan called for the processing of mixed yard debris (woody waste, leaves, grass clippings, etc.). A Request for Proposals (Appendix II-3) was publically advertised (Appendix II-4) and sent to several possible processors and markets. The format of the RFP was similar to that used in Phase I. Bids called for specific work tasks to deal with mixed yard debris. Task 1 called for the cost to mobilize/demobilize the equipment and personnel; Task 2 called for volume reduction/processing of stockpiled waste received at a designated storage site. Task 3 called for marketing and sale of product. Task 4 called for loading and transfer of the product to market. Two responsive proposals and one non-responsive proposal were submitted. Marshall Associated Contractors and Waste By-Products (Appendices II-5 and II-6) submitted the responsive proposals. Shredding Systems submitted a proposal without the Bid Bond. The Waste By-Products proposal was accepted by the Steering Committee because:

- lowest bidder
- offered to market the product
- willingness to experiment
- looked forward to participating in an ongoing program.

Due to the uncertainty of the mixed yard debris processing equipment and the processed material's suitability for marketing, only one site, St. Johns Landfill, was originally proposed to be used for Phase II. The preliminary duration for Phase II was October 23, 1981 to January 3, 1982. This date was later extended until February 28, 1982. The reduced disposal fee for private vehicles of \$1.00/car, \$2.00/pickup truck or trailer (for first 2 1/2 cubic yards) remained unchanged from Phase I (Appendix II-7). The commercial and institutional disposal fee remained at 50¢/cu yd for noncompacted and \$1.00/cu yd for compacted material.

During the Phase I market survey, McFarlane's Bark, Inc. on Highway 224 in Clackamas appeared as a possible receiving site. They were already taking yard waste from landscapers and citizens, and composting the material for use as a soil additive. McFarlane's agreed to participate in Metro's program (Appendix II-8). Figure 1 shows the receiving center locations.

### Receiving Center Locations

Figure 1

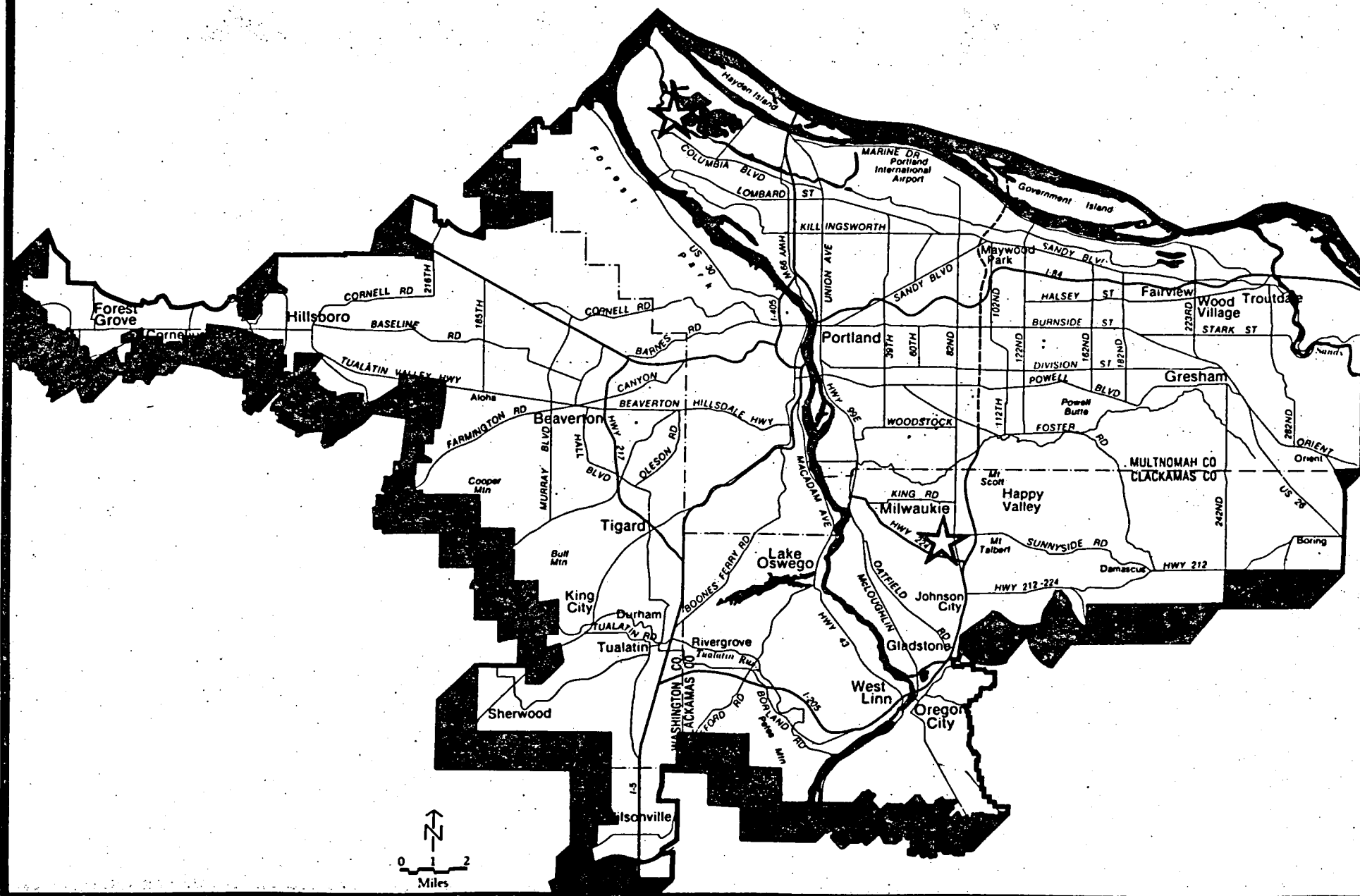


TABLE 1

SURVEY RESULTS

## YARD DEBRIS DEMONSTRATION PROJECT

A PROJECT TO RECYCLE YARD WASTE INTO A PRODUCT. SPONSORED BY  
THE METROPOLITAN SERVICE DISTRICT (METRO) IN COOPERATION WITH  
McFARLANE BARK, INC.

		St. Johns		McFarlane	
		<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
1.	Did you burn yard debris during the spring or fall burn season before May, 1981?	<u>13</u>	<u>46</u>	<u>12</u>	<u>15</u>
2.	If no, how did you get rid of it?				
a.	Haul to landfill	<u>32</u>	—	<u>14</u>	
b.	Pick up as garbage	<u>2</u>	—	<u>3</u>	
c.	Compost	<u>2</u>	—	<u>3</u>	
d.	Other	<u>6</u>	—	<u>2</u>	
3.	Do you support the Department of Environmental Quality ban on backyard burning if this program continues?	<u>33</u>	<u>20</u>	<u>12</u>	<u>15</u>
4.	If you could not burn, would you pay for curb-side pick up?	<u>19</u>	<u>39</u>	<u>7</u>	<u>17</u>
5.	Where did you hear about this program?				
a.	Radio	<u>14</u>	—	<u>6</u>	
b.	Newspaper	<u>8</u>	—	<u>2</u>	
c.	Neighbor	<u>1</u>	—	<u>1</u>	
d.	Newsletter	<u>0</u>	—	<u>1</u>	
e.	Other	<u>36</u>	—	<u>8</u>	
6.	How far do you live (miles) _____				
	0 - 4	<u>22</u>		<u>13</u>	
	where (area) _____				
	5 - 9	<u>17</u>		<u>6</u>	
	10 - 19	<u>15</u>		<u>5</u>	
	20+	<u>3</u>		<u>1</u>	

THANK YOU

59  
responses27  
responses50%  
commercial

## PUBLIC EDUCATION AND PROMOTION

An education and promotion program was designed in October to advertise the type of material to be collected; time and dates of collection; and places where material would be accepted. Promotion relied heavily on a rigorous radio campaign consisting of 117 spots on four radio stations during the first three weeks of the project (Appendix II-9). Also, press releases on a weekly basis, giving an actual update of the participation by citizens and amount of material collected, continued throughout the project. Newspaper ads were also placed in all regional and local papers.

Education and promotion activities relied heavily on feedback from Metro's Recycling Switchboard. Metro's Recycling Switchboard staff continued to promote the program by sending mailers of the updated and expanded Yard Debris Health Kit and composting information.

Promotion and education strategies for individual collection alternatives were handled by each jurisdiction who participated in the project. Metro, in cooperation with the local jurisdiction and/or the private company, advertised in flyers sent out in water bills, community newsletters and local newspapers.

During Phase II, the Recycling Switchboard staff received numerous calls from citizens requesting yard debris. The rate of calls coincided with the increased promotion/publicity of the project.

	No. of Yard Debris Calls	Total Calls	%
October	58	1,287	5%
November	204	1,477	14%
December	46 (plus 39 Xmas trees)	1,326	6%
January	15	1,220	1%
February	26	1,168	2%

A survey was taken in mid-November at both St. Johns Landfill and McFarlane's. The results in Table 1 show that most people surveyed did not burn and most normally took the yard debris to landfills. Most people surveyed at St. Johns supported a ban on burning while McFarlane's users leaned toward opposing a ban. (50 percent of those surveyed at McFarlane's represented commercial interests). Also, most opposed paying for curbside pick-up of yard debris.



## COLLECTION ALTERNATIVES

In Phase II an attempt was made to demonstrate different types of collection alternatives for collecting yard debris and hauling to processors. Oregon City, West Linn and Lake Oswego's street crews and commercial garbage haulers offered to demonstrate collection alternatives using McFarlane's Bark, Inc. as a receiving site. Although the City of Portland was under contract with Metro to demonstrate a collection alternative, the City was unable to participate in this phase because of lack of staffing. The contract was extended to demonstrate their alternative in Spring 1982 (Phase III). (The City will be using St. Johns Landfill or McFarlane's Bark as receiving sites.) The collection alternatives demonstrated in Phase II were to produce economic and technical information to be used by other local jurisdictions who may be interested in conducting yard debris collection programs.

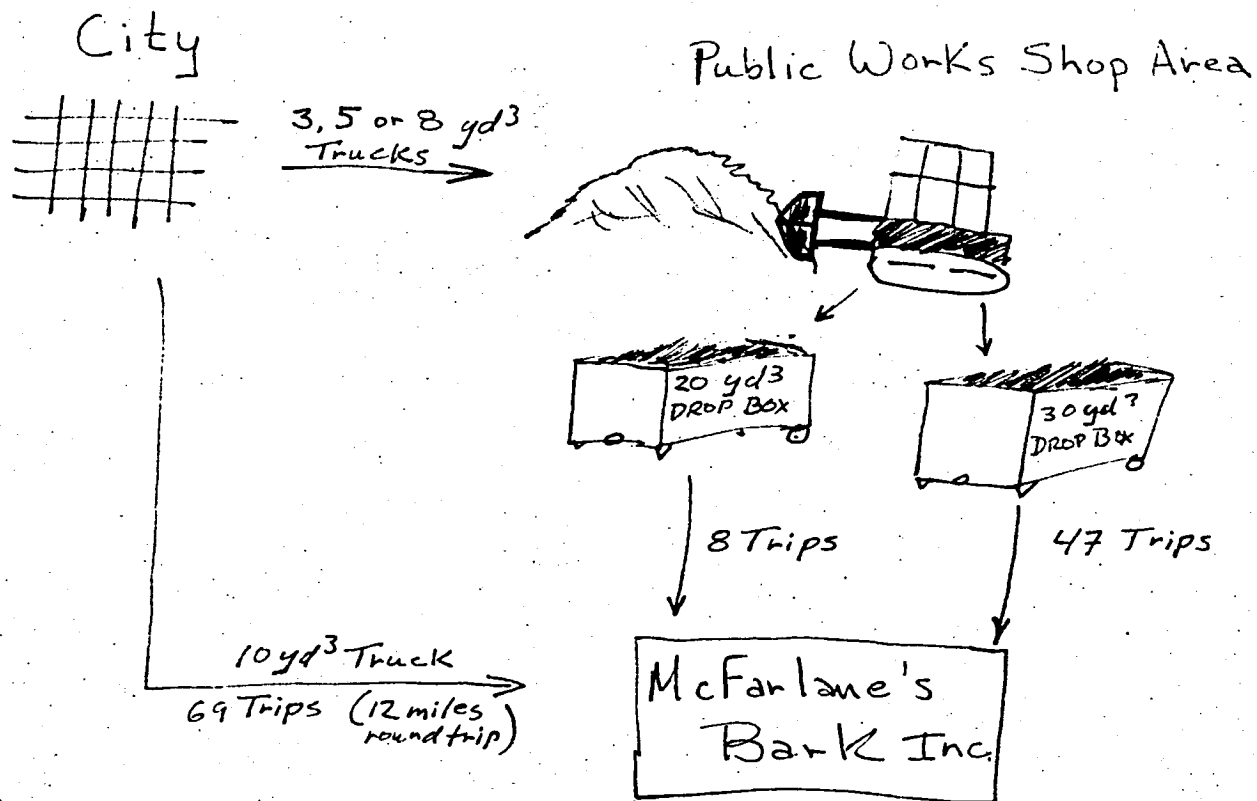
This section contains three case studies:

- Case Study 1: Oregon City, City-wide Curbside Collection
- Case Study 2: Lake Oswego, On-Call Collection
- Case Study 3: West Linn, On-Call Collection

Each case study contains information on collection procedures, level of participation, quantities of yard debris collected and costs.

### Case Study 1: Oregon City, City-wide Curbside Collection

From November 15 through December 14, every household in Oregon City was offered the opportunity of having their yard debris picked up at the curbside for free. The program was promoted through a monthly newsletter sent out with the water bills to 4,260 residents (Appendix II-10). The City Street Department supplied the equipment and labor to do the work. A back-hoe (with front-end loader) with an operator traveled with either a five, eight or a 10 cubic yard truck and driver to systematically cover every street in the City (55 street miles). The smaller trucks were loaded using the front-end loader. When full, the small trucks would travel to the Public Works Shop Area and unload the material. A small crawler dozer with a clam bucket would load and compact the material into 30 cubic yard drop boxes for transport to McFarlane's. The 10 cubic yard truck would unload directly at McFarlane's Bark. The truck loading would be staggered so at least one truck was travelling with the loader at all times. The City personnel (three drivers and one equipment operator) acted as both a ground crew and hauler crew during pick-up. Drivers from the Oregon City Garbage Company were available on an on-call basis to take drop boxes from the Shop Area to McFarlane's Bark (Figure 2). All work occurred during regular working hours (40 hours per week). The windstorm which occurred November 13-14 increased the amount of yard debris collected.



2-41



## Results from Case Study 1

### Labor:

3 drivers (not including on-call drop box drivers)  
1 equipment operator

### Equipment:

3-4 trucks (3-5, 8, 10 cubic yard capacity)  
1 back-hoe with loader  
1 crawler dozer with clam bucket  
Drop Boxes (20, 30 cubic yard capacity)

### Quantity of Yard Debris Collected:

47 loads @ 30 cubic yards	=	1,410	
8 loads @ 20 cubic yards	=	160	
69 loads @ 10 cubic yards	=	690	
	Subtotal	2,260	
	Total	2,285	(includes 25 cubic yards left at Shop Area after project completed.)

### Participation Rate: (Oregon City Official Estimates):

80% of 4,260 residents = 3,480 residences

### Cost:

Labor: 610 man hours	\$ 5,605.84
Equipment: 639.5 hours	8,549.00
Transportation:	
47 loads @ 30 cubic yards @ \$90	4,230.00
8 loads @ 20 cubic yards @ \$60	480.00
69 loads @ \$1 per mi. 12 mi. route	828.00
Disposal: (at McFarlanes Bark)	<u>1,125.00</u>
Total	\$20,817.84

The cost of this project if spread over the City would be \$4.89 per residence. This cost does not include administrative or promotion costs which were not submitted by Oregon City.

## Case Study 2: Lake Oswego, On-Call Collection (Franchised)

Rossmann's Sanitary Service collected yard debris during the weeks of November 18 through December 3, 1981 and January 4 through January 14, 1982.

First Collection: The City of Lake Oswego sent out 12,000 notices (Appendix II-11) publicizing the program and 55 customers called to participate. Notices were placed in a local monthly newsletter, in the water bills and local newspaper. (The windstorm which occurred before the week presented problems. Many customers calling in for information about the program wanted their debris hauled at the usual extra hauling rate. The storm caused so much debris they did not want to wait for the program pick-up day in their area and did not wish to prepare the material correctly. Many callers thought the program was initiated because of the storm.)

When customers called for service, their location was plotted on a map and they were told to have the material out on a certain day. The two-person crew which was thought to be needed to load a drop box truck and a large packer truck was reduced to a one-person crew with a small rear-loading packer truck. Approximately one-third of the city street miles were traveled (22 route miles out of 67 street miles).

### Results from Case Study 2 (First Collection)

#### Labor:

1 driver On-route 10-1/2 hours  
Route to McFarlane's 4 hours

#### Equipment:

1 small rear-loading packer truck (10 cubic yards)  
2-3:1 compacting ratio

#### Quantity of Yard Debris Collected:

98 loose cubic yards or 48 cubic yards compacted

#### Participation Rate:

55 Customers responded out of 12,000 possible

#### Mileage:

22 route miles travelled out of 67 street miles in Lake Oswego.

110 miles travelled to McFarlane's or five trips at approximately 20 miles per round trip.

Cost:

Labor:	\$299.98
Transportation:	
Fuel	65.90
Hauling (22 route miles + 110 to disposal)	46.20
PUC	1.63
Disposal: (48 cubic yards)	<u>29.00</u>
Total	<u>\$441.01</u>
Revenue from Customers	\$294.00
Net Loss	(\$147.01)

Second Week: The second week pick up was not as successful as the first week because a snowfall occurred just before the scheduled days of pick up and it was felt that many people did not want to bother with putting the material out. Of the 12,000 possible participants, only 21 called to request service. The procedure was the same as in the first week which included a small packer truck with one driver.

Results from Case Study 2 (Second Collection)

Labor:

1 driver (5-3/4 hours)

Equipment:

1 small rear-loading packer truck (8 cubic yards)

Quantity of Yard Debris Collected:

34 loose cubic yards or 8 compacted cubic yards

Participation Rate:

21 Customers responded out of a possible 12,000

Mileage:

77 total miles.

Cost:

Labor:	\$100.05
Transportation:	
Fuel	26.16
Hauling (77 miles @ 35¢ per mile)	26.95

Disposal: (8 cubic yards @ \$1.00 per cubic yard)	<u>8.00</u>
Total	\$161.16
Revenue from Customers	\$102.00
Net Loss	(\$59.16)

It was estimated that if all water service customers received this service, that costs would be approximately \$4.75 per cubic yard. (As a result of the publicity for this project, a homeowners association consisting of 130 homeowners in Lake Oswego requested Rossman's Sanitary Service to pick up yard waste every six weeks. The association is billed for this service.)

### Case Study 3: West Linn, On-Call Collection

During the week of November 30 through December 4, 1981 the Public Works Department offered yard debris collection on an 'on-call' basis to 4,360 residences. The project was advertised in the local newspaper and notices were placed in a newsletter which went out with the water bills (Appendix II-12). Citizens who wanted the service called Public Works and gave their addresses. A route was mapped in an orderly manner to service all the callers. Citizens were instructed to stack the debris in a neat pile at the curb. Two crews each with a pick up truck, dump truck and back-hoe (with front-end loader) were deployed in the morning and worked normal working hours. Trucks were loaded with yard waste and then hauled to McFarlane's Bark.

#### Results from Case Study 3

##### Labor:

4 drivers

##### Equipment:

2 back hoes (with loaders)  
2 dump trucks  
2 pick-up trucks

##### Quantity of Yard Debris Collected:

690 cubic yards (86 trips)

##### Participation Rate:

177 residences out of a possible 4,360

##### Cost:

Labor and Equipment:	\$8,902.45
Disposal:	<u>328.50</u>
Total	\$9,230.95

## PROCESSING ALTERNATIVES

In Phase II, two processing techniques were demonstrated at two locations. McFarlane's Bark operates a permanent receiving/processing center in the southern part of the Metro region. Metro operated a temporary processing operation at the St. Johns Landfill. Each of these operations will be described as case studies.

### Case Study 4: Processing at St. Johns Landfill

**Background:** The St. Johns Landfill is located at 9363 N. Columbia Boulevard in North Portland. The facility is owned by the City of Portland and managed by Metro. Metro subcontracts the landfill operation to Easley Brassy/Genstar. This operation includes handling public and commercial vehicles. Public vehicles dump garbage into 30 cubic yard drop boxes in the public unloading area and the commercial trucks dump at the work-face of the landfill. After paying the disposal fees, public vehicles have an opportunity to unload source separated recyclables into drop boxes which are located along the access road to the public dumping area. When the public unloads garbage in the unloading area, a front-end loader tamps the material in the drop boxes before a rail truck hauls the boxes to the landfill.

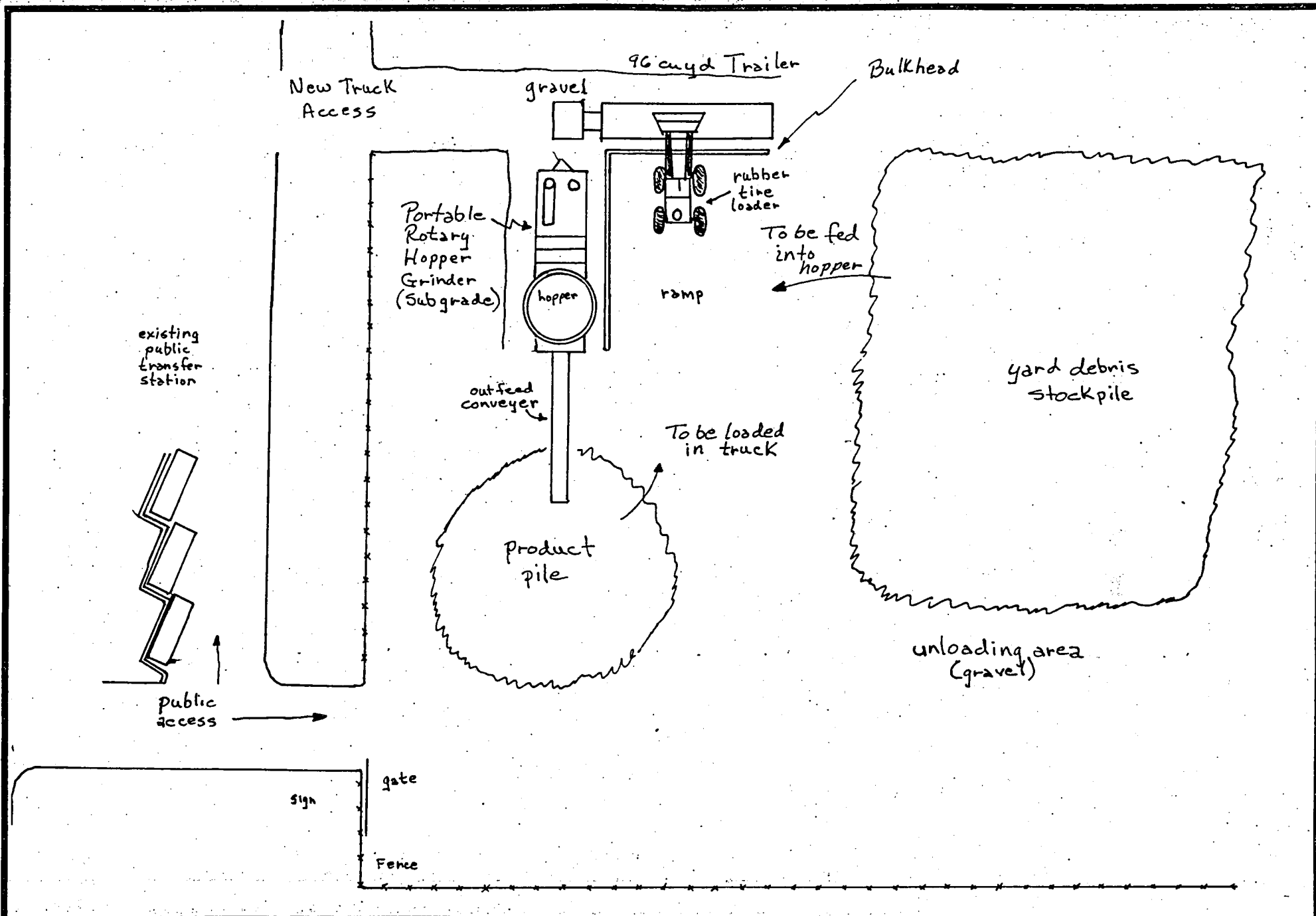
The St. Johns Landfill was selected for the Phase II demonstration because:

- suitable storage area was available;
- the site could be used without obtaining any permits or new agreements;
- Metro would have better control of the traffic within the site;
- site improvements would be minimal;
- large quantities of yard debris could be easily diverted.

**Site Preparation:** The yard debris storage and processing was designated in the old sludge storage area behind the public transfer station. Sludge was removed and the 3-1/2 acre area was graded. New gravel was placed in the 200-foot by 100-foot unloading area. Two old flat bed trailers were used as the bulkhead for a 25-foot by 35-foot landing ramp. Also, a new entry and an access road was built to keep the processing equipment and chip truck traffic away from the private vehicular traffic. The site preparation work was performed by Genstar. Figure 3 contains the site plan.

**Operating Procedures:** Public, commercial and institutional vehicles brought all kinds of yard debris to the landfill. All vehicles passed the gatehouse where the attendant inspected the loads and determined whether most or all of the load was yard debris. The gatehouse attendant estimated the volumes of the yard debris material in the load, collected the fee and





directed the participants to the yard debris unloading area. Traffic control signs directed traffic to the unloading area. While cars and trucks unloaded, a spotter would control traffic and inspect the loads for contamination. At the outset of the project, a spotter was on-site all the time the landfill was open to the public. This was reduced to five days per week as flows decreased in the winter months. At the end of each day, Genstar's equipment would push the yard debris into the stockpile so there would be room for unloading the following day.

Processing was accomplished according to the proposal submitted by Waste By-Products. The Medallion Rotary Hopper Grinder Model 910 (Figure 4) was used for the demonstration at St. Johns Landfill. It took one day for mobilization and set-up. A front-end loader with a large modified bucket loaded the large rotary hopper of the grinder with yard debris.

The revolving hopper is hydraulically governed and controlled to the speed of the main cutting rotor so that as the rpm of the rotor decreases in heavy grinding, the hopper slows down or stops until normal rotor grinding rpm is resumed. The unit has its own 400 horse-power diesel motor and outfeed conveyor, landing gear, and trailer hitch, and thus is completely self-contained and portable. This machine can process various waste materials from wood pallets and plywood to agricultural wastes and forest industry yard wastes and slash. The multi-purpose landing, served two purposes: 1) feeding the grinder; and 2) loading the finished product into the fuel transport trailers.

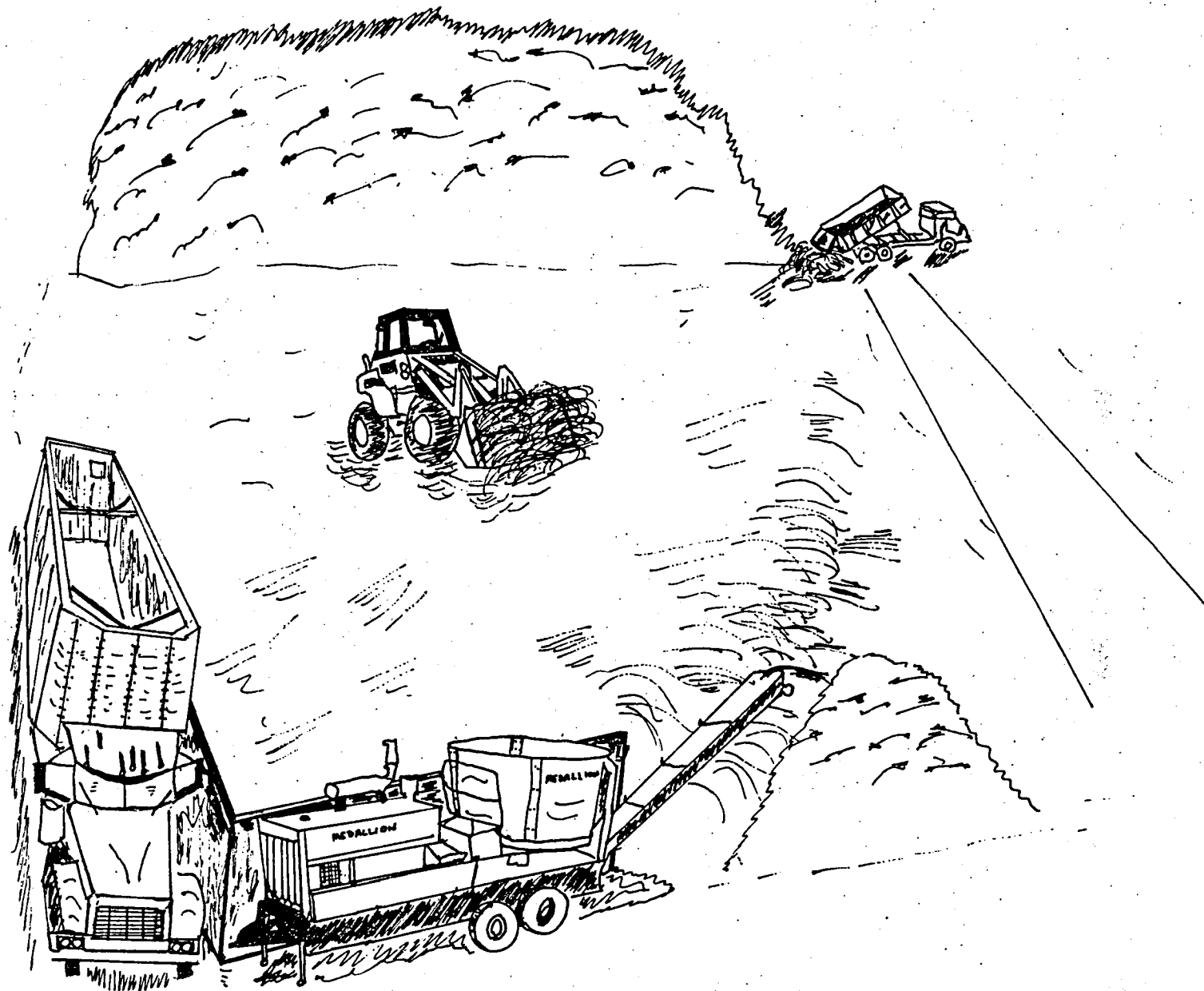
Loading of the truck with finished product and loading of the rotary hopper with yard debris was supposed to occur at the same time. However, the hopper feed and truck loading operation was conducted in two steps to reduce the truck loading time. Enough finished product was stockpiled to load a truck as fast as possible. One fuel trailer (100 cubic yard) could be loaded in approximately an hour. Product loading was the responsibility of the processor.

Waste By-Products requested an extension of its contract to April 15 because of extremely wet weather conditions and mud and foreign debris contamination which significantly hampered processing and clean-up of the St. Johns' site. Material was processed in February, March and April 1982.

#### Results from Case Study 4

##### Labor:

- 1 loader operator
- 1 truck driver
- 1 equipment operator
- 1 spotter



Equipment:

Model 910 Medallion Grinder Unit  
Case W14 loader (with modified bucket)  
Fuel Tractor/Trailer

Quantity of Yard Debris Processed and Participation:

8794 cubic yard from 287 commercial/institutional  
users and 2721 citizen users in 19  
weeks.

Cost:

Site Preparation	\$13,322.00
Processing (Table 2)	9,956.00
Stockpiling/Spotting/Misc (Table 3)	<u>16,248.23</u>
Subtotal	<u>\$39,526.23</u>
Revenues from Fees (Table 4)	\$ 7,952.50
Revenues from Fuel (est.)	3,000.00
Total Cost	\$28,573.73

Problems---Controls:

- Some citizens who participated could not find the yard debris storage area---Traffic control devices (signs and arrows) were displayed.
- Contamination of yard debris occurred. Rock and metals were difficult for spotters to detect---Thorough inspection of material by the spotter seven days per week instead of five days per week. Signs were posted to instruct the users on which material is acceptable.
- The grinder threw material 20-30 feet into the air at times---A 25-foot high screen was constructed between the grinder and the public transfer station.
- Stockpiled material became wet and contaminated with rocks, mud and sludge. Yard debris which was contaminated with mud or allowed to be stockpiled over a long period of time increases processing costs and loses value as a hog fuel---Processing was delayed so mud would dry. Processor worked with Genstar to train loader operator to leave out dirt and rock when skimming ground surface (while stockpiling). A dozer blade with rake-like teeth was developed. Processing was more effective when stockpiles are small. Receiving and stockpile area should be paved.

TABLE 2

Case Study 4St. Johns Processing Data

Reduction ratio: 80 percent reduction from as received to stockpiled approximately 4 to 1

Amount of finer product: 10 percent (three inch screens) (depends on time in stockpile)

Amount of courser product: 90 percent.

Time to process material: 185 loose wet yards per hour in a wet, muddy, contaminated form, including rocks.

Economics: (21 days/month, 168 hours/month)

A. Operations (Processing only)

Grinder	\$ 25.00
Screen replacement	5.00
Helper	10.00
Hammers	14.50
Fuel	10.00
Maintenance	25.00
Loader/Operator	50.00
Additional Equipment	50.00
Administrative	21.50
Total Operating Cost per Hour	<u>\$211.00</u>

B. Projected Income

Fuel	\$ 62.50
Disposal Fee (\$1.00 per loose cubic yard)	185.00
Total Projected Income	<u>\$247.50</u>

C. Profit (Loss) \$36.50

Cost of transporting: Provided by fuel user.

Sale price of material: \$15-\$25 per bone dry unit, depending on quality, i.e., minimal inerts from mud, rock and/or metal contamination. (one unit = 7.5 cu yd)

Market: Willamette Industries is sole user and marketer of the fuel product.

TABLE 3

## Case Study 4

Labor and Equipment Costs at St. Johns Landfill

Spotter	October 23 - 31	60 hrs. @ \$8.50	\$510.00
CAT 966	October 29	1 hr. @ \$70.00	\$140.00
Rental	October 31	1 hr.	
November 1 - 30			
Spotter		243 hrs. @ \$10.80	\$2,623.90
Loader		23 hrs. @ \$56.00	\$1,288.00
Operator		23 hrs. @ \$15.24	\$350.52
Welder		4 hrs. @ \$25.40	\$101.60
December 1 - 31			
Spotter		189 hrs. @ \$10.80	\$2,041.20
Loader		21 hrs. @ \$56.00	\$1,176.00
Operator		21 hrs. @ \$15.24	\$320.04
Welder		1 hr. @ \$25.40	\$25.40
Welder Helper		1 hr. @ \$10.80	\$10.80
Loader		2 hrs. @ \$56.00	\$112.00
Operator		2 hrs. @ \$15.24	\$30.48
January 1 - 31			
Spotter		207 hrs. @ \$11.82	\$2,446.74
Loader		16 hrs. @ \$56.00	\$896.00
Operator		16 hrs. @ \$16.69	\$267.04
February 1 - 31			
Spotter		180 hrs. @ \$11.82	\$2,127.60
Loader		24.5 hrs. @ \$56.00	\$1,372.00
Operator		24.5 hrs. @ \$16.69	\$408.91
TOTAL			<u>\$16,248.23</u>

TABLE 4

Case Study 4: St. Johns LandfillRevenue From Fees

<u>Month</u>	<u>Public</u>	<u>Commerical</u>	<u>Total</u>
October 1981	\$ 856.00	\$ 17.00	\$ 873.00
November	3,104.00	296.00	3,400.00
December	1,255.00	166.50	1,421.50
January 1982	662.00	129.00	791.00
February	1,154.00	313.00	1,467.00

TABLE 5

WEEKLY PARTICIPATION RATE

Case Study 4:  
St. Johns

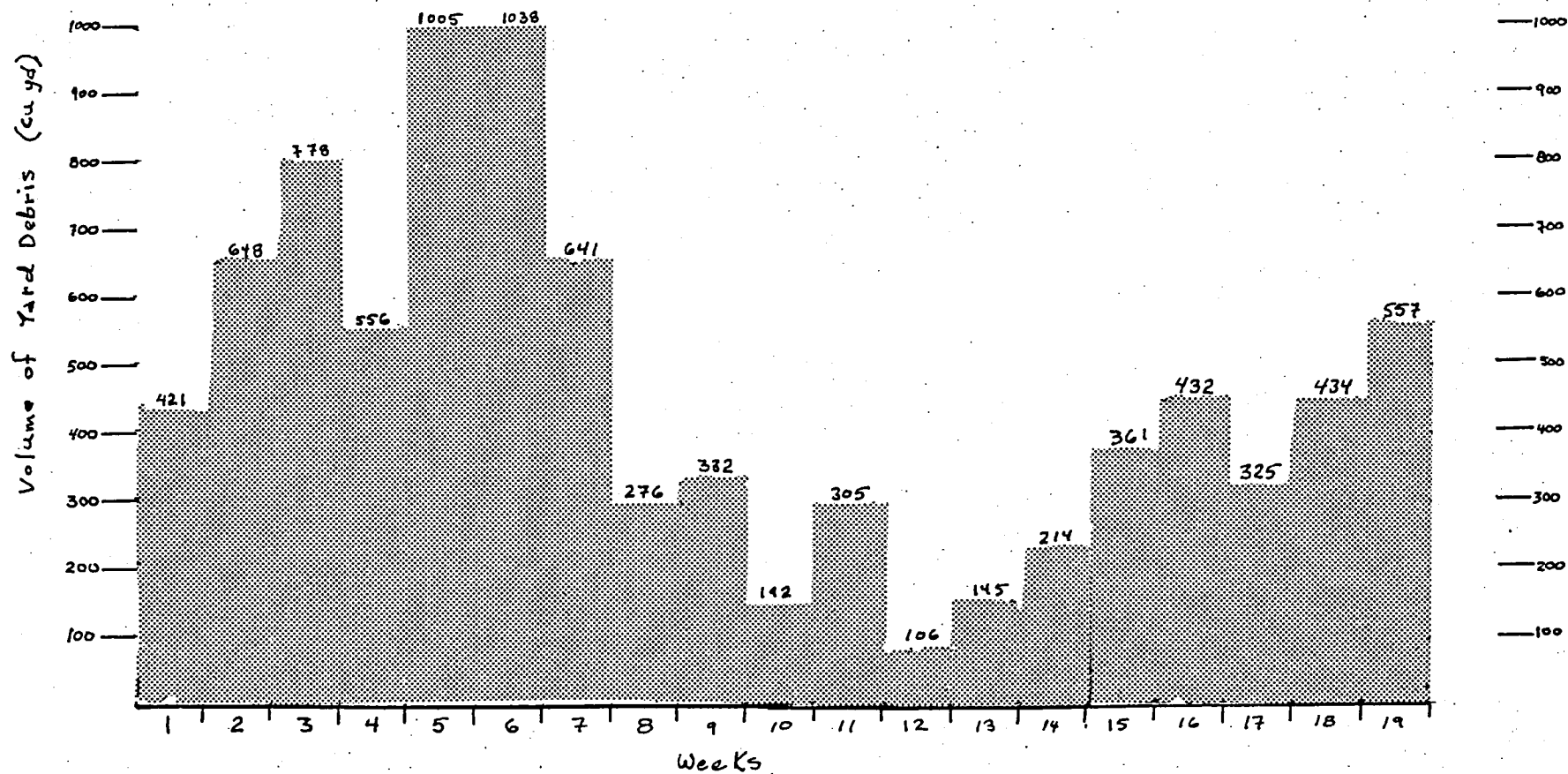
Case Study 5:  
McFarlane's

<u>For Week</u> <u>Ending:</u>	<u>Commerical</u>	<u>Private</u>	<u>Total</u>	<u>Commerical</u>	<u>Private</u>	<u>Total</u>	<u>Weekly</u> <u>Totals</u>
Oct 25th	13	72	85	9	22	31	116
Nov 1st	--	209	209	47	68	115	324
8th	4	252	256	71	65	136	392
15th	9	203	212	77	55	132	344
22nd	26	254	280	214	218	432	712
29th	30	376	406	120	124	244	650
Dec 6th	26	171	197	201	35	236	433
13th	7	114	121	184	53	237	358
20th	16	141	157	81	45	120	283
27th	7	90	97	42	10	52	149
Jan 3rd	4 ±	63	67	33	64	97	164
10th	8	26	34	12	20	32	66
17th	5	43	48	68	23	91	139
24th	15	52	67	50	23	73	140
31st	22	116	138	69	66	135	273
Feb 7th	17	124	141	74	46	120	261
14th	27	102	129	73	70	143	272
21st	29	152	181	44	33	77	258
28th	22	161	183	80	60	140	323
19 Weeks Phase II	287	2721	3008	1549	1100	2649	5657

WC:pp  
10/27/82



2-56



Phase II

Case Study 4 : Yard Debris Received at St. Johns Landfill

Table 6

Marketing:

Waste By-Products was responsible for securing the market for the product. The market or end user for the hog fuel product was Willamette Industries Paper Group. They were responsible for product transfer. The processor or market did not propose to pay Metro for the material because of unknowns relating to equipment performance and product quality and quantity. The market had capacity to receive in excess of 30,000 tons annually of the hog fuel product. The fines (undersized material) were not marketed.

### Case Study 5: Processing at McFarlane's Bark, Inc.

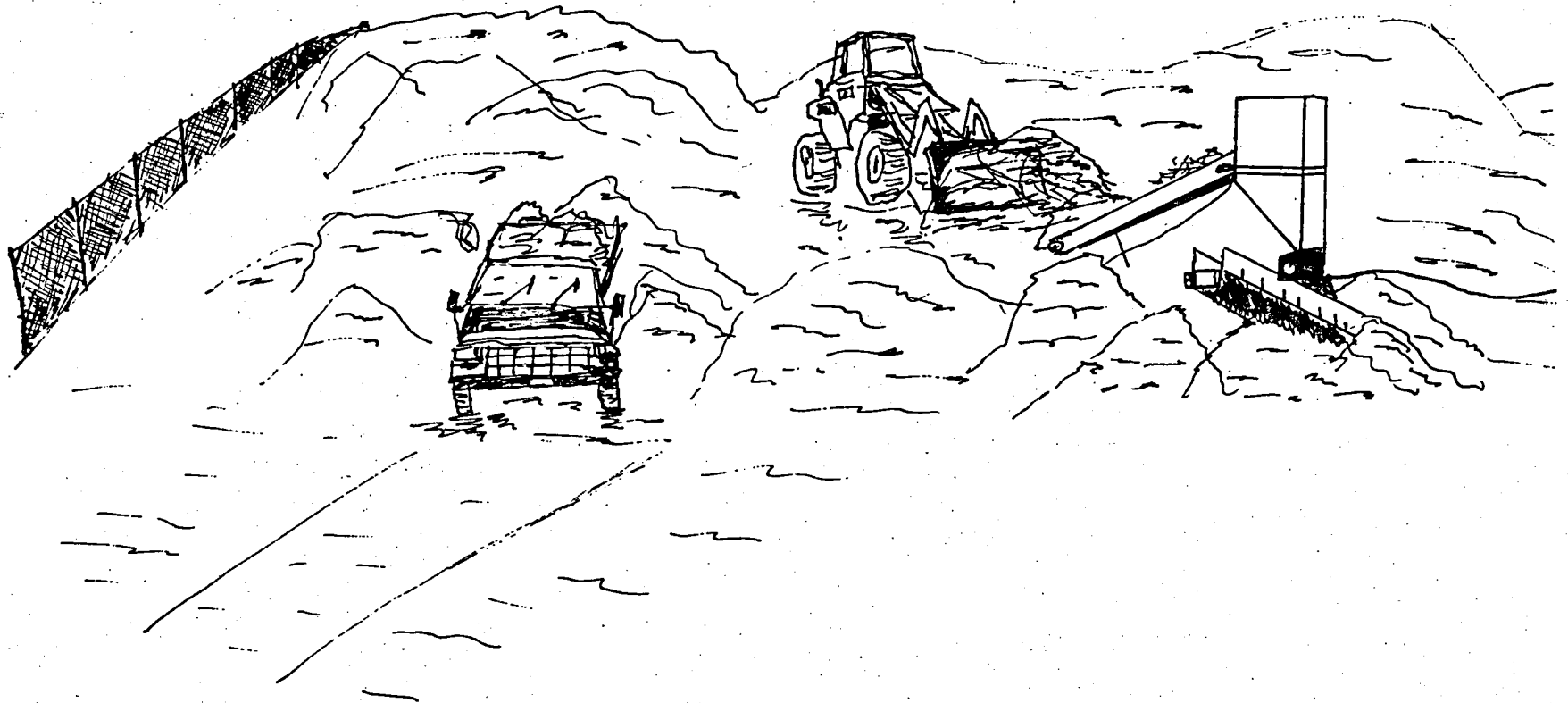
Background: McFarlane's Bark, Inc. is located at 13345 S.E. Johnson Road off Oregon State Highway 224 in Clackamas. The family owned and operated company processes wood into decorative bark and potting mulch. The entire site is six acres. In the past, landscapers were allowed to dump their yard waste for free when they backhauled with bark chips or other products. The public also were allowed to unload yard debris. McFarlane's was selected to participate in the demonstration project because:

- site was centrally located to service the southern portion of the Metro region;
- the Steering Committee wanted to try a site which was not a landfill;
- site improvements minimal;
- private sector participation;
- process produced soil amendment;
- firm, had receiving, processing, bagging and marketing capabilities.

Site Preparation: For this project McFarlane's purchased a hammermill and conveyor previously used in a lumber operation. The equipment had to be installed and started up. In addition, the following improvements were made:

- regravel/oil existing access road;
- construct toll booth;
- install gate and fence;
- install signage on highway and on-site;
- expand water system, fire and dust control capability.

Operating Procedures: Loads of yard debris brought by landscapers and private citizens were brought to the site seven days a week--weekdays and Saturday from 8:00 a.m. to 6:00 p.m., and 10:00 a.m. to 4:00 p.m. on Sunday. The customers entered the office, and, prior to dumping the load, paid \$2.00 for the first two yards and 50¢ for each additional load. Senior citizens received 50 percent fee discount. The office personnel would direct the customers to the unloading area. There was at least one person to supervise unloading and check for contamination at all times. The material was then loaded onto a conveyor using a front-end loader with a modified bucket. The yard debris then falls into a 40 to 60 inch opening on top of the hammermill. The hammermill's 15-20 50 pound hammers produced a three inch minus hog fuel like material. This material was stockpiled for 21 days (to encourage composting and further volume reduction. (In this time, the piles were turned weekly to achieve uniform composting. Then the product was screened through existing screens used for old sawdust leaving a finished, marketable product. (Figure 5)



Phase II Case Study 5: Operational Schematic at McFarlane's Bark

Figure 5

## Results from Case Study 5

### Labor:

- 1 spotter
- 1 loader operator
- 1 conveyor feed
- 2 equipment operators

### Equipment:

- Portable Model 6642 B-3 Jeffrey Hog Grinder, powered by 400 H.P. Electric Motor, mounted on a 1955 Pierce Lowboy trailer (160 tons per day throughout capacity)
- infeed conveyor (five feet wide)
- outfeed conveyor
- Genset portable generating plant (diesel to electric)
- John Deere 644 loader with a 7-1/2 cubic yard bucket
- HD21 Fiat Allis Cat
- (Back up equipment as needed)

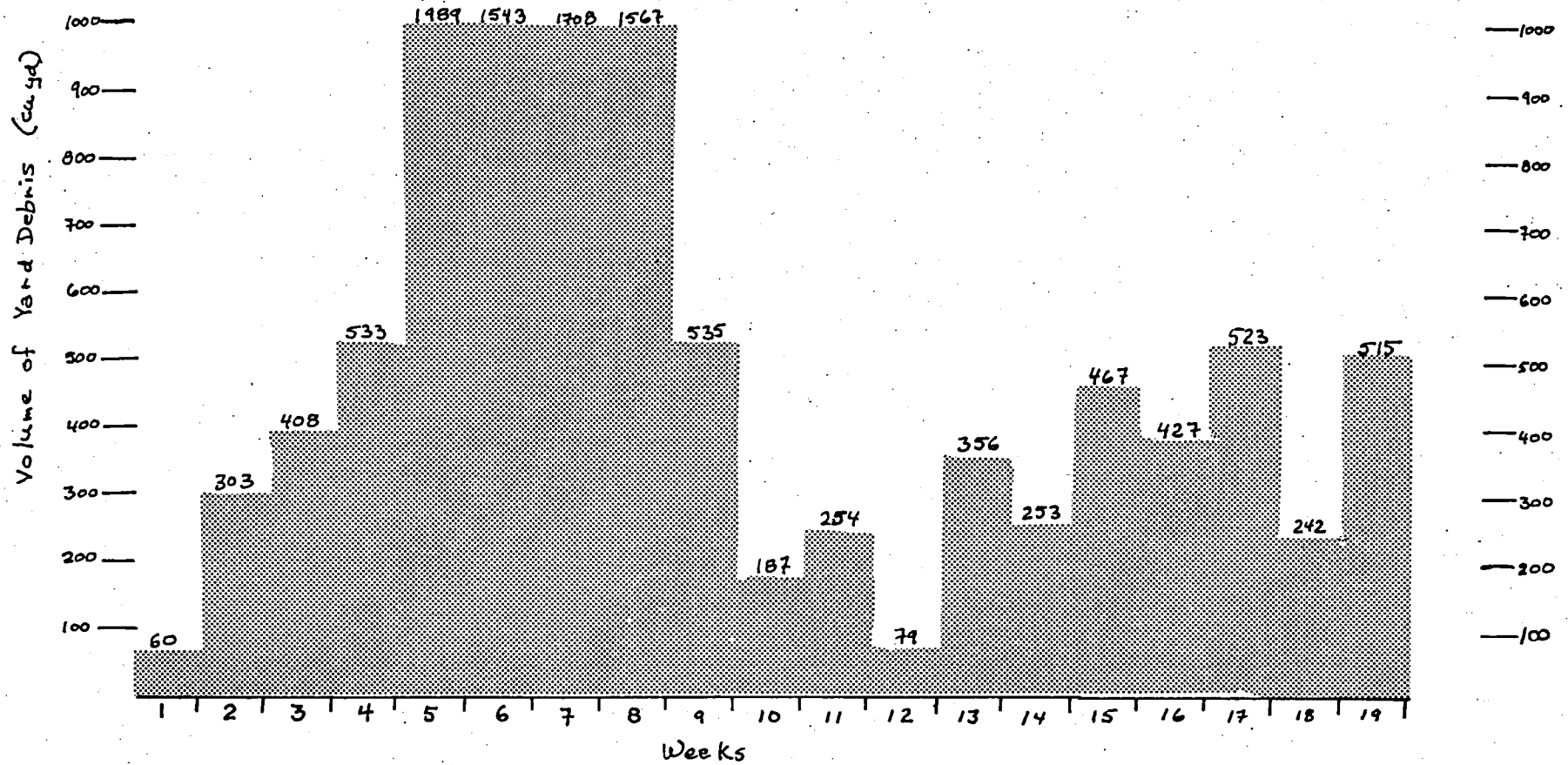
### Quantity of Yard Debris Processed and Levels of Participation: See Table F.

### Cost: (October 1981 - February 1982)

Labor	\$12,670.36
Maintenance	2,383.68
Site Preparation	6,059.06
Property Rent	1,500.00
Insurance	615.52
Diesel	760.68
Depreciation	7,188.00
	<u>\$31,177.30</u>
Income (Dump Fee)	<u>8,900.75</u>
NET LOSS	\$(22,276.55)

### Problems---Controls:

- Composting site not secure. Fear of scavaging dumping---An eight-foot fence and gate were installed on three sides of the composting area.
- Taking yard waste increases fire hazzard---Water and fire control system expanded. See Table 8.
- Access roads muddy---New gravel and black top installed.
- Participants had to park and go into office to pay---Toll booth installed near unloading area.
- People unloaded non-compostable materials with yard debris---Signs were intalled informing uses of suitable materials.
- Site is small and storage capacity of yard debris is 68,000 cubic yards---Work piles to decrease volume, and look at marketing products which have lower residence time (e.g., hog fuel).



Phase II

Case Study 5: Yard Debris Received at McFarlane's Bark

Table 7

TABLE 8

Case Study 5

McFarlane's Bark

Operational Controls<sup>1</sup>

Non-compostable Wastes: Non-compostable wastes will be handled by placement of a drop box or other container.

Odors: With supervision of dumping, a spotter will eliminate wet garbage, materials containing pathogenic organisms and other odor-causing contaminants from being dumped here. This material will be placed in a drop box and hauled away at least every seven days. Odor should not be a problem since the odor-causing garbage will be hauled away.

Drainage Control: There is an existing dike which encompasses the composting area.

Wastewater Discharge: Waste water is pumped out from a settling pond and evaporated by sprinkling. If quantity becomes too large for this method, it could be routed into existing sewer.

Access Roads: We have just recently paved Johnson Road from where it ended, 600 feet to our property. The section of road from Johnson Road to the composting area will be completed in the next few months.

Drainage: Our site is designed such that surface drainage will be diverted around or away from the operational site. The site has drain tiles and ditches around the perimeter of the waste pile to handle excess drainage.

Fire Protection: A three inch fire line with 1-1/2 inch hose connections to the composting area now exists and plans have been made to continue these lines around the property.

Fences: The composting site is closed on three sides by a ditch and the front is enclosed by a eight feet high cyclone fence with a lockable gate now in place.

Groundwater: Attached are a well-water sample test and a well log dated 1960 when the well was dug. If necessary, city water is available to our site.

---

<sup>1</sup>From DEQ Solid Waste Disposal Permit.

• Contamination occurs when unloading not supervised---A spotter was on-site at all times.

Marketing and Product Information:

The product was to be marketed to their existing customers as a comparable product to old (rotted) sawdust for which there is a high demand. Existing quantities of yard debris received are substantially below McFarlane's marketing capacities. As bark, sawdust and shavings become more scarce and expensive the market potential for the compost will increase.

McFarlane's is also investigating other possible uses:

- a. Bag product on-site and sell as potting mix.
- b. Hog fuel.
- c. Mix with existing pile of 20,000 cubic yard of dirt and sand.

As composted top soil and cattle bedding. The site size may impact the types of products. However, since sales for soil amendments and mulch are in late spring and summer, and sales for boiler fuel are in winter months, there may be enough product demand so the 68,000 cubic yard storage capacity is not exceeded.

One cubic yard of loose yard debris breaks down to 1/20 of cubic yard of product, of which, 50 percent is fine compost and 50 percent is coarse material (hog fuel). The fine material must still be tested before it can be marketed as soil compost. It is estimated that the product could be purchased for pick-up at \$7.00 per cubic yard for the fine material and \$2.70 per cubic yard for the coarse (hog fuel) material.



## PROJECT SUMMARY

### Public Education and Promotion

The publicity for Phase II included the following:

- a. production and airing of one 60-second radio spot;
- b. revision and distribution of Yard Debris Health Kit;
- c. advertisements in local papers; and
- d. five news releases.

Metro's Recycling Switchboard did have an increase of yard debris calls when the radio spots were aired during Phase II. The level of participation in local collection programs may have been hampered by the wind storm in mid-November, heavy rains in the first and second week of December and the snow in early January. There was an increasing trend in the quantities of yard debris received at both sites starting the first week of January until the end of Phase II. The highest quantities of yard debris was received in late November and early December as a result of a wind storm. (Table 9) It is difficult to determine how much of this material would have been burned during the October 1 - December 15 burn season.

In the survey conducted at St. Johns and McFarlane's, most people did not hear about the program from either radio, newspaper, neighbors or newsletters. However, of these four promotional activities a majority of people heard about the program from the radio. To encourage participation in Phase III program, the following should be done:

- a. increase radio advertising;
- b. produce public service for television and radio;
- c. promote local collection projects through radio spots; and
- d. prepare information which could be used for an ongoing program.

### Collection Alternatives

Three collection alternatives were demonstrated in three cities--Lake Oswego, West Linn, and Oregon City. West Linn and Lake Oswego and an on-call system and Oregon City had city-wide collection. West Linn and Oregon City had City employees made the collection while Lake Oswego's franchised hauler conducted the collection project.

The results of the three projects show that municipal pick-up on either a city-wide or on-call basis ranges in costs from \$9-\$14 per cu yd (loose). Oregon City cost for city-wide collection was less than \$5 per residence.

<u>City</u>	<u># of Residences</u>	<u>Project Participants</u>	<u>Quantity Collected</u>	<u>Cost</u>
Oregon City	4,260	80% (3,480)*	2,285 cu yd	\$20,817.84
Lake Oswego #1	12,000	0-1% (55)	98 cu yd	147.01**
Lake Oswego #2	12,000	0-1% (21)	34 cu yd	59.16**
West Linn	4,360	4% (177)	690 cu yd	9,230.95

\* Oregon City Estimate

\*\* Loss

Other jurisdictions with collection franchises were solicited to participate in Phase II, but no other jurisdiction responded to Metro's request.

As a result of the information from collection alternatives demonstrated in Phase II, the Steering Committee had the following recommendations:

- a. Solicit private companies and unfranchised jurisdictions to conduct yard debris collection projects where several convenient collection points would be established throughout the area for citizens to dispose of yard debris.
- b. Demonstrate a collection system in an unfranchised area using a commercial hauler.

#### Processing Alternative

Contamination of yard debris to be processed was a problem in Phase II. More contamination was experienced at St. Johns Landfill than McFarlane's Bark. The reason could be that people take all kinds of waste to a landfill for disposal and until they understand what is trying to be done, they will continue to bring in mixed loads. McFarlane's had better success in receiving clean yard debris because they seem to receive more loads from landscapers and institutional sources. Also, people may not associate McFarlane's with a dump or junk yard and, therefore, only unload vegetative waste. To deal with the contamination problem, the Steering Committee recommended that detection and/or processing alternatives be demonstrated.

In addition, there were questions on the noise levels with these processing alternatives. It was suggested that a study be conducted to determine potential impacts from noise generated from processing machinery.

WC/srb  
7074B/342

TABLE 9

QUANTITIES OF YARD DEBRIS RECEIVED<sup>1</sup>Case Study 4:  
St. JohnsCase Study 5  
McFarlane's

<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
10/23	101		24	
10/24	200		37	
10/25	120	421	9	60
10/26	116		45	
10/27	58		91	
10/28	103		60	
10/29	66		40	
10/30	70		27	
10/31	131		16	
11/1	123	668	24	303
11/2	87		60	
11/3	96		105	
11/4	65		69	
11/5	97		53	
11/6	127		60	
11/7	171		41	
11/8	135	778	20	408
11/9	147		94	
11/10	64		103	
11/11	58		80	
11/12	52		66	
11/13	52		120	
11/14	102		48	
11/15	81	556	22	533
11/16	134		369	
11/17	107		282	
11/18	131		347	
11/19	131		293	
11/20	118		370	
11/21	202		195	
11/22	182	1005	133	1989
11/23	164		472	
11/24	150		321	
11/25	161		465	
11/26	5		---	
11/27	211		165	
11/28	250		80	
11/29	97	1038	40	1543
11/30	63		261	

## Quantities of Yard Debris Received (Continued)

Page 2

Case Study 4:  
St. JohnsCase Study 5:  
McFarlane's

<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
12/1	137		408	
12/2	136		315	
12/3	68		328	
12/4	55		380	
12/5	47		14	
12/6	33	641	2	1708
12/7	61		309	
12/8	41		293	
12/9	34		475	
12/10	32		204	
12/11	26		227	
12/12	64		52	
12/13	18	276	7	1567
12/14	22		190	
12/15	36		77	
12/16	73		74	
12/17	81		84	
12/18	32		87	
12/19	54		17	
12/20	34	332	6	535
12/21	38		65	
12/22	25		55	
12/23	51		28	
12/24	17		39	
12/25	--		--	
12/26	41		--	
12/27	24	196	--	187
12/28	60		54	
12/29	78		77	
12/30	70		30	
12/31	26		22	
1/1	--		--	
1/2	53		59	
1/3	18	305	12	254
1/4	6		12	
1/5	38		6	
1/6	3		29	
1/7	20		6	
1/8	5		7	
1/9	18		13	
1/10	16	106	6	79

# Quantities of Yard Debris Received (Continued)

Page 3

## Case Study 4: St. Johns

## Case Study 5: McFarlane's

<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
1/11	6		61	
1/12	22		70	
1/13	11		56	
1/14	34		58	
1/15	37		88	
1/16	20		16	
1/17	15	145	7	356
1/18	22		24	
1/19	43		55	
1/20	49		59	
1/21	47		61	
1/22	18		26	
1/23	20		13	
1/24	15	214	15	253
1/25	94		29	
1/26	52		79	
1/27	15		62	
1/28	20		78	
1/29	47		72	
1/30	67		109	
1/31	66	361	38	467
2/1	62		69	
2/2	44		81	
2/3	130		67	
2/4	58		71	
2/5	33		70	
2/6	67		50	
2/7	38	432	19	427
2/8	26		85	
2/9	25		107	
2/10	89		86	
2/11	71		101	
2/12	84		104	
2/13	24		31	
2/14	6	325	9	523

Quantities of Yard Debris Received (Continued)

Page 4

Case Study 4:  
St. Johns

Case Study 5:  
McFarlane's

<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
2/15	122		60	
2/16	70		55	
2/17	83		31	
2/18	35		1	
2/19	51		70	
2/20	35		8	
2/21	42	438	17	242
2/22	33		58	
2/23	26		44	
2/24	131		150	
2/25	159		109	
2/26	64		57	
2/27	83		64	
2/28	<u>61</u>	557	<u>33</u>	515
Total	<u>8794</u>		<u>11939</u>	

-----  
1 Loose cubic yards

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10/27/82

Table 10

BURNING AND WEATHER CONDITIONS

Week No.	Month	Week Ending	Weather	Burning Allowed	
				Weekend	Weekdays
1	October	24-25	Fair	10/24 No 10/25 No	Half Day
2	October/November	31-1	Poor-Fair	10/31 All Day 11/1 No	5 Days
3		7-8	Good	11/7 No 11/8 No	2-1/2 Days
4		14-15	Poor	11/14 No 11/15 No	3 Days
5		21-22	Poor (Storm)	11/21 All Day 11/22 All Day	4 Days
6		28-29	Fair	11/28 No 11/29 All Day	4 Days
7	December	5-6	Poor	12/5 All Day 12/6 All Day	4 Days
8		12-13	Poor	12/12 All Day 12/13 No	1 Day
9		19-20	Poor-Fair	No	
10		26-27	Poor	No	
11	January	2-3	Poor	No	
12		9-10	Poor-Fair	No	
13		16-17	Poor-Fair	No	
14		23-24	Poor-Fair	No	
15		30-31	Fair	No	
16	February	6-7	Good	No	
17		13-14	Good	No	
18		20-21	Fair	No	
19		27-28	Poor-Fair	No	

\*Half-day is four hours or less; all day is 10 a.m. until two hours before sunset. Poor = Rain

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PHASES III & IV



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Appendix

The Appendix is under separate cover.

- III-1 Promotion and Education Information
- III-2 Waste By-Products and McFarlane's Price Lists
- III-3 Steering Committee Minutes

PHASE III March 1 - June 30, 1982 (17 weeks)

PHASE IV July 1 - September 30, 1982 (13 weeks)

### PROJECT DESCRIPTION

The questions that were to be addressed in Phases III and IV were related to collection alternatives, promotion, education and how to handle and process contaminated yard debris to ensure product integrity.

The collection case studies described in Phase II were conducted in the southern part of the region in small suburban cities. Phase III collection alternatives focused in the Portland metropolitan area and in a large suburban city. Two alternatives were clean-ups where citizens hauled their yard debris to localized receiving centers and one alternative was on-route curbside collection. Figure 1 contains the location of the receiving centers and the curbside collection route.

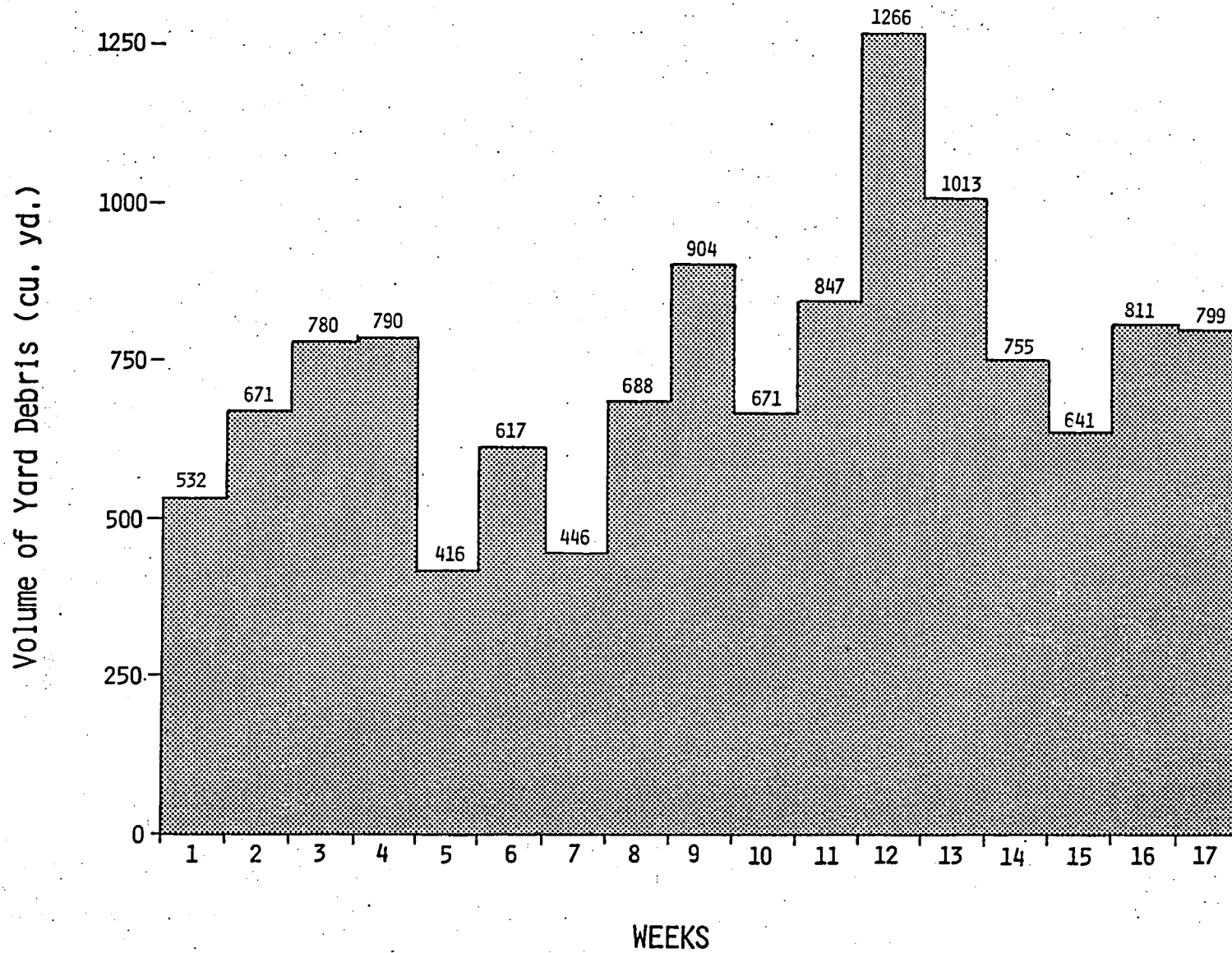
Promotion and education activities in Phase III included:

- revising and airing radio spots;
- press releases and live radio spots; and
- presentations to neighborhood and civic groups, elementary and middle school students which included distribution of yard debris brochures.

Several procedures were tried to decrease the amount of contamination in the yard debris:

- inspection of stockpile with hand-held metal detector;
- pre-grinding with specialized equipment;
- screening with mechanized magnetic separation; and
- visual inspection and manual removal of contaminated material before yard debris is stockpiled.

The contract with Waste By-Products was amended to include the expanded effort to demonstrate processes to segregate contaminated material. The duration of the spring and summer phases were 17 weeks and 13 weeks respectively. St. Johns Landfill was the receiving location for some material generated from the Neighborhood Clean-ups in the City of Portland (Case Study 6). Material was received at the St. Johns Landfill until Waste By-Products opened their receiving site in North Portland on September 1, 1982. When vehicles with yard debris arrived at St. Johns Landfill, the drivers were informed of the new site and given a brochure. The quantities of yard debris unloaded at St. Johns Landfill and the levels of participation for Phase III can be found in Tables 1 and 2, respectively. Phase IV quantities and participation rates are in Tables 3 and 4, respectively.

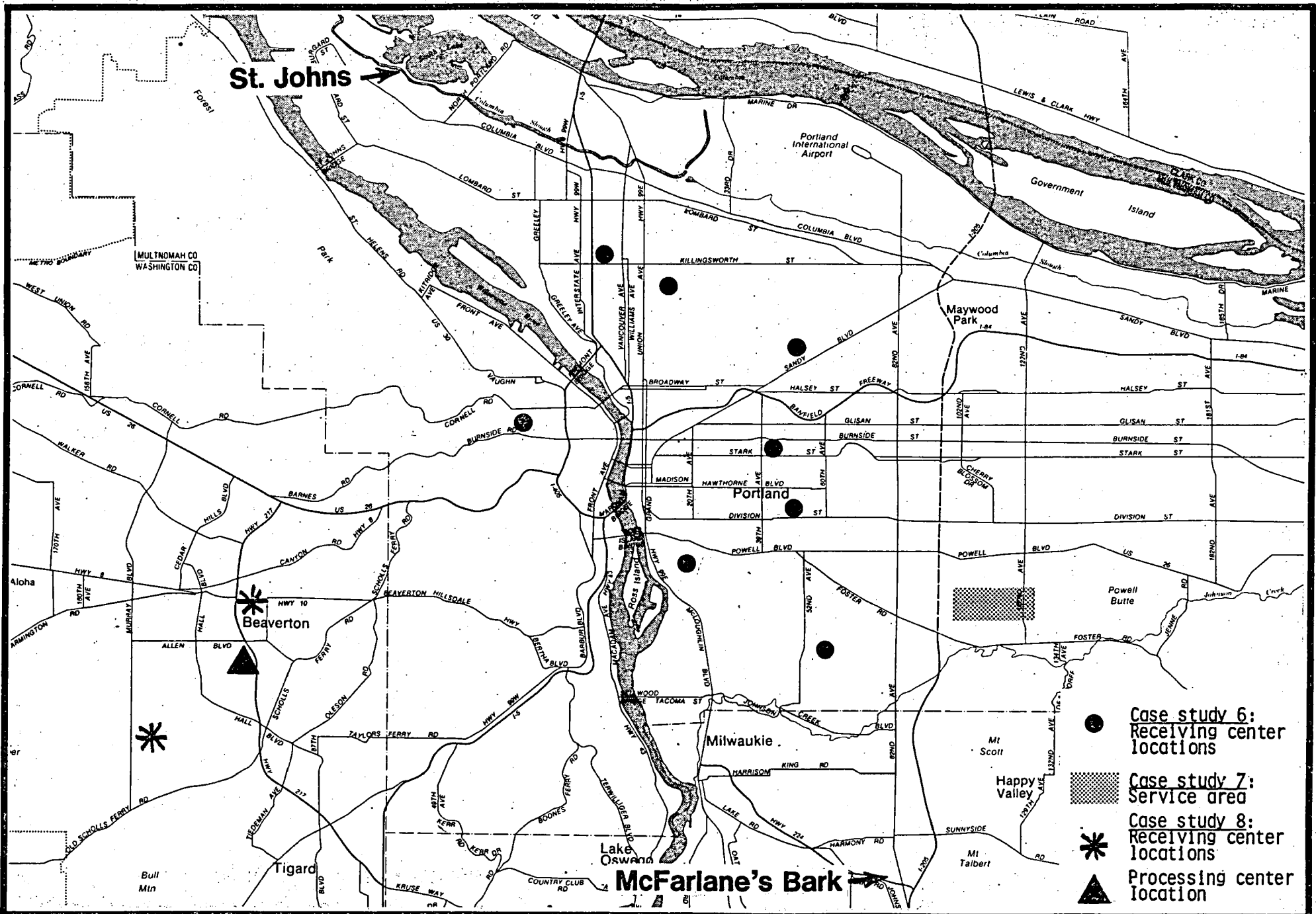


Phase III  
March 1 - June 30, 1982

Yard Debris Received at St. Johns Landfill

Table 1

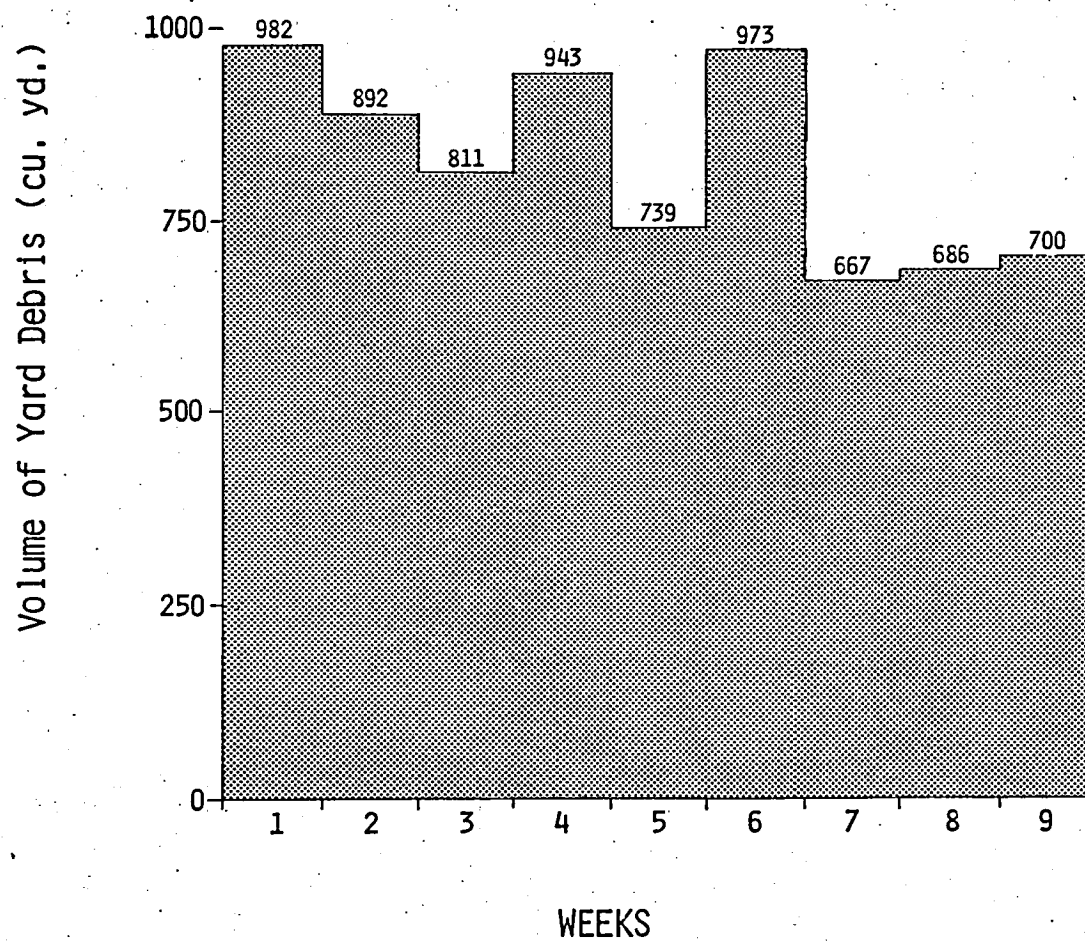
2-77



Phase III  
March 1 - June 30, 1982

## Location of Case Studies

FIG. 1



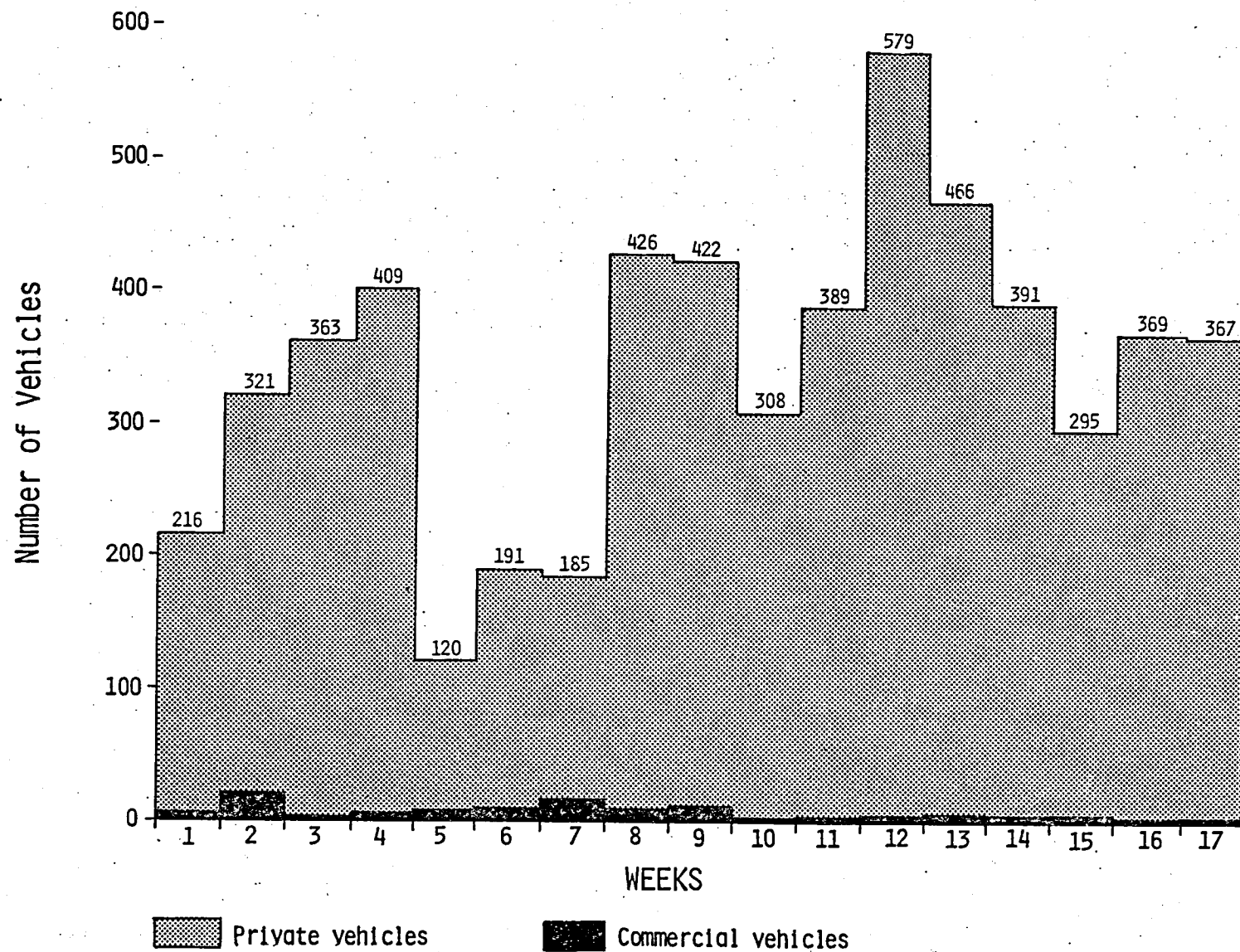
Phase IV  
July 1-August 31, 1982

**Yard Debris Received at St. Johns Landfill**

**Table 3**



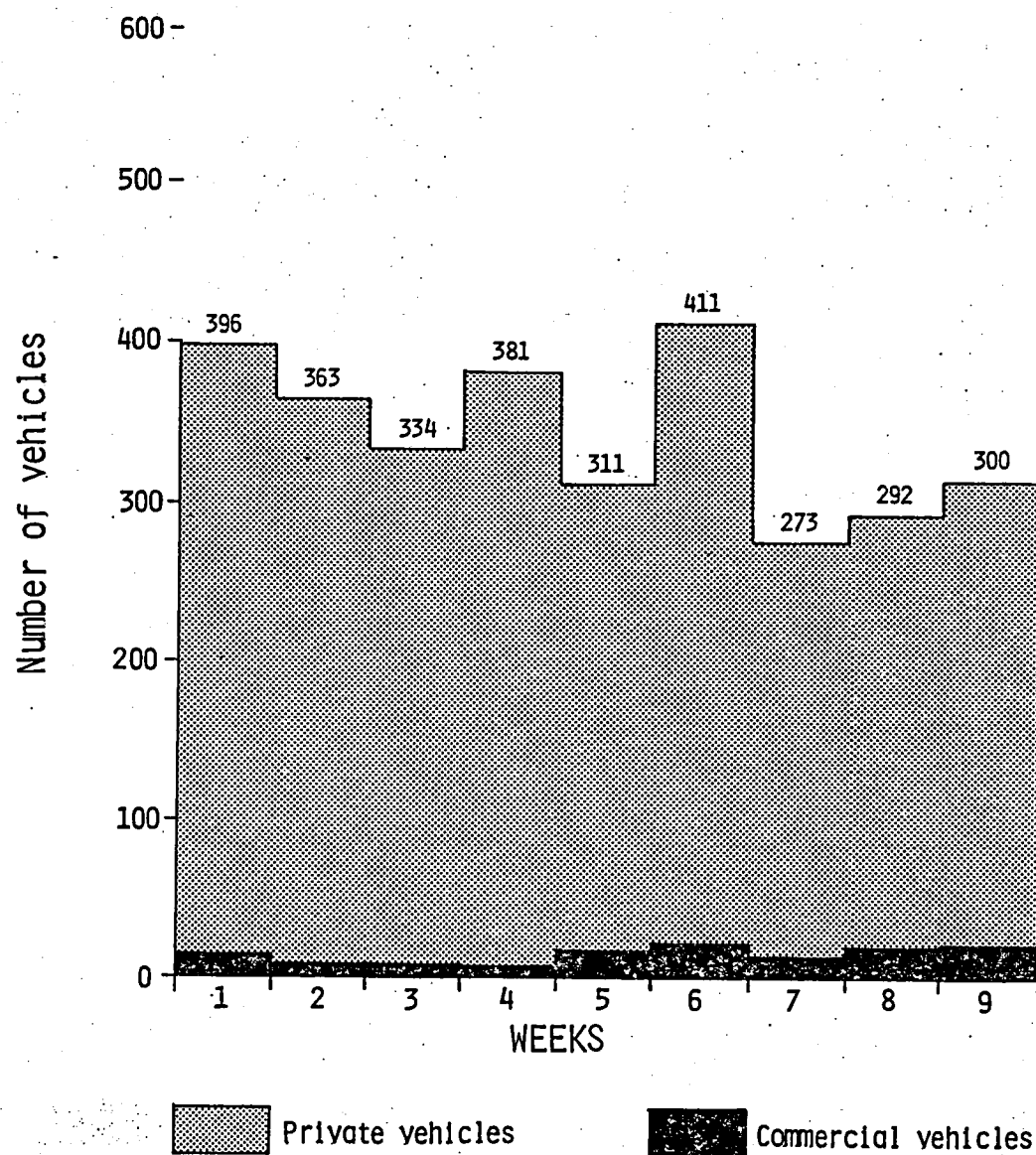
2-79



Phase III  
March 1 - June 30, 1982

Participation Rate at St. Johns Landfill

Table 2



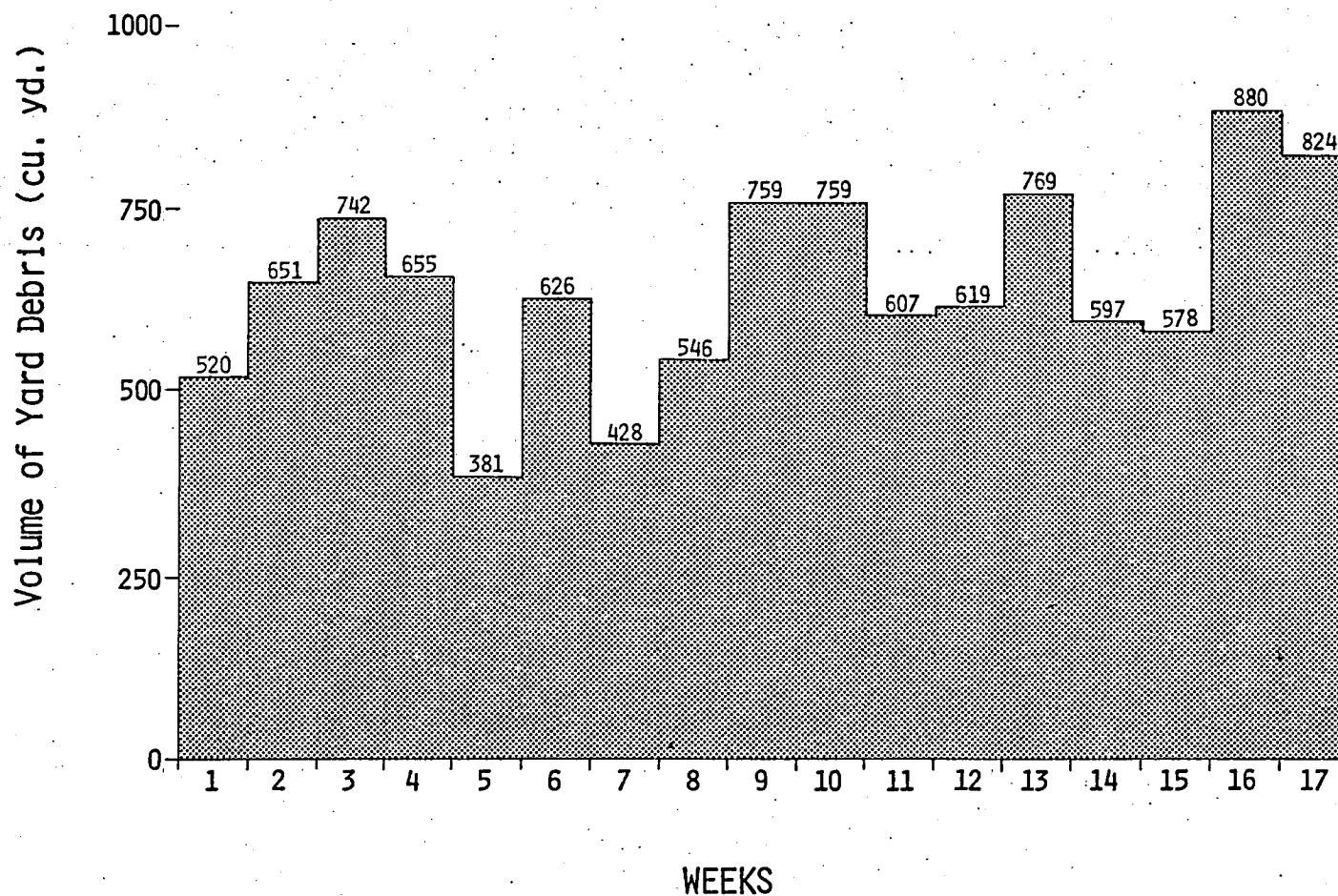
Phase IV  
July 1-August 31, 1982

Participation Rate at St. Johns Landfill

Table 4

McFarlane's Bark, Inc. in Clackamas continued to receive yard debris for Phases III and IV. McFarlane's was the receiving site for material generated in Case Studies 6, 7 and 8. The quantities of yard debris unloaded at McFarlane's Bark for Phase III and the levels of participation can be found in Tables 5 and 6, respectively. Phase IV quantities and participation rates are in Tables 7 and 8, respectively.

The prices for disposing of yard debris remained the same as in Phase II; private vehicles \$1.00 per car, \$2.00 per pick-up truck or trailer (for first 2-1/2 cubic yards). The commercial and institutional user was charged 50¢ per cubic yard for loose material and \$1.00 per cubic yard for compacted material.

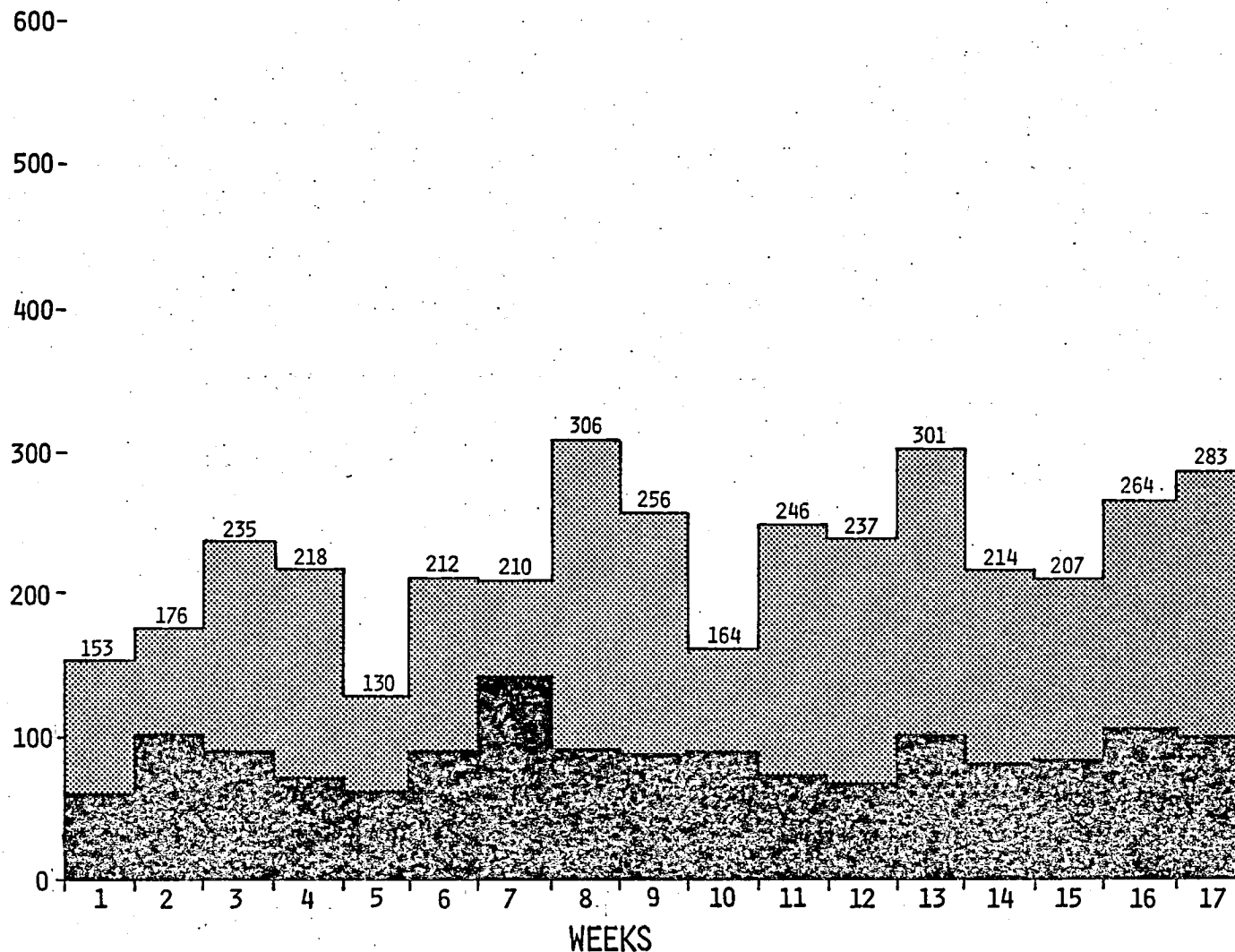


Phase III  
March 1 - June 30, 1982

Yard Debris Received at McFarlane's Bark

Table 5

Number of Vehicles



Private vehicles

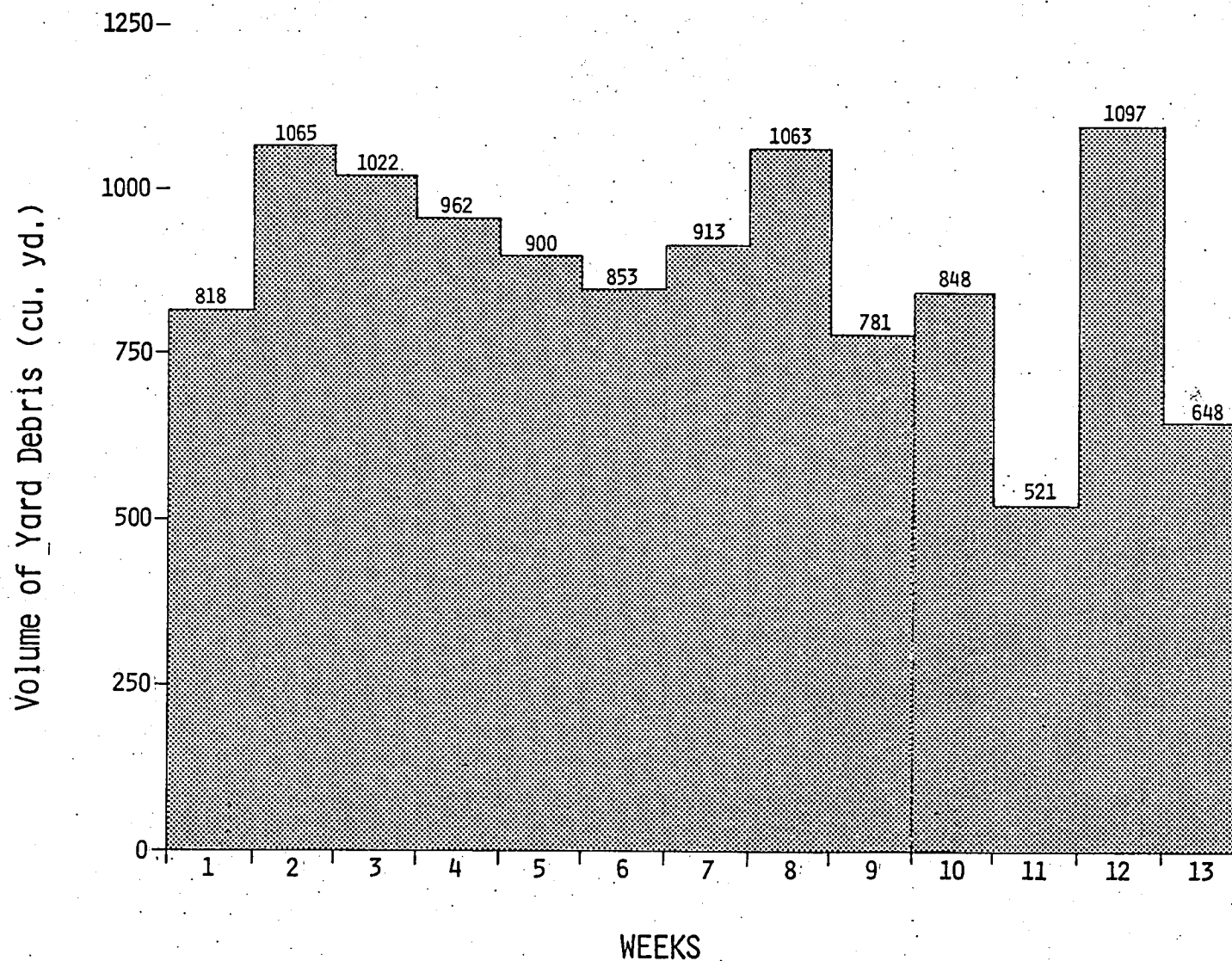
Commercial vehicles



Phase III  
March 1 - June 30, 1982

Participation Rate at McFarlane's Bark

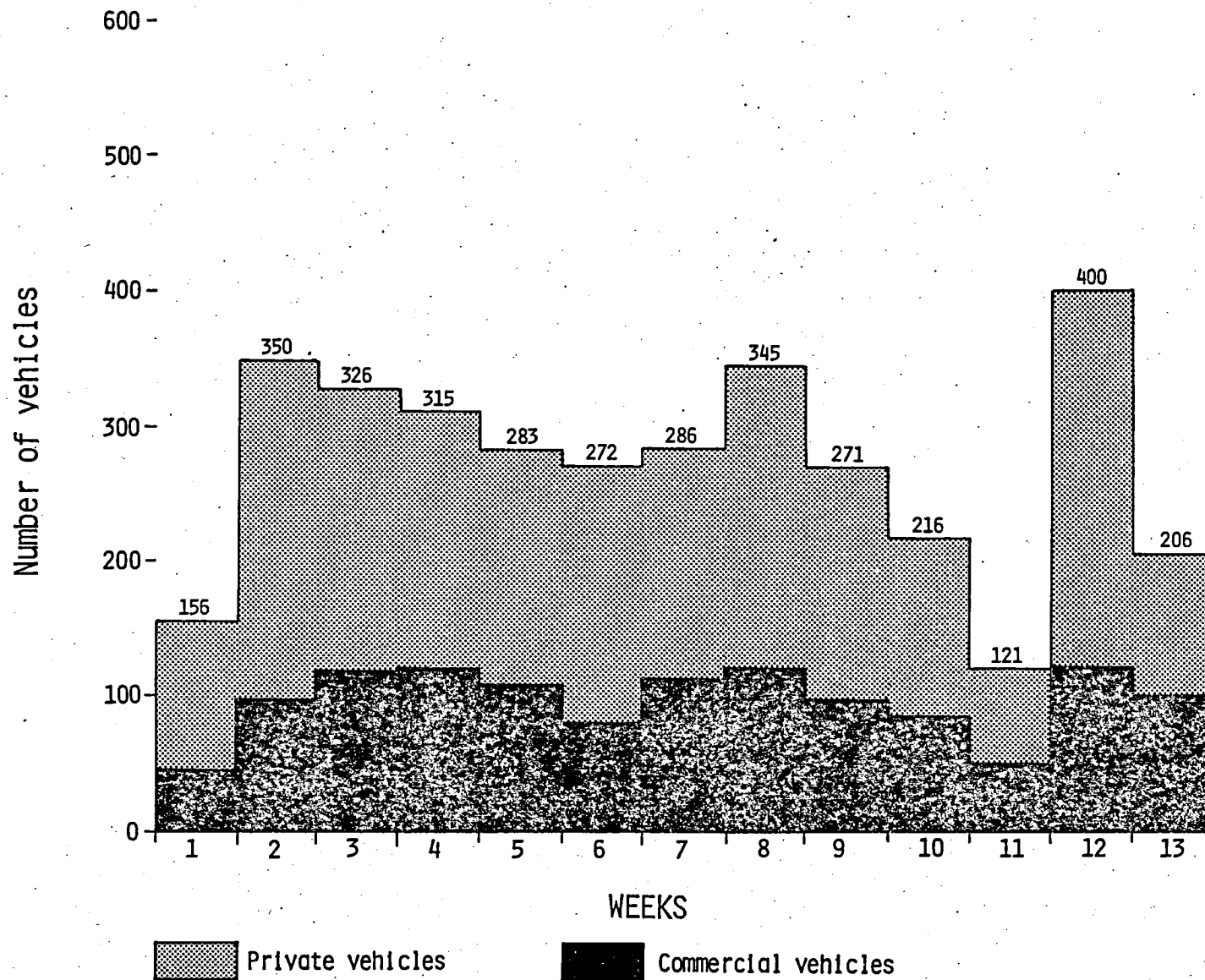
Table 6



Phase IV  
July 1-September 30, 1982

Yard Debris Received at McFarlane's Bark

Table 7



Phase IV  
July 1-September 30, 1982

Participation Rate at McFarlane's Bark

Table 8

## PROMOTION AND EDUCATION

Most of the promotion and publicity occurred in the months of March, April and May. The following is a chronology of promotion for the Phase III demonstration:

- On March 10, Metro sent out an announcement requesting radio stations to include information about the yard debris program when they talked about backyard burning being permitted each day. DEQ's public information staff followed up with calls to the stations, encouraging them to use Metro's tag. Metro called the stations when the yard debris information was omitted from the burning public service announcements.
- On March 11, Metro sent out a press release to all of the regional press (print and broadcast), to explain the yard debris program.
- On March 19, Metro information staff participated in a four-minute live spot on the Mid-day Monitor (KXL radio), explaining the yard debris program and promoting St. Johns and McFarlane's receiving centers.
- Metro's public information staff taped radio interviews on four stations, and responded to several calls from print media (prompted by the news release sent out March 11).
- Another news release was sent out to all regional press on March 26 detailing the neighborhood clean-ups and the Beaverton clean-up.
- A Metro recycling representative who made recycling presentations to 161 classes (4,850 students) in 28 middle and elementary schools in southeast Portland also included distribution of the Yard Debris Health Kit and Portland Clean-up brochure and a discussion about the yard debris program.
- Metro's community relations representative discussed the yard debris program as part of a recycling presentation which was made to neighborhood associations, service club meetings and camps throughout the region. About 500 yard debris brochures were distributed:

Jennings Lodge School  
Sellwood-Moreland Manor  
Centennial Lions Club  
Hazelwood Neighborhood Association  
American Business Women's Association  
Milwaukie Senior Center  
Christian Businessmen's Association  
Oregon City Senior Center

April 20 - May 25

Camps: Cathedral School  
Salvation Army Day Camp

June 21 - August 25



Suttle Lake United Methodist Camp  
 Camp Namanu (Camp Fire Girls)  
 Camp Lowami (Camp Fire Girls)  
 Camp MacGruder (Boy Scouts)  
 Camp Howard  
 Tryon Creek Nature Camp  
 Camp Merriweather  
 Catholic Youth Organization Camp

- Yard Debris Radio Spots

KGW Week 1 April 5 - 9 spots  
 Week 2 April 19 - 8 spots  
 Week 3 May 17 - 8 spots  
 Schedule: Tuesday-Saturday, three morning drive, two mid-day, four afternoon drive, four evening.

KYXI Week 1 April 5 - 14 spots  
 Week 2 April 19 - 17 spots  
 Week 3 May 17 - 17 spots  
 Schedule: Wednesday-Friday, 34 spots in morning and afternoon drive, 14 in mid-day.

KYTE/KB10 Week 1 April 5 - 12/12 spots (each station)  
 Week 2 April 19 - 12/12 spots (each station)  
 Schedule: Monday-Sunday TAP plan

Total 121 spots at a cost of \$5,719

- Yard Debris Health Kit distributed to:

-City of Portland Office of Neighborhood Affairs (900)  
 -Kasch's Nursery, 2500 S.E. Tacoma (300)  
 -7-Dee's Nursery, S.E. 60th and Powell (300)  
 -Air Fair

- News Release- April 15, 1982 Promotion of Neighborhood Clean-ups in City of Portland

- Live interview with Metro information staff on April 14, 1982, KXL Mid-day Monitor.

Since a survey was not completed during Phase III and IV, the impact of the promotion effort was determined by the numbers of yard debris calls to Metro's Recycling Switchboard and the number of participants in the project. The number of yard debris calls to the Switchboard increased during the months where promotion was most intense:

	No. of Yard Debris Calls	Total Calls	Percent
March	55	1,349	4
April	113	1,443	8

	No. of Yard Debris Calls	Total Calls	Percent
May	139	1,231	11
June	80	1,225	7
July	53	1,113	5
August	35	1,118	3
September	<u>30</u>	<u>1,010</u>	3
Total	505	8,489	

Copies of the brochures and newspaper articles are in the Appendix.

## COLLECTION ALTERNATIVES

Three collection case studies will be presented as a continuation of the five case studies in the Phase II Evaluation:

- |                                  |                                               |
|----------------------------------|-----------------------------------------------|
| Case Study 6 - City of Portland  | (Neighborhood Clean-ups in unfranchised area) |
| Case Study 7 - City of Beaverton | (City-wide clean-up in franchised area)       |
| Case Study 8 - Waste-Go Services | (Curbside pickup in unfranchised area)        |

### Case Study 6: City of Portland (Clean-Ups)

#### Background

The City of Portland Bureau of Neighborhood Environment sponsors neighborhood clean-ups in the spring and fall months. For the Yard Debris Project, the City proposed to assist neighborhoods in organizing and conducting several clean-ups. The clean-ups generally receive household discards with no food waste. Nine neighborhoods participated in the spring clean-ups and eight of these segregated yard debris from other waste. The City of Portland Bureau of Buildings sent a letter to the chairperson of each neighborhood association outlining the organization and requirements of clean-ups and inviting them to request assistance in sponsoring a spring clean-up. The letter explained that a neighborhood could choose to do either a yard debris-only clean-up or a general clean-up or combine the two into one clean-up. Neighborhoods were asked to submit requests no later than February 12, 1982 so the selection of participants and clean-up dates could be determined. City of Portland staff supervised the first neighborhood clean-up with the hope that neighborhood leaders organize and manage subsequent clean-ups. Of the 70 organized neighborhoods in the City, nine neighborhoods participated in the spring clean-ups; eight of these segregated yard debris. The disposal points were either McFarlane's Bark, Inc. or St. Johns Landfill.

#### Site Preparation and Operating Procedures

The temporary storage sites were centrally located in the neighborhoods. Paved parking lots of schools, churches and shopping centers were generally used as receiving locations for most of the clean-ups. Neighborhoods promoted their clean-ups by distributing flyers and/or newsletters to residents in the neighborhood, and by posting notices. At the same time, volunteers were solicited to help staff the clean-ups.

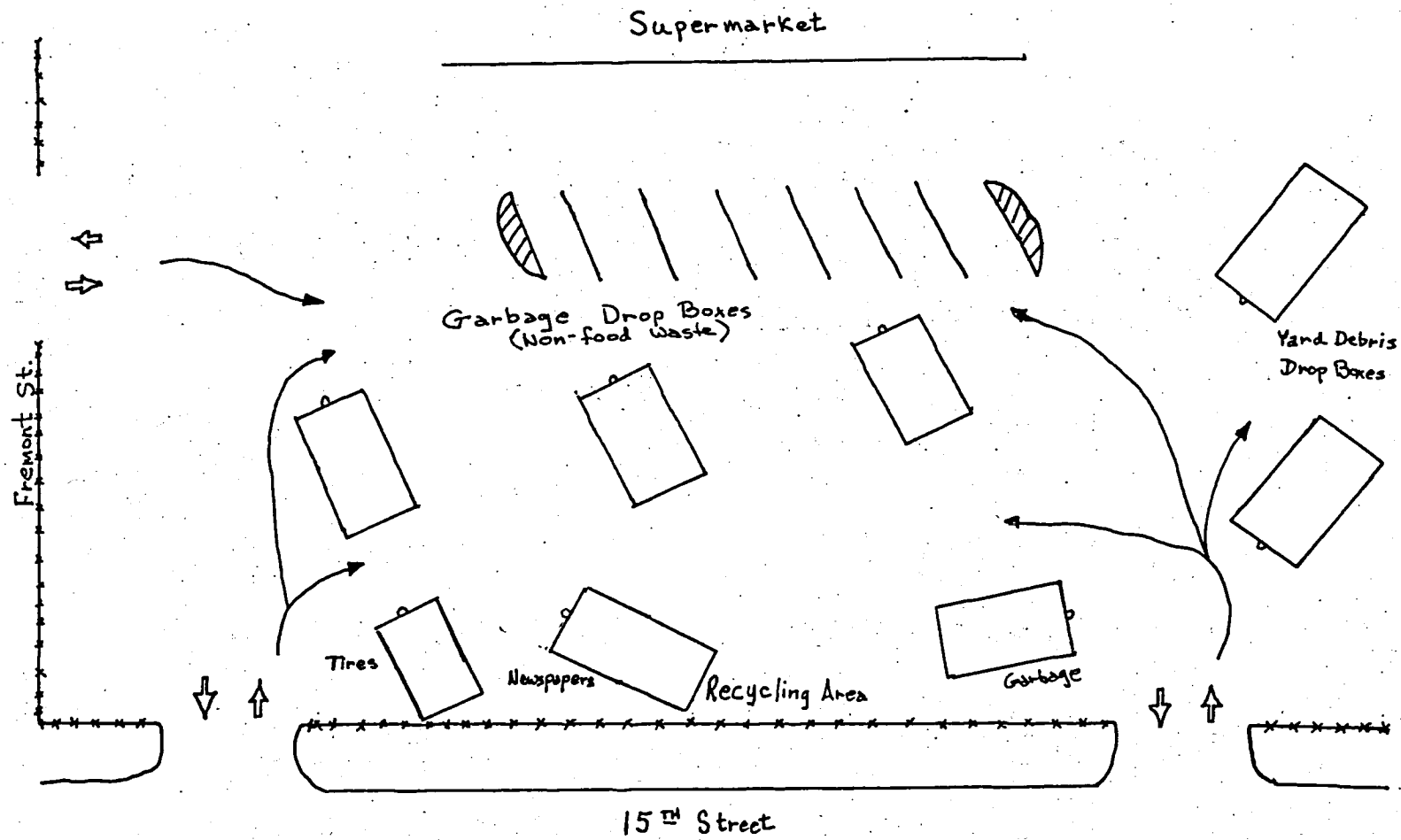
The site layouts differed with each clean-up and were dependent on the size of the site and the locations of the ingresses and egresses. The Sunnyside clean-up was located on a 100-foot x 100-foot church parking lot. Richmond used a one-way drive through site configuration because the site was long and narrow. Traffic congestion was a problem at the Richmond Clean-Up. Sabin used half

of the parking area in a Thriftway Shopping Center and the two-way traffic pattern did not produce a lot of traffic congestion (Figure 2). Enough room was provided around each drop box so vehicles could come from almost any direction and unload. Yard debris boxes were kept in an area off to the side from the garbage drop boxes. Paper signs were placed on the drop boxes to designate the contents.

The general operating procedure differed with the neighborhood and the number of volunteers. The clean-ups were held on Saturdays from 10:00 a.m. to 3:00 p.m. Generally, a car or pick-up truck entered and a person asked the driver what he or she was disposing. The vehicle was then directed to either a garbage, yard debris, tire drop box or the recycling area. When a vehicle contained loose yard debris (e.g., leaves and grass) the driver was instructed to back up to the open end of a drop box to unload. The drop boxes were filled from the rear end forward until the material started falling out of the open end. The doors were shut and from that time forward, material was loaded from the top. Sometimes volunteers were present to help out with the unloading. Most times, however, users unloaded their own vehicles. The time to unload a vehicle varied with the amount and type of material disposed, but most vehicles could be unloaded within 10-15 minutes. When loose leaves or grass were unloaded, some always ended up on the ground. When a drop box was filling up, a volunteer climbed into the box to compact and distribute the load so more material could be disposed. Sometimes a person stayed in the box so he/she could be handed material from below. Once filled, the drop box would be covered with a tarp and loaded onto a rail truck. Several garbage haulers who collect within the City provided the drop box hauling service. In addition, many neighborhoods had volunteers picking up garbage and yard debris from the elderly or handicapped people who could not bring their own material to the clean-up receiving sites. After the clean-ups were over, the volunteers swept the sites.

#### Problems---Controls

- Traffic congestion occurred with cars backed out onto street---Layout site so as many cars as possible can either unload or queue on-site. Leave plenty of room between boxes. Have volunteers help with traffic control and unloading.
- Garbage and rocks placed in boxes designated for yard debris---Have traffic control person inspect the load and instruct the driver to the appropriate box. In addition, one person needed to inspect vehicles unloading into yard debris boxes. (This one person can supervise the filling of two drop boxes which are in close proximity to each other.)
- Loose yard debris in drop boxes did not compact well (so it is cheaper to weigh load for disposal at landfill than it is to be charged by the cubic yard at a yard debris receiving site).---Do not use very large (greater than 30 cubic yard) boxes for yard debris. Have person stand in half-filled drop



Phase III  
March 1 - June 30, 1982

Case Study 6: City of Portland Clean-Up  
Sabin Neighborhood

FIG. 2

TABLE 9

## CASE STUDY 6: SUMMARY OF CITY OF PORTLAND CLEAN-UPS

Date	Neighborhood Clean-Up	Location	No. of Boxes	Size of Yard Debris Boxes (cu yd)	Total Received (cu yd)	Receiving Site	Haul Cost Per Box	Disposal Fee Per Box	Labor Cost (Yard Debris)	Total Cost (Yard Debris)
03/27/82	Woodstock	52nd & S.E. Woodstock	1 <u>1</u> 2	50 40	50 40 90	McFarlane's	\$74.00 69.00	\$26.00 21.00	-V-	\$190.00
04/17/82	Beaumont/ Wilshire	41st & N.E. Fremont	3	22	66	St. Johns	\$55.00	\$10.00	\$ 32.10	\$207.10
04/24/82	Richmond	50th & S.E. Division	2 <u>2</u> 4	50 40	100 80 180	McFarlane's	\$62.90 58.65	\$26.00 21.00	-V-	\$337.10
04/24/82	Sabin	15th & N.E.	1	30	30	St. Johns	N.D.	N.D.	-V-	N.D.
05/01/82	Sunnyside	45th & S.E. Main	2	30	60	McFarlane's St. Johns	\$55.00	\$15.00	\$ 88.20	\$228.00
05/01/82	Brooklyn	16th & S.E. Center	3	40	120	McFarlane's	\$69.00	\$20.00	-V-	\$267.00
05/15/82	Hillside	Culpepper & Aerial Ter. (N.W.)	2	30	60	St. Johns	\$55.00	\$15.00	\$147.42	\$287.42
05/22/82	Humboldt	N. Kerby & Jessip	4 <u>1</u> 5	20 30	80 30 110	St. Johns	\$55.00 \$55.00	\$10.00 \$15.00	-V-	\$330.00

N.D. - No Data

-V- - Neighborhood Volunteers

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box to compact and distribute load. Investigate use of packer type truck to receive yard waste at clean-up.

- Some loose yard waste came in plastic bags.---Have inspection person break open all bags inside the drop box. Dispose bags with other garbage.
- Signage on yard debris boxes was not effective.---Free standing signs clearly stating what yard debris is and is not could be used.
- The fewer volunteers or hired staff that worked on the clean-ups the greater chance that the yard debris collected got contaminated.---Firm up enough commitments from volunteers before considering taking yard debris.



## Case Study 7: City of Beaverton (Clean-Up)

### Background

The City of Beaverton conducted a city-wide clean-up 8:00 a.m. to 5:00 p.m. on Saturday, March 27, 1982. The clean-up was only one activity of Clean Sweep Week which has been a spring event for the past four years. Activities of the clean-up week were promoted in the local monthly newsletter sent to each residence and business in the City. Flyers were left in grocery stores and sent home with students who attend local grade schools. Press releases produced articles in the Valley Times and the Oregonian. The local garbage haulers donated their equipment and labor to haul the garbage and yard debris, and city officials, employees and residents volunteered to staff the receiving sites.

This season, two temporary receiving locations were established to receive garbage and yard debris (no food or tires):

- Handyman Store parking lot at 5th Street and Western Avenue; and
- Hiteon School parking lot in south Beaverton on Brockman Drive.

The separated yard debris was then hauled to a site located on the southwest corner of the intersection of Highway 217 and Denny Road in Beaverton. The material was then processed by Waste By-Products who sold the hog fuel product to Willamette Industries of Albany, Oregon.

### Site Description and Operating Procedures

The Handyman receiving site was large enough to have two rows of drop boxes and a one-way drive through system. A single lane of cars entered one ingress, then split into two lanes to unload. The Hiteon School site was smaller and could only accommodate one diagonal row of drop boxes and one-lane of one-way drive through traffic. Both sites had signs on the adjacent right-of-ways to direct traffic to the site entrance. The processing site on Denny Road is owned by the Unified Sewer Agency and leased to the city of Beaverton. The site is a vacant dirt lot with one curb cut and a driveway leading to a large asphalt pad. A chain link fence surrounds the five acre site and a lockable gate controls site access. A community garden is also on site.

Traffic control and operating procedures at the receiving sites were similar to the clean-ups in Case Study 6. A volunteer met the vehicles near the site entrance, and, after finding out what material was to be disposed, directed the vehicle to the appropriate container. Each receiving site had packer type trucks and drop boxes which were used to store and transfer yard waste to the processing site. At both receiving locations, small manually fed chippers were used to reduce the volume of yard debris. It was thought that the people unloading garbage and yard debris would take



some of the chips for use as a decorative mulch. Only a small number of participants took some of the woodchips. Volunteers were used to inspect the loads and help distribute and tamp the yard debris loads in drop boxes. The smaller site at Hiteon School had four drop boxes and two packer trucks and the Handyman location had eight drop boxes and two-four packer trucks. When drop boxes and packer trucks were full with yard debris, they were transferred to the Denny Road stockpile. City street sweepers cleaned the receiving area at the end of the clean-up.

Waste By-Products processed the stockpiled material with their mobile Medallion Grinder (see Phase II Evaluation Case Study 4). The grinder was positioned on the asphalt and the drop boxes and the stockpile were dirt. A front-end rubber tire loader fed the hopper to the grinder and the processed material was loaded by conveyor into the top opening of a chip trailer. The hog fuel was hauled to Willamette Industries in Albany, Oregon. The set-up, processing and demobilization was accomplished within a few weeks.

#### Results of Case Study 7 (excluding processing)

##### Labor:

- 40 volunteers on site
- 10 garbage haulers
- 2 city employee organizers

##### Equipment:

- 8 drop boxes
- 2-4 packer trucks (rear-loading)
- 1 small manual chipper
- 1 large manual chipper

##### Materials:

- Signage

##### Quantity of Yard Debris Collected:

- 1,791 loose cubic yards equivalent to almost 90 - 20 cubic yard drop boxes. (The compactor trucks each held up to 200 cubic yards of loose yards (20:1 compaction) of loose yard debris, and accounted for 1,000 cubic yards of loose material.)

##### Participation Rate:

- 1,500 out of 15,175 residents or about 10 percent.

##### Cost:

Labor:	All volunteer except	
	2 city employee organizers	\$ 717.00
Equipment:	All donated except	
	Signage	8.00

Processing:

1,800 cubic yards @  
\$1.00 cubic yard

1,800.00

Total:

\$2,515.00

A noise test was conducted at the Denny Road processing site on April 8, 1982. The equipment being tested were the Medallion Grinder with conveyor and a John Deere JD 644A front-end loader. Both units were powered by diesel engines estimated to have at least six cylinders. Results are as follows:

	John Deere JD 644A Front-end Loader	Medallion Grinder
Idle at 50 ft.	68 dBA	68 dBA
Maximum Noise Levels with Unit under Load at 50 ft.	80-82 dBA	81 dBA
Nature of Noise	Varying Level, Intermittent	Constant
Probable Constraining Noise Limit	L10	L50

DEQ's noise limits are shown in the following table.

Allowable Statistical Noise Levels in Any One Hour

<u>7:00 a.m. - 10:00 p.m.</u>	<u>10:00 p.m. - 7:00 a.m.</u>
L50 - 55 dBA	L50 - 50 dBA
L10 - 60 dBA	L10 - 55 dBA
L1 - 75 dBA	L1 - 60 dBA

Where:

- L50 = noise level equaled or exceeded 30 minutes out of the hour
- L10 = noise level equaled or exceeded 6 minutes out of the hour
- L1 = noise level equaled or exceeded 30 seconds out of the hour

On the date of this measurement, the shredder was located approximately 200 feet from the nearest residence. The noise level

that could be expected at the appropriate measurement point would be an L50 of 70 dBA. The noise levels attributable to the front-end loader would vary according to the distance from the residence where operation occurred. The estimated distance from noise sensitive property (NSP) this equipment would have to be located to remain in compliance NSP are as follows:

front-end loader - 586 feet  
shredder/chipper - 1,023 feet

These distances are for a unit operating by itself on line of sight with the NSP. Any compliance measurements or distances would be influenced by both units operating together and any berms or barriers blocking the line of sight.

Case Study 8: Waste-Go Services  
(On-route Curbside Collection)

Background

Waste-Go Services, a non-franchised hauler offered to participate in the project by collecting yard debris from southeast Portland and Multnomah County customers. Waste-Go collection staff distributed flyers on April 26 and 27 to advertise the special yard debris pick up. Flyers were placed in garbage can handles or under back doors of homes. The area (approximately one square mile) served had the following boundaries:

Holgate Boulevard on the north  
Harold Street on the south  
102nd Street on the west  
122nd Street on the east

Material was picked up at the curbside on the morning of May 1, 1982.

Operating Procedures

Curbside pick-up of yard debris was accomplished with a 25-cubic yard packer truck and a pickup truck. The packer was used on the through roads and the pickup was used on dead end streets and cul-de-sacs. The yard debris in the pickup truck was emptied into the packer truck and the packer truck was hauled to McFarlane's Bark in Clackamas via Highway 205 (Figure 3).

Results of Case Study 8

Labor:

2 person crew for packer  
1 person crew for pickup

Equipment:

25 cubic yard PAKMOR (1978) Packer Truck with 3 cubic yard rear hopper  
6 cubic yard RUNABOUT on a Ford one ton pickup truck

Quantity of Yard Debris Collected:

45 loose cubic yard (50 percent of the material was in plastic bags).

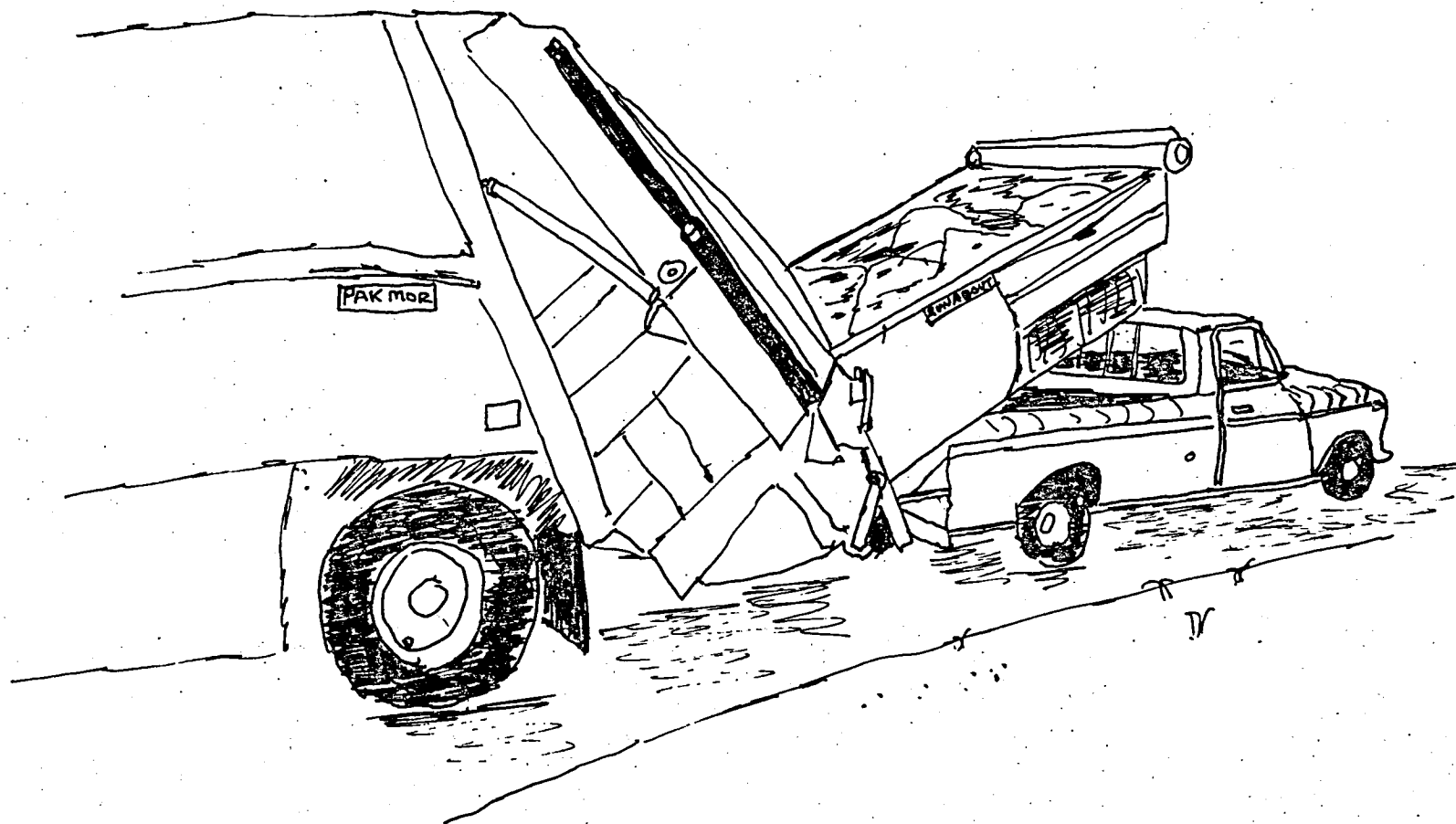
Participation Rate:

92 customers out of 726 in project area (13 percent).

Collection Time - Mileage:

On-route 7:30-10:30 a.m. - 3 hours; 12 miles pickup truck; 6 miles packer

Haul to McFarlane's 10:30-11:15 a.m. 3/4 hour;  
13 miles round trip



Phase III  
March 1 - June 30, 1982

## Case Study 8: Waste-Go Services

FIG. 3

Customer Feedback:

"All of the customers we spoke with on the collection day were delighted to have their material removed and asked when we would be doing this again!" Dale Yuckert, Waste-Go Services.

Cost:

Labor:	9-3/4 persons-hours	\$109.29
Equipment:		54.46
Fuel:		22.09
Disposal:		25.00
Brochures (produced in-house at Metro):		<u>25.00</u>
Total:		\$235.85

Problems---Controls

- Collection project could have had more citizen participation and packer truck could have accommodated more material.---Conduct project earlier in the season (mid-March) to increase participation and yard debris quantities.
- Collection service advertised on April 26-27 and picked up on May 1 so there was not enough lead time.

## HANDLING AND PROCESSING OF CONTAMINATED MATERIAL

The problem of contamination has been present through all phases of the yard debris project. Regardless of the levels of inspection, materials which degrade the product enter the system. There have been two causes of contamination in the project:

- Visual inspection is not effective because material is in bags and/or spotter is not present or does not constantly watch unloading.
- If stockpile area is dirt (sludge) or rock this material gets mixed with yard debris when stockpiles are worked.

To deal with these causes of contamination several techniques to handle and process yard debris were demonstrated:

- Visual inspection with hand-held metal detection.
- Disc screen and magnetic separation equipment.
- Pre-grinding with specialized equipment.
- Effectively using spotter's time.

Phase III yard debris which was brought to St. Johns Landfill was diverted to the stockpile area where a spotter inspected each load on a full-time basis. The quantity which was to be processed was about 10,000 cubic yards. Due to increased wet weather and the former stockpiling procedures, mud and sludge contaminated the yard debris. To deal with this problem, it was recommended to either delay processing until the mud and yard debris dried during the summer; remove the material and use as landfill cover; or landfill it. In addition, this material was further contaminated with metal because the spotter monitored unloading on site only five out of seven days. The mud/sludge contamination occurred when material was pushed by the front-end loader across the wet muddy surface and then stockpiled. If the material would have been processed at that time the processing equipment would have been damaged by the severe contamination and the Btu value of the processed product would have decreased substantially. (A test showed that mud contaminated product had half the Btu content of normal product.) A small tracked dozer was equipped with a rake type blade and the contaminated material was neatly stacked and allowed to dry out. Once dry, it was easier to separate the dirt (mud/sludge) from the yard debris. In addition, signs designating what material was and was not acceptable were posted on the fence and within the site.

Once the yard debris was stockpiled to 10 to 15 ft. heights, it was difficult to remove metal contamination. During one week, the spotter was equipped with a hand held metal detector. The front-end loader broke up parts of the stockpile and spread it on the ground. The spotter with the metal detector then picked through this material to remove metal. The loader then fed the uncontaminated material into the hopper of the Medallion Grinder. This process was found to be effective but time consuming. It was felt that if:

- a spotter was on-site seven days per week and if:
- the site was paved and if:
- processing was scheduled frequently (3000 - 4000 cu yd accumulation)

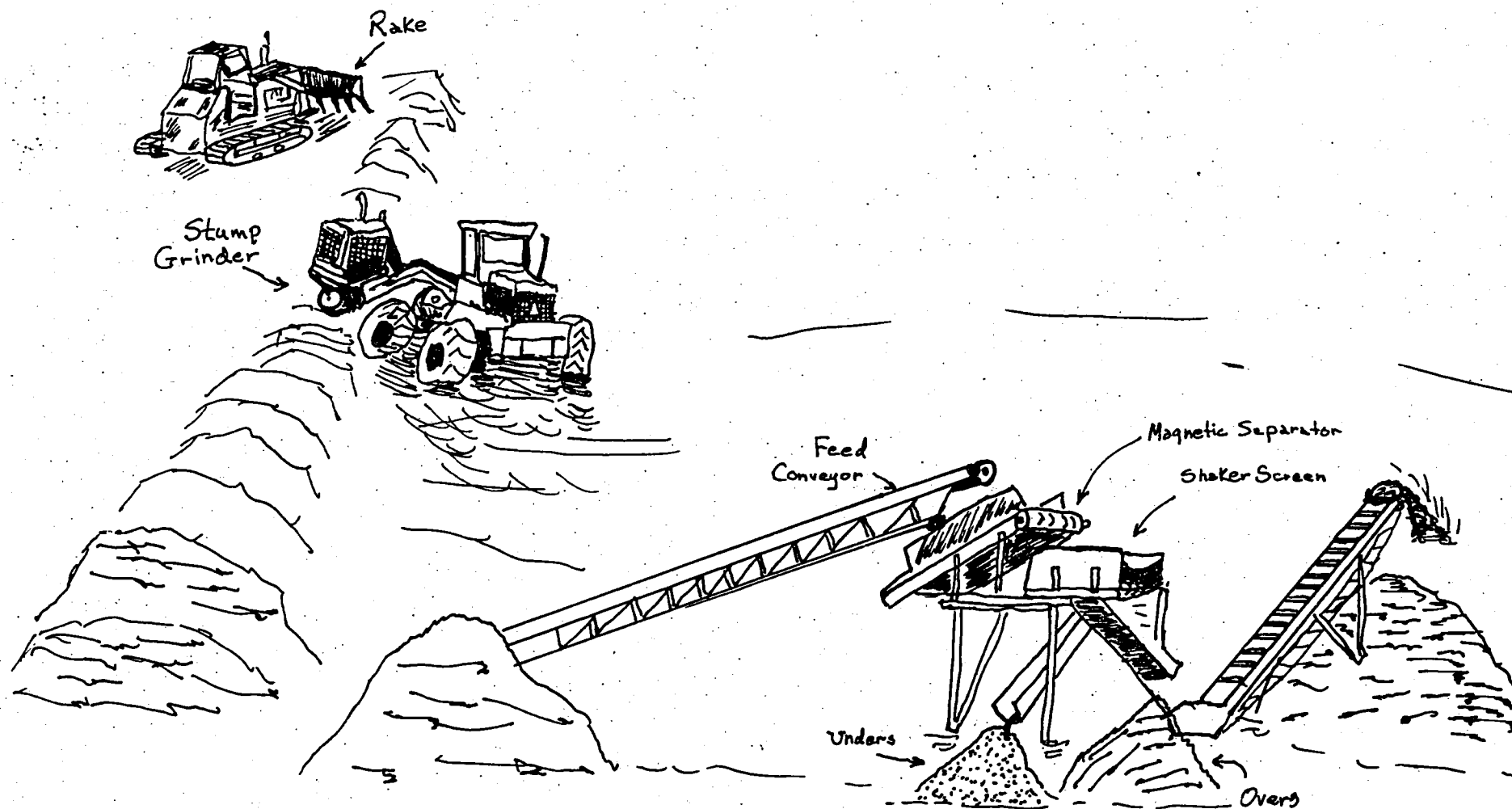
then some of these contamination problems might be mitigated. However, it was concluded that the contamination was primarily due to the ineffectiveness of the individual spotter because of his lack of incentive to do a good job. The spotter was not an active member of the (Waste By-Products) processing team.

In June, contamination still occurred. As a result, Waste By-Products proposed to pre-grind the contaminated waste with a specialized piece of equipment and then pre-screen and magnetically separate contaminated material prior to entering the Medallion Grinder. A John Deere front-end rubber tire loader was modified by removing the bucket and installing a stump grinder attachment equipped with its own diesel power unit on the front forks of the loader. The stump grinder is a rotating drum with metal teeth. The crawler dozer with the rake like blade split the stockpile and placed the debris in long 4 ft. high rows. The loader then moved the grinder into the fixed piles of debris and the proceeded along the length of the pile. The pre-ground material was then fed onto the feed conveyor to the prescreening process. The material moved up the feed conveyor and fell onto a hopper on a belt conveyor. At the end of the conveyor was the magnetic separator. The metals were removed from the flow and piled on the ground. The pre-ground material fell onto a disc screen where over (greater than 5 inches) and under sized (less than 1/2 inches) were removed from the product. For every cubic yard fed into the screen, 10 percent came out as fines, 10 percent was oversized (to be processed) and 80 percent was ground in the Medallion. Figure 4 contains a schematic of the handling and preprocessing at St. Johns Landfill. Table 10 contains costs for processing in Phases III and IV and Table 11 summarizes all costs for Phases III and IV. Table 12 lists the revenues from fees received at St. Johns Landfill and Table 13 lists the quantities of yard debris received in Phases III and IV.

Since it was assumed that the contamination which occurred in the spring was due to the individual spotter, and a spotter which was part of the processing team would be effective in reducing contamination, yard debris was diverted during the summer months to the stockpile area without a spotter. For two hours at the end of each day, a worker would go through the small piles of debris and pick out all contaminated material for disposal in the landfill. Then the material was stockpiled and the unloading area cleared for the following day operation. The purpose of this exercise was to determine whether the unloading of yard debris could go unsupervised without a great impact on material integrity. Although only 10 percent contamination was experienced with this operation, the problem was with the metals and rocks in the contaminated material which damaged the processing equipment. It was concluded that the labor cost saved by decreasing the unloading supervision was not worth the increased risk in experiencing equipment damage. The



material collected in the summer was preground with the stump grinder and screened and magnetically separated prior to grinding in the Medallion. The processing and removal of the material and clean-up of the site has been extended into the fall season.



Phases III &amp; IV

Handling &amp; Preprocessing at St. Johns Landfill

FIG. 4

TABLE 10

Processing Costs at St. Johns Landfill

## Material collected at St. Johns:

Phase III	13,200 cu. yds.
Phase IV	<u>6,815 cu. yds.</u>
Total	20,015 cu. yds.

Metal Detector Rental	\$200.00
Spotter	
40 hrs. @ \$7.50/hr.	300.00
5 hrs. @ 11.25/hr (overtime)	56.25
Damage to Medallion Grinder*	
3 screens @ \$317 each	951.00
1 set knives (60) @ \$14 each	840.00
Signage (2)	436.00
Installation	64.00
Pregrinding 8,200 cu. yd. @ \$2/cu yd	16,400.00
Final Grind Phase III material (including preground material at 4:1 reduction from a total of 13,200 cu. yd.)	
13,200 x .25 x \$1/cu. yd.	<u>3,300.00</u>
Total Phase III Processing	\$22,547.25
Final Grind Phase IV material (10 percent contamination)	
6,815 cu. yd. @ \$1/cu. yd.	<u>6,815.00</u>
Total Phases III and IV Processing	\$29,362.25

\*Does not include damage caused to the conveyor belts and the rotor, lost production because of contamination, and additional fuel.

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Table 11

Phases III and IV CostsAdministration (estimate)

Staff	\$14,583.33
Fringe/overhead (estimate)	<u>8,750.00</u>
Total	\$23,333.33

Promotion and Education

Info. Personnel	\$ 1,227.00
Graphics Personnel	<u>315.00</u>
	\$ 1,542.00
Overhead/fringe (estimate)	\$ 925.20
Total	2,467.20
Radio Spots	5,719.00
Materials	<u>100.00</u>
Total	\$ 8,286.20

Stockpiling and Spotting at St. Johns Landfill

## 3/1 through 3/31

Spotter	189 hrs. @ \$11.82	\$ 2,233.98
Loader	27 hrs. @ \$56.00	1,512.00
Operator	27 hrs. @ \$16.69	450.63

## 4/1 through 4/30

Spotter	127 hrs. @ \$11.82	1,489.32
Loader	12 hrs. @ \$56.00	672.00
Operator	12 hrs. @ \$16.69	200.28

## 5/1 through 5/31

Loader	39 hrs. @ \$56.00	1,680.00
Operator	30 hrs. @ \$16.69	500.70

## 6/1 through 6/30

Loader	50.5 hrs. @ \$56.00	2,828.00
Operator	50.5 hrs. @ \$16.69	842.85

## K.W. Drop Box

Truck & Driver	12 hrs. @ \$44.42	533.04
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7/1 through 7/31

Loader	29 hrs. @ \$56.00	\$ 1,625.00
Operator	29 hrs. @ \$16.69	484.01

8/1 through 8/31

Loader	18 hrs. @ \$56.00	1,008.00
Operator	18 hrs. @ \$16.69	<u>300.42</u>
		\$16,359.23

<u>Processing at St. Johns Landfill</u>	<u>\$29,362.25</u>
-----------------------------------------	--------------------

Total	<u><u>\$77,341.01</u></u>
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TABLE 12

## REVENUE FROM FEES AT ST. JOHNS LANDFILL

Month	Public	Commercial	Total
March	\$2,763.00	\$128.00	\$2,891.00
April	2,263.00	170.50	2,433.50
May	3,592.00	302.50	3,894.50
June	3,163.00	171.00	3,334.00
July	3,239.00	247.50	3,486.50
August	2,314.00	450.50	2,764.50

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TABLE 13  
QUANTITIES OF YARD DEBRIS RECEIVED

Date	<u>St. Johns Landfill</u>		<u>McFarlane's Bark</u>	
	Daily	Weekly	Daily	Weekly
3/1	46		68	
3/2	58		52	
3/3	31		56	
3/4	57		82	
3/5	59		82	
3/6	133		116	
3/7	148	532	64	520
3/8	108		100	
3/9	69		89	
3/10	156		122	
3/11	75		87	
3/12	81		91	
3/13	82		125	
3/14	96	667	58	651
3/15	42		125	
3/16	82		74	
3/17	67		78	
3/18	84		93	
3/19	114		123	
3/20	198		144	
3/21	193	780	105	742
3/22	92		107	
3/23	133		91	
3/24	143		128	
3/25	124		107	
3/26	108		77	
3/27	122		122	
3/28	69	791	23	655
3/29	98		77	
3/30	79		100	
3/31	40		40	
4/1	78		75	
4/2	45		47	
4/3	48		26	
4/4	28	416	16	381
4/5	70		64	
4/6	115		85	
4/7	73		80	
4/8	73		122	
4/9	92		76	
4/10	163		180	
4/11	31	617	19	626
4/12	69		74	
4/13	48		59	
4/14	17		34	

<u>St. Johns Landfill</u>			<u>McFarlane's Bark</u>	
Date	Daily	Weekly	Daily	Weekly
4/15	40		44	
4/16	74		71	
4/17	130		77	
4/18	68	446	60	428
4/19	90		48	
4/20	49		93	
4/21	93		64	
4/22	68		94	
4/23	78		88	
4/24	149		106	
4/25	161	688	53	546
4/26	130		101	
4/27	113		93	
4/28	103		147	
4/29	125		82	
4/30	128		119	
5/1	177		187	
5/2	128	904	30	759
5/3	83		98	
5/4	68		85	
5/5	106		78	
5/6	127		61	
5/7	87		69	
5/8	134		62	
5/9	66	671	6	459
5/10	78		47	
5/11	65		59	
5/12	90		72	
5/13	71		96	
5/14	110		95	
5/15	244		125	
5/16	189	847	113	607
5/17	104		60	
5/18	55		98	
5/19	195		65	
5/20	147		66	
5/21	119		110	
5/22	448		136	
5/23	198	1,266	84	619
5/24	135		103	
5/25	150		98	
5/26	171		131	
5/27	128		120	
5/28	125		94	
5/29	199		148	
5/30	105	1,013	75	769
5/31	105		-	
6/1	151		113	
6/2	108		98	
6/3	67		106	



		<u>St. Johns Landfill</u>		<u>McFarlane's Bark</u>		
		<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
		6/4	103		88	
		6/5	129		140	
		6/6	88	751	52	597
		6/7	70		92	
		6/8	113		104	
		6/9	79		108	
		6/10	140		89	
		6/11	129		111	
		6/12	64		47	
		6/13	46	641	27	578
		6/14	93		178	
		6/15	122		124	
		6/16	113		122	
		6/17	106		145	
		6/18	105		80	
		6/19	189		196	
		6/20	83	811	35	880
		6/21	113		74	
		6/22	94		179	
		6/23	142		137	
		6/24	120		132	
		6/25	100		146	
		6/26	112		84	
		6/27	118	799	72	824
		6/28	205		107	
		6/29	190		128	
Phase III		6/30	165	560	163	398
Phase IV		7/1	157		139	
		7/2	93		203	
		7/3	128		60	
		7/4	44	982	18	420
		7/5	129		19	
		7/6	158		149	
		7/7	73		162	
		7/8	124		215	
		7/9	109		271	
		7/10	180		213	
		7/11	119	892	36	1,065
		7/12	119		106	
		7/13	90		148	
		7/14	128		168	
		7/15	135		147	
		7/16	95		202	
		7/17	157		199	
		7/18	87	811	52	1,022
		7/19	125		104	
		7/20	140		117	
		7/21	134		149	
		7/22	149		175	
		7/23	142		205	

<u>St. Johns Landfill</u>			<u>McFarlane's Bark</u>	
Date	Daily	Weekly	Daily	Weekly
7/24	147		181	
7/25	106	943	31	962
7/26	129		140	
7/27	100		143	
7/28	85		180	
7/29	154		144	
7/30	93		118	
7/31	105		81	
8/1	73	739	94	900
8/2	146		129	
8/3	187		72	
8/4	146		144	
8/5	148		164	
8/6	161		131	
8/7	112		126	
8/8	73	973	87	853
8/9	90		87	
8/10	140		127	
8/11	66		192	
8/12	103		115	
8/13	107		147	
8/14	77		181	
8/15	84	667	64	913
8/16	89		149	
8/17	104		171	
8/18	90		188	
8/19	122		205	
8/20	103		110	
8/21	123		150	
8/22	55	686	90	1,063
8/23	135		116	
8/24	85		140	
8/25	90		130	
8/26	134		129	
8/27	123		127	
8/28	91		113	
8/29	42	700	26	781
8/30	62		140	
8/31	50	<u>112</u>	160	<u>300</u>
9/1			114	
9/2	(Total	20,015)	49	19,318
9/3			107	(Subtotal)
9/4			117	
9/5			49	548
9/6			No	
9/7			137	
9/8			140	
9/9			85	
9/10			54	
9/11			88	

	<u>St. Johns Landfill</u>		<u>McFarlane's Bark</u>	
<u>Date</u>	<u>Daily</u>	<u>Weekly</u>	<u>Daily</u>	<u>Weekly</u>
9/12			17	521
9/13			141	
9/14			296	
9/15			226	
9/16			133	
9/17			139	
9/18			99	
9/19			63	1,097
9/20			69	
9/21			94	
9/22			81	
9/23			154	
9/24			137	
9/25			84	
9/26			29	<u>648</u>
9/27			131	
9/28			134	22,432
9/29			127	(Total)
9/30			138	

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## PROJECT SUMMARY

### Promotion and Education

The radio spots aired in April and May seemed to have had an impact on quantities of yard debris recovered and the number of participants in Phase III of the project. At St. Johns Landfill, for example, yard debris quantities and participation peaked in May. The number of calls to Metro's Recycling Switchboard also peaked in this time.

Backyard burning was allowed from the first week in March until the last week in June and the weather started improving in the last week of April. Quantities of yard debris received at both McFarlane's and St. Johns generally averaged higher during Phase IV than during Phase III. Participation at McFarlane's also was higher in Phase IV. It is difficult to determine how much of the increased participation in Phase IV was due to the fact that backyard burning was prohibited.

The Steering Committee recommended that Metro conduct television promotion for Phase III so funds were earmarked for the production of two public service announcements (PSA). However, obtaining qualified companies and production of the PSAs took longer than estimated so the PSAs were ready to be aired by the end of Phase IV.

For Fall 1982 (Phase V), the television PSAs will be aired and a newspaper campaign will be conducted to promote the existing receiving centers. The effectiveness of these two media tools will be monitored and evaluated.

### Collection Alternatives

The three case studies demonstrated had varying degrees of success. Since the clean-up in Beaverton and several clean-ups in the City of Portland were staffed by volunteers, actual costs for these alternatives may be higher than those listed. A summary of the three case studies are as follows:

<u>Case Study</u>	<u>No. of Residences</u>	<u>Project Participants</u>	<u>Quantity Collected</u>	<u>Cost</u>
Portland	20,000 (est.)	N.D.	1,256 cu yd	\$1,836 <sup>1</sup> (\$1-3/cu yd)
Beaverton	15,175	1,500	1,800 cu yd	\$2,515 (\$1.40/cu yd)
Waste-Go	726	92	45 cu yd	\$235.85 (\$5.25/cu yd)

N.D.=No Data

<sup>1</sup>Does not include administration costs.

TABLE 14

BURNING AND WEATHER CONDITIONS

<u>PHASE</u>	<u>WEEK NO.</u>	<u>MONTH</u>	<u>WEEK ENDING</u>	<u>WEATHER</u>	<u>BURNING ALLOWED</u>
III	1	March	6-7	Fair	3/6 - half day 3/7 - no
	2		13-14	Good	3/13 - all day 3/14 - all day
	3		20-21	Exc.	3/20 - half day 3/21 - no
	4		27-28	Good	3/27 - all day 3/28 - all day
	5	April	3-4	Stormy	4/3 - all day 4/4 - all day
	6		10-11	Good	4/10 - half day 4/11 - no
	7		17-18	Rain	4/17 - half day 4/18 - half day
	8		24-25	Exc.	4/24 - half day 4/25 - half day
	9	May	1-2	Exc.	5/1 - no 5/2 - half day
	10		8-9	Good	5/8 - all day 5/9 - all day
	11		15-16	Good	5/15 - half day 5/16 - half day
	12		22-23	Good	5/22 - all day 5/23 - half day
	13		29-30	Exc.	5/29 - half day 5/30 - half day
	14	June	5-6	Good	6/5 - all day 6/6 - half day
	15		12-13	Good	6/12 - all day 6/13 - all day
	16		19-20	Good	no
	17		26-27	Exc.	no

<u>PHASE</u>	<u>WEEK NO.</u>	<u>MONTH</u>	<u>WEEK ENDING</u>	<u>WEATHER</u>	<u>BURNING ALLOWED</u>
IV	1	July	3-4	Fair	no
	2		10-11	Good	no
	3		17-18	Good	no
	4		24-25	Good	no
	5		31-1	Fair	no
	6	August	7-8	Rain	no
	7		14-15	Fair	no
	8		21-22	Good	no
	9		28-29	Rain	no
	10	September	4-5	Rain	no
	11		11-12	Rain	no
	12		18-19	Rain	no
	13		25-26	Rain	no

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### Processing Alternatives

The Steering Committee expressed concern that local receiving/processing sites are lacking in the east, west and southwest areas of the District. Grimm's Fuel approached the Committee to request funds for starting up a receiving site off of Oregon Highway 99W, west of Tigard. The Committee recommended Grimm's Fuel for supplying the service of receiving and processing yard debris.

On September 1, 1982, Waste By-Products opened a processing center at I-5 and Columbia Boulevard in north Portland. Metro agreed to divert all loads carrying separated yard debris from St. Johns to the north Portland site. When the reduced rate expired on September 1, 1982 at St. Johns Landfill, Metro started charging yard debris customers the full disposal fee and worked with the landfill operator to segregate yard debris brought to the public transfer area. Drop boxes were filled with yard debris and hauled to the Waste By-Products site for processing. A formal agreement is being worked out to continue the diversion of yard debris from St. Johns Landfill.



METROPOLITAN SERVICE DISTRICT  
527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

## MEMORANDUM

Date: May 26, 1983  
To: Metro Council  
From: Rick Gustafson, Executive Officer  
Regarding: SUGGESTIONS REGARDING COUNCIL POLICY PRIORITIES

It appears with the adoption of the FY 1983-84 Budget there are three main items of work for the Council to accomplish between now and the end of FY 1983-84. These items include:

1. A decision on future funding for the Zoo and general government operations for Metro.
2. Completion and adoption of the Solid Waste Systems Plan and the Zoo Master Plan.
3. Start of the Project Initiative work which, at a minimum, should review Metro's involvement in regional jail, park, and library services.

In order to accomplish such tasks in a timely fashion, it is important that all concerned--Council members and staff--focus their attention and effort as much as possible. To facilitate completing these three items, it is suggested that each of the standing committees be utilized for the development of information, analysis and a recommendation to the Council for subsequent action. Given the subject nature of these items, I recommend the following committee and staff assignments:

<u>Item</u>	<u>Committee</u>	<u>Staff Responsible</u>
Future Funding	Coordinating	Carlson/Rich/Sims
Solid Waste Systems/Zoo Master Plans	Services	Solid Waste and Zoo staff
Project Initiatives	Development	Barker/Carlson

At the May 5th Council meeting, the topic of committee work programs was raised. It seems to me that the work identified above is of such critical importance and of sufficient substance to occupy most of the attention and energy of these committees. I suggest that the Presiding Officer and I meet regularly to determine those day-to-day items that might go directly to the Council for consideration and decision, thus freeing up committee time or the time of committee members to work on the critical items listed above.



Metro Council  
May 26, 1983  
Page Two

Some additional comments regarding the work items:

Future Funding: It is crucial this effort get underway as soon as possible. A Council decision on the type and amount of a levy for the May primary should be made by the end of October 1983. The decision on the type of levy might be made earlier. It is my hope that the Coordinating Committee undertake this assignment as soon as possible. I also recommend that the Committee expand to include five citizens, some of which might be drawn from the citizen members of the budget committee. Those people should be able to utilize their familiarity with our fiscal system and knowledge of our functions to offer a broad point of view on future funding options. I intend to devote much of my time to this effort and participate actively with this committee. The work of this group will serve as the basis of a recommendation to the Council for decisions on future funding for the Zoo and general government activities.

Solid Waste Systems and Zoo Master Plans: Currently, processes have been established for the conduct and completion of these activities. The processes involve the Services Committee already and I am merely reiterating their priority.

Project Initiatives: The Council must determine a policy for Metro's participation in any new initiative. I suggest that the Development Committee be utilized for hammering out the details of the policies and priorities for the Council's consideration. Ray Barker is preparing some thoughts and will have my full support. A concentrated effort by the Development Committee would be productive.


I feel this is a reasonable statement of Metro priorities based on the budget deliberation. Please respond to this proposal as soon as possible, as I feel time is passing quickly.

RG:ef



METROPOLITAN SERVICE DISTRICT  
527 SW. HALL ST., PORTLAND, OR. 97201, 503/221-1646

## MEMORANDUM

Date: May 26, 1983  
To: Metro Council  
From: Keith Lawton   
Regarding: Transportation Planning Software and Hardware Purchase Contract -- Consent Agenda Item 6.5

This contract has been reviewed by ODOT, FHWA and INRO since the preparation of the Council package. There are a few minor changes in the body of the contract which are indicated in this replacement by an underline where language has been added and (parentheses) where language has been removed.

Articles XIII, XIV and XV have been added for compliance with federal requirements as has Exhibit "B"; these are federal boilerplate and have no impact on the contract.

None of the changes are substantive; they are primarily to remove minor inconsistencies in the previous draft.

KL:lmk

Attachment

DRAFT

LABOR AND MATERIAL CONTRACT

THIS CONTRACT is executed this \_\_\_\_\_ day of \_\_\_\_\_, 1983, between the METROPOLITAN SERVICE DISTRICT, a municipal corporation, 527 S.W. Hall Street, Portland, OR 97201, hereinafter referred to as "METRO," and INRO SYSTEMS, INC., 279 E. 44th Street, Suite 14 J, New York, NY 10017, hereinafter referred to as "CONTRACTOR."

THE PARTIES AGREE AS FOLLOWS:

ARTICLE I

SCOPE OF WORK

I. CONTRACTOR shall perform the labor and/or deliver to METRO the materials described in the Scope of Work attached hereto as Exhibit "A." All labor and materials shall be provided in accordance with accepted standards of quality and the Scope of Work.

II. METRO is not responsible for payment of any materials delivered to the site for the CONTRACTOR's use.

ARTICLE II

COMMENCEMENT AND EXPIRATION OF CONTRACT

This Contract shall commence when it has been signed by both parties and will be completed no later than [July] January 30, [1983] 1984.

ARTICLE III

CONTRACT SUM AND TERMS OF PAYMENT

I. METRO shall compensate the CONTRACTOR for services performed and materials supplied in the fixed sum of FIFTY SEVEN

THOUSAND ONE HUNDRED FIVE AND NO/100THS (\$57,105.00) DOLLARS.

II. The Contract Sum is payable as detailed in Exhibit "A."

#### ARTICLE IV

##### LIABILITY AND INDEMNITY

CONTRACTOR is an independent contractor and assumes full responsibility for the content of its work and performance of CONTRACTOR'S labor, and assumes full responsibility for all liability for bodily injury or physical damage to person or property arising out of or related to this Contract, and shall indemnify and hold harmless, METRO, its agents and employees, from any and all claims, demands, damages, actions, losses, and expenses, including attorney's fees, arising out of or in any way connected with its performance of this Contract. CONTRACTOR is solely responsible for paying CONTRACTOR'S subcontractors. Nothing in this Contract shall create any contractual relation between any subcontractor and METRO.

#### ARTICLE V

##### TERMINATION

METRO may terminate the Personal Services portion of this Contract upon giving CONTRACTOR seven (7) days written notice. In the event of termination, CONTRACTOR shall be entitled to payment for work performed to the date of termination. METRO shall not be liable for indirect or consequential damages. Termination by METRO will not waive any claim or remedies it may have against CONTRACTOR.

#### ARTICLE VI

##### INSURANCE

CONTRACTOR shall maintain such insurance as will protect

CONTRACTOR from claims under Workers' Compensation acts and other employee benefits acts covering all of CONTRACTOR'S employees engaged in performing the work under this Contract; from claims for damages because of bodily injury, including death; and from claims for damages to property, all with coverage limits satisfactory to METRO. This insurance must cover CONTRACTOR'S operations under this Contract, whether such operations be by CONTRACTOR or by any subcontractor or anyone directly or indirectly employed by either of them.

#### ARTICLE VII

##### TITLE AND RISK

The CONTRACTOR retains title of the Equipment until such time as the purchase price is paid in full. METRO will maintain the Equipment in top condition to the benefit of the CONTRACTOR from the date of installation until the title is transferred and METRO will take all the necessary steps to protect the Equipment against damage and to protect the CONTRACTOR'S title.

#### ARTICLE VIII

##### DELIVERY AND INSTALLATION

The Equipment will be delivered at METRO's premises. The installation [will] may be done by PIXEL personnel if a Service Assurance Agreement is signed by METRO. Otherwise METRO will do its own installation.

#### ARTICLE IX

##### WARRANTY

The Equipment is guaranteed by PIXEL, Inc., for a period of thirty (30) days following the installation date.

The CONTRACTOR agrees that the contents of the EMME 2 programs provided by virtue of this Contract will be reliable and sure. The CONTRACTOR undertakes to correct unforeseen minor errors in the program at no cost within a period of six (6) months after installation. However, METRO recognizes and expressly agrees that the CONTRACTOR will be in no way held responsible for any loss or secondary or indirect damage which at any time results or originates from the use or operation of any such program, or a defect in the Equipment, or false or incorrect data, or any other cause.

The CONTRACTOR agrees that the description of EMME 2 is as contained in the EMME 2 User's Manual and that the system as described when implemented on the PIXEL can handle a network size of 400 zones, 2,800 nodes and 8,000 links. METRO agrees that there are minor additions needed to complete the package on the PIXEL and prepare final documentation. The CONTRACTOR agrees that these minor additions and final system documentation will be delivered and installed within three (3) months of the date of initial installation at no extra cost, other than travel and per diem and \$300.00 per day for the duration of the final installation, not to exceed five (5) days.

#### ARTICLE X

##### GENERAL CONDITIONS

Payment of the purchase price of the EMME 2 programs gives METRO the non-exclusive right to use the programs in conjunction with the equipment furnished by the CONTRACTOR. METRO agrees not to reproduce or sell the contents of the programs or allow it to be

used on any equipment other than that provided. The CONTRACTOR expressly reserves complete title and rights to the contents of the programs and METRO recognizes and agrees that the CONTRACTOR has exclusive rights to reproduce, publish, sell and distribute in any manner to any other persons, the contents of the programs.

This Contract binds the contracting parties, their administrators, successors and other legal representatives.

At the time of signing this Contract, delivery of the goods mentioned to METRO has not taken place.

#### ARTICLE XI

##### PUBLIC CONTRACTS

CONTRACTOR shall comply with all applicable provisions of ORS Chapters 187 and 279 and all other conditions and terms necessary to be inserted into public contracts in the state of Oregon, as if such provisions were a part of this Contract. CONTRACTOR acknowledges receipt of copies of ORS 187.010-.020 and 279.310-430.

#### ARTICLE XII

##### ATTORNEY'S FEES

In the event of any litigation concerning this Contract, the prevailing party shall be entitled to reasonable attorney's fees and court costs, including fees and costs on appeal to an appellate court.

#### ARTICLE XIII

##### ACCESS AND RETENTION OF RECORDS

CONTRACTOR shall maintain accounting records and other evidence pertaining to all costs incurred in the performance of this

Contract and shall make the records available at its office at all reasonable times during the contract period and for three (3) years from the date of the final payment of federal funds to the Oregon State and Federal governments with respect to the study. Such accounting records and other evidence pertaining to the costs incurred will be made available for inspection by State, Federal Highway Administration, or any authorized representative of the Federal Government, and copies thereof shall be furnished, if requested.

#### ARTICLE XIV

##### INTEREST OF MEMBERS OF OR DELEGATES TO CONGRESS

No member of or delegate to the Congress of the United States shall be admitted to any share or part of this contract or to any benefit arising therefrom.

#### ARTICLE XV

##### PROHIBITED INTEREST

No member, officer, or employee of the public body or of a local public body during his tenure or one-year thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.

#### ARTICLE [XIII] XVI

##### MISCELLANEOUS

This Contract represents the entire and integrated agreement between METRO and CONTRACTOR and supersedes all prior negotiations, representations or agreements, either written or oral. This Contract may be amended only by written instrument signed by both METRO and CONTRACTOR. The law of the state of Oregon



shall govern the construction and interpretation of this Contract.  
This Contract may not be assigned or transferred without METRO's  
written consent. Title VI Assurances are shown in Exhibit "B."

CONTRACTOR

METROPOLITAN SERVICE DISTRICT

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
METRO General Counsel

KL/srb  
8531B/338  
05/26/83

EXHIBIT "A"  
SCOPE OF WORK  
AND  
TERMS OF PAYMENT

1. SCOPE OF WORK

The CONTRACTOR shall cause to be delivered the hardware and software described in the list which follows; the CONTRACTOR will be responsible for the installation of EMME 2 and for its satisfactory performance on the PIXEL hardware.

2. HARDWARE AND SOFTWARE LIST AND PRICE QUOTATION

Equipment

10 MHZ 68000 Based Central Processing Unit	
Main Memory of 2Mb Zero Wait State DRAM	
I/O Processor Board with 128 Kb Memory	
Winchester Disk Controller	
One 40 Mb Winchester Disk Drive	
Double Density Diskette Controller	
One 630 Kb 8" Diskette Drive	
PIXEL Terminal Controller (eight ports)	
Eight Asynchronous RS-232 Serial Ports	
Two Parallel Ports	\$24,116.00
Back-Up/Communications Combination	4,240.00
(Dual Function Controller Tape	
Back-Up Kit Communications Serial Board)	
2 PIXEL Terminals with Green	
Phosphor Terminal	3,650.00
2 PIXEL Terminals with Green	
Phosphor Terminal Option	
and IBM PC Keyboard	
Cables - 3 of 50 ft; 2 of 100 ft	<u>450.00</u>
Subtotal: Equipment	\$32,456.00

### Languages/Utilities

UNIX O/S and language ("C")	
SVS PASCAL	
SVS FORTRAN 77	
SMC BASIC or SVS BASIC Plus	
User's Manuals	\$ 3,879.00

PIXEL Word Processor	
PIXEL Spreadsheet	
Commjob Communications Software	
UNIFY Database System	
User's Manuals	\$ 4,080.00

Subtotal: Language/Utilities	\$7,959.00
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EMME 2	\$12,500.00
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Total: PIXEL Hardware/Software	\$40,415.00
EMME 2	12,500.00
Total	\$52,915.00

3. The equipment listed in 2 above shall be delivered no earlier than July 1, 1983, and no later than July 30, 1983, provided that the Contract is signed prior to June 7, 1983. Delay in contract completion shall move that last delivery day by one day for each day's delay.
4. CONTRACTOR will provide as part of the initial EMME 2 installation, five days of work and training at the purchaser's site. The purchaser is to pay travel costs and a per diem of \$90.00 per day for the five days. This cost not to exceed \$1,300.00. (One airfare at \$850.00, \$90.00 x five days per diem.)
5. CONTRACTOR will provide as part of the final EMME 2 installation, a maximum of five (5) paid (fee for service) days of staff support at \$300.00 per day and up to six (6) total person days of support. This requires one airfare and six days of per diem at \$90 per day. Cost not to exceed \$2,890.00 (one airfare at \$850.00, six days at \$90.00 per diem and five days at \$300.00 per day).

### Terms and Arrangement of Payment

1. METRO agrees to pay CONTRACTOR TEN THOUSAND TWO HUNDRED AND NO/100THS (\$10,200.00) DOLLARS, being approximately 25 percent of the PIXEL purchase, at the time of Contract initiation (signing). This is an advance to secure the purchase in a timely manner.

2. METRO agrees to place the remainder of the PIXEL purchase cost in Escrow at the First Interstate Bank of Oregon, N.A., being the sum of THIRTY THOUSAND TWO HUNDRED FIFTEEN AND NO/100THS (\$30,215.00) DOLLARS to be released under joint signature of METRO and CONTRACTOR within thirty (30) days of receipt and satisfactory installation of equipment in Portland, or provide the CONTRACTOR with a letter of credit or assurance from the above bank, whichever is satisfactory to the CONTRACTOR.
3. METRO agrees to pay the sum of THIRTEEN THOUSAND EIGHT HUNDRED AND NO/100THS (\$13,800.00) DOLLARS to the CONTRACTOR, being the cost of the EMME 2 package and the travel and per diem costs of one CONTRACTOR representative for five days to configure and install the EMME 2 system on the PIXEL, within thirty (30) days of initial installation. This subject to METRO's approval that EMME 2 is operational and meets described performance criteria.
4. METRO agrees to pay up to a maximum of TWO THOUSAND EIGHT HUNDRED NINETY AND NO/100THS (\$2,890.00) DOLLARS within thirty (30) days of the final installation of the updated software.

8531B/338

EXHIBIT "B"

ASSURANCE OF COMPLIANCE WITH TITLE VI OF THE  
CIVIL RIGHTS ACT OF 1964

During the performance of this Contract, the CONTRACTOR, for itself, its assignees and successors in interest (hereinafter referred to as the "CONTRACTOR") agrees as follows:

1. Compliance with Regulations: The CONTRACTOR shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this Contract.
2. Nondiscrimination: The CONTRACTOR, with regard to the work performed by it during the Contract, shall not discriminate on the grounds of race, color, sex or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.
3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the CONTRACTOR for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the CONTRACTOR of the CONTRACTOR's obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of race, color, sex or national origin.
4. Information and Reports: The CONTRACTOR shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration (FHWA) to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information is required or the CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information, the CONTRACTOR shall so certify to the Recipient, or FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of the CONTRACTOR's noncompliance with the nondiscrimination provisions of this Contract, the Recipient shall impose such contract sanctions as

it or UMTA may determine to be appropriate, including, but not limited to:

- a. Withholding of payments to the CONTRACTOR under the Contract until the CONTRACTOR complies, and/or
  - b. Cancellation, termination or suspension of the Contract, in whole or in part.
6. Incorporation of Provisions: The CONTRACTOR shall include the provisions of paragraph (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONTRACTOR shall take such action with respect to any subcontract or procurement as the Recipient or UMTA may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the CONTRACTOR may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

8531B/338

re: SB593

3103 NW Wilson St.  
Portland, Ore. 97210  
April 28, 1983

Mr. Gary Esgate, Committee Administrator  
Local Government and Elections Committee  
Oregon Senate  
S219 Capitol Building  
Salem, Oregon

Dear Mr. Esgate:

I enclose our amended bill for changing the appointment of the Tri-Met Board. It is designed to drop into the existing body of statutes dealing with Transit Districts without requiring change of the other, already existing parts. This was accomplished by defining its applicability in such a way that it can only apply to the Tri-Met District of the Portland region and no other (see beginning of Sec. 2). We hope this will make it more understandable to Legislative Council, and more readily comprehensible in every way.

In consulting with Dr. Cease at PSU about the technical matters we wanted clarification on, it appeared that we had achieved a point of development for the bill where he felt that Legislative Counsel could appropriately take over. He did discuss the broad governance implications with me, however, and appears uneasy about combining the elective and appointive methods as we have done. That will have to be discussed in judging the merits of the bill before the committee. I think our position will be that there is an evolutionary process in the development of regional government and regional service delivery, that the appointment by the Governor is the "incubation" phase, and that our method of appointment of transit district administration is a logical next step. No one knows what sophisticated voters in a fully functioning regional government will decide, in the way of final decisions about how the transit system should be governed. In the meantime, however, the Governor-appointment phase has gone on long enough.

It will be our task to familiarize committee members and all the other members of the legislature about the details of this bill. We will begin now, and extend our sincere thanks to you for allowing us this time to re-write. Listed below are persons whom Legislative Counsel can consult about intent.

Sincerely,

*Chris Wrench*  
Chris Wrench 227-4671  
Citizens for Better Transit

Aloha Shade, work 241-8601 home 284-9466  
Doug Allen, work 238-5831 home 232-1741  
Ray Polani, work 222-9525 home 244-7797

REVISED SENATE BILL 593

Changes method of appointment of directors of board of mass transit district located in standard metropolitan statistical area with a population of more than 400,000. Requires one director to be elected at-large in district and to serve as president of mass transit district board. Requires Governor to appoint one member of the board, at-large from the district, and the majority of the council of the metropolitan service district appoints a second at-large member of the board from the district. Requires each of the boards of commissioners in the counties in the district to appoint a mass transit board director who lives within the district. Provides that city council of most populous city in the district appoints one board member who resides within the city. Provides that existing districts affected by Act have their boards appointed as provided in Act not later than 90 days after effective date of Act. Provides that president of the board of affected district appoints or removes general manager of district. Requires concurrence of at least three other board members for removal of general manager by president of board.

SECTION 1. Section 2 of this Act is added to and made a part of ORS 267.010 to 267.390

SECTION 2. (1) When a district exists on January 1, 1984, or formation of a district is initiated by a resolution adopted and filed under ORS 267.105, in a standard metropolitan statistical area with a population of more than 400,000, the board of directors of the district shall consist of seven members. All directors shall be electors and residents of the district, or if the taxed area is less than the entire district, the taxed area, and shall not be elected officials of any other public body.



(2) One director, who shall be president of the board, shall be elected by a plurality from the district at-large, or if the taxed area is less than the entire district, the taxed area, on a nonpartisan basis.

(3) The other six directors shall be appointed. The board of county commissioners of each county within the district shall each appoint, by a majority vote, one director. The city council of the most populous city in the district shall appoint, by a majority vote, one director. The governor shall appoint one director subject to confirmation by the Senate pursuant to section 4, Article III of the Oregon Constitution. This person shall be a regular user of the services provided by a mass transit system. The council of metropolitan service district functioning in any part of the district shall appoint, by a majority vote, one director.

(4) The term of office of a director is four years, except that the term of office of the directors initially appointed under the provisions of this 1983 Act by the Governor, the metropolitan service district, and the most populous city in the district shall expire on the first Tuesday in January of the next odd-numbered year following the date of appointment, and the term of office of the remaining directors, including the president of the board, initially appointed or elected under the provisions of this 1983 Act shall expire on the first Tuesday in January of the second odd-numbered year following the date of appointment.

Before the expiration of the term of an appointed director, the director's successor shall be appointed.

No director shall serve more than two consecutive terms, including any initial term of less than four years. In case of a vacancy for any cause, a person shall be selected to serve for the unexpired term in accordance with subsection (2) or (3) of this section as appropriate. An

appointed director whose term expires shall continue to serve until the appointment of a successor.

(5) The president of the board may be recalled as provided in ORS \_\_\_\_\_. A director appointed by a board of county commissioners may be removed by a two thirds vote of the appointing board of county commissioners. A director appointed by a city council may be removed by a two thirds vote of the appointing city council. The director appointed by the governor shall serve at the pleasure of the governor. The director appointed by the council of a metropolitan service district may be removed by a two thirds vote of the appointing metropolitan service district council.

(6) Notwithstanding subsection (3) of this section, the office of president of the board shall be initially filled at the first regularly scheduled district-wide election . . . (make this conform to existing law). All of the other directors must be appointed within 90 days of the effective date of this legislation. In the case of a district existing on the effective date of this legislation, the tenure of office of the members of the existing board shall cease (standard form)

BUDGET COMMITTEE  
INFORMATION AND ACTION ITEMS

May 5, 1983

SOLID WASTE

Action:

1. Add a subprogram under systems planning to update the waste reduction plan. This includes adding a Planner 1 and adequate funds to staff a recycling committee. The expense (\$21,910) should be funded from money targeted for curbside recycling (\$17,000) and the contingency (\$4,910).
2. Delete transfer station capital funds.
3. Provide capital funds for yard debris.

ZOO

Action:

Reclassify advertising expenses in the Public Relations Division to more descriptive categories.

PLANNING FUND

Transportation

Information Requested:

Proposal on alternatives to the elderly and handicapped program.

Action:

Purchase rather than lease the proposed new micro-computer. Transfer funds for the additional upfront costs from the General Fund Contingency (\$9,962).

Development Services

Action:

1. Amend the proposed infrastructure financing program to emphasize technical assistance to local jurisdictions and regional consensus building on financing priority public facilities under the revised name of urban services financing.
2. Incorporate support to the program initiatives effort in the work program to conduct further work if a role for Metro is determined and funding is identified.

## Criminal Justice

### Information Requested:

Regional jails program option including recommended funding source.

### GENERAL FUND

#### Public Affairs

### Action:

1. Retain Receptionist function in Public Affairs, delete from Budget & Administrative Services.
2. Revise work program to provide grant research support to program initiatives work.

#### Finance & Administration

### Action:

Budget note to direct Executive Officer to review the size and organizational structure of the administrative and support positions in Finance & Administration to assess the staff level.

#### Data Processing

### Action:

Purchase rather than lease the proposed new micro-computer.

#### Executive Management

### Action:

Budget the Council Clerk and related expenses in Executive Management (\$18,620 Personal Services, \$200 Materials & Services, and \$650 Capital Outlay).

### Council

### Information Requested:

Submit Council Assistant's work program to determine if additional funds are needed or if program should be reduced.

### Action:

1. Revise the Council Assistant work program to include a program initiatives element.
2. Transfer costs from Council Clerk and related expenses to Executive Management.

## SPECIFIC BUDGET ISSUES

### Action:

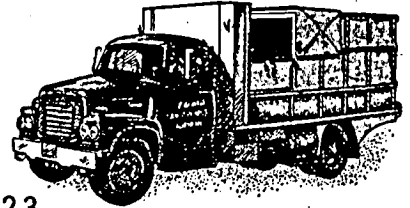
1. Award all non-Zoo employees a one percent cost of living adjustment (COLA) plus three additional personal holidays. The extra holidays are awarded for one year only. No COLA should be given to Zoo employees.
2. Develop and implement management policies for the allocation of tuition/training, travel, and meetings and conferences monies. Attention should be given to the equitable access to growth opportunities among all organizational units, all types of positions and all salary ranges. A maximum per person should be considered. Report progress on implementation at the first quarter of FY 1983-84.
3. Direct the Executive Officer to develop a regional program initiatives work program with three elements: 1) policy analysis by the Council Assistant, funding research support by Public Affairs and implementation by Development Services.
4. Direct the Executive Officer to provide quarterly reports to the Council on program performance and financial status. Special attention should be given to the following items:
  - The revenues generated by the Data Resource Center.
  - Progress of the Data Resource Center in providing services, with monitoring of who uses the services.
  - Progress in carrying out the urban services financing program in Development Services.
  - Progress in establishing and carrying out the program initiatives work as coordinated between the Council, Executive Management, Public Affairs and Development Services.
  - The funding status of Criminal Justice.
5. Direct the Executive Officer to report the status of the employee benefits program prior to renewing current contracts.

### NEW DISCUSSION ITEMS

1. Revised budget estimates for the Transportation Technical Assistance Fund.
2. Level of Detail of Appropriations.

JS/srb  
8508B/341  
05/05/83

**WASHINGTON COUNTY  
REFUSE DISPOSAL ASSOCIATION, Inc.**



P. O. Box 567 Hillsboro, Oregon 97123

April 28, 1983

Ms. Cindy Banzer, Chairperson  
Metropolitan Service District  
527 S. W. Hall  
Portland, Oregon 97204

Re: 1983-1984 Budget - Washington County Transfer  
Station Facility

Dear Chairperson Banzer and Members of the Council:

We understand that the proposed Metro budget for 1983-1984 includes an expenditure item in excess of \$900,000 for a Washington County Transfer Station facility. At the regular meeting of the Washington County Collectors Association last evening, the proposed budget item was discussed. The membership is concerned that the inclusion of the item in the budget will necessarily increase the cost of disposal at a time when an increase is unnecessary. Specifically, the Association understands that the Washington County Solid Waste Advisory Committee together with the Board of Commissioners are considering options for assisting Metro in the location of a landfill site in Washington County or the provision of mini-transfer station facilities to accommodate public needs for disposal. The membership further understands that the Metro Citizens Advisory Committee for the proposed Washington County transfer station facility has not endorsed or recommended a Metro-Washington County transfer station facility.

The membership of the Association adopted a motion directing me to request that you consider deleting the Washington County transfer station facility from Metro's 1983-1984 budget and until such time as the alternatives identified above have

Ms. Cindy Banzer, Chairperson  
Metropolitan Service District  
April 28, 1983  
Page Two

been reviewed by Metro and Washington County and decisions made to proceed with any of the alternatives or the proposed transfer station facility.

Yours very truly,

Drew S. Ryan, Jr.

eis

cc: Membership of Washington County  
Refuse Disposal Association



## METROPOLITAN SERVICE DISTRICT

Providing Zoo, Transportation, Solid Waste and  
other Regional Services

527 S.W. Hall St., Portland, OR 97201 • 503/221-1646

**Bruce Etlinger**  
Councilor, District 10

Columbia South Shore, Cully,  
Gateway, Hazelwood,  
Maywood Park, Parkrose,  
Rocky Butte, Rose City Park,  
Wilkes

2715 NE 61st  
Portland, OR 97213  
284-3371

Date: May 5, 1983  
To: Metro Council  
From: Councilor Bruce Etlinger  
Re: Proposed Community-Based Yard Debris Collection  
Projects During FY 83-84

### Background

The proposed waste reduction budget will promote existing yard debris processing centers with an expenditure of some \$26,000 in contractual services and some \$5,090 of Metro staff resources.

After reviewing the proposed draft of "A Demonstration Project for Recycling Yard Debris," March 1983, I spoke with the Executive Officer and Waste Reduction Manager about budgeting our waste reduction efforts in order to be able to begin implementing the recommendations of the Yard Debris Steering Committee contained in this report. An informal "brainstorming" session with several Councilors and yard debris processors uncovered an interim strategy for FY 83-84 (prior to completion of recycling element of our Solid Waste Systems Plan) as well as some \$23,000 in currently unencumbered funds which could support this activity.

It should be noted that several of the recommendations do not require direct Metro expenditures; i.e., better diversion from disposal facilities, inclusion of separated yard debris in local collection franchises.

From our meeting it was clear that expanding the volume of separated yard material was a key factor in keeping the current processing centers open and economically viable.

The draft yard debris report findings suggest:

"It has been demonstrated that it is less expensive to process and recover yard debris than landfill the material."

Also noted in the report findings was the fact that:

"City sponsored cleanups with volunteer labor and donated equipment were the least costly collection alternatives demonstrated."



Expanding Community-Based Yard Debris Collection

The Executive Officer and Waste Reduction Manager have indicated that some \$23,000 of the \$110,600 for waste reduction contractual services is currently unobligated after an extensive RFP process among franchised jurisdictions who are commencing curbside collection programs for recyclables.

Although my initial concern was the need for a convenient, accessible processing center in east Portland and Multnomah County, I realize that increasing volume for existing centers was achievable via community-based projects.

I propose that \$23,000 be shifted from general contractual services and designated for community-based yard debris collection projects.

The criteria for projects should allow applications by local jurisdictions, neighborhoods or civic groups. These projects should occur next fall and spring and additional criteria for the RFPs should be approved by the Council. I would suggest the following kinds of criteria:

1. Ability of entity to plan and implement project effectively by itself.
2. Lack of accessibility to currently operating yard debris processing centers.
3. Lack of on-route curbside separation and collection for yard debris.
4. Extents that projects defray their own cost via user charges or donated equipment/services.
5. Volunteers or haulers providing home pick up of material for seniors and disabled persons.

After spending a couple of years, between 1977 and 1979, facilitating such neighborhood clean-ups with the City of Portland, I am firmly convinced that such efforts will meet the property code enforcement needs of local jurisdictions, promote community pride, allow Metro to support a popular and visible service to citizens, and remove far more material per dollar spent than any recycling efforts undertaken thus far by this agency.



# Program Overview

METRO Fiscal Year 1983 - 84

Fund: Waste Reduction

Department: Solid Waste

**PROGRAM TITLE:** The program approved by Council will be the program implemented. Yard Debris Steering Committee recommendations adopted by Council will be implemented.

**PROGRAM NARRATIVE:**

**SPECIFIC QUANTIFIABLE TARGETS TO BE ATTAINED ( Include dates, standards to be maintained etc where possible):**

1. IV. Yard Debris
  - A. Provide promotional and technical assistance to Metro yard debris processing centers and measure effectiveness of assistance in meeting waste reduction plan goals by July, 1984.
2.
  - B. Support community based yard debris collection projects in order to increase volume of material diverted from disposal facilities to Metro yard debris processing centers. RFP
3. criterial to be approved by Council.

5 May 1983

TO: Members of The Metropolitan Service District

RE: Waste Reduction: Budget FY 83-84

The League of Women Voters of CRRILO substantially concurs regarding Metro's proposed budget for waste reduction.

The League believes a good, solid waste management plan should be environmentally sound, and, to conserve resources, should provide for maximum recycling.

Since closure of the garbage burner program, Metro must take a long hard look at its total solid waste program. Significant new programs in the budget that we concur with are:

1. The establishment of a waste reduction subcommittee reporting into Metro's Coordinating Committee, including a newly funded staff person. This committee will concentrate on residential recycling including curbside recycling programs.
2. A new grant program which funds local governments to work with franchised private haulers, encouraging and rewarding them in maximizing recycling. This would be in lieu of funding directly organizations like PRT and Sunshine.
3. The funding of two 5-year studies which take a look at how Metro might develop markets for recyclable goods and studies Metro's appropriate role as a government agency in waste reduction (i.e., should it be an educator, promoter, information provider and not a "hands-on" participant?).
4. Revising the Waste Reduction Plan.
5. Research of new revenue sources is critical, especially when user fees can no longer be expected to carry the entire program.

We disagree with the Executive Director's contention that Metro has a 5-year breathing space since receiving the Wildwood landfill site permit from Multnomah County. This permit will be reviewed by LUBA and could be reversed. All other programs designed to divert solid waste (and discourage original generation of same) from landfills should be pursued intensively during this 5-year time span.

Also, we encourage through financial incentives the continuation of a WETA-like waste exchange program which reduces industrial waste. With such a program, "One business's waste can be another business's raw material."

Thank you for your consideration.

Ernestine Francisco  
Solid Waste Chair Designee  
Columbia River Region  
Interleague Organization of  
The League of Women Voters



METROPOLITAN SERVICE DISTRICT  
527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

## MEMORANDUM

Date: May 5, 1983  
To: Metro Council *AK*  
From: Andrew Cotugno, Transportation Director  
Regarding: Proposed FY 84 Transportation Budget

At the May 2 Council Budget Committee, I was asked to present options for Council consideration for the use of \$30,000 currently budgeted for development of an "Elderly and Handicapped Transit Plan." (The budget for this proposed work element includes \$24,000 of federal grant funds plus \$6,000 Tri-Met match and includes funding for .75 FTE of staff at \$19,000 plus \$11,000 overhead transfer to the General Fund.) Presented here are the options available as well as my recommendation for adoption.

Two options are available for Metro's involvement in Elderly and Handicapped planning. In either case, Metro has the federally assigned responsibility for adopting a plan defining how the region will provide "special" service to these disadvantaged groups. The policy issues associated with this charge are as follows:

1. What type of transit service will be provided to meet the needs of the Elderly and Handicapped? This is the functional question dealing with fixed route service versus door-to-door service, lifts on buses, fares, trip purposes that will be served, Tri-Met service vs. contracted service vs. service by other agencies, etc.
2. How much "special" transit service will be provided? This is the "general" financial question dealing with defining the level of public responsibility for serving the Elderly and Handicapped.
3. Who should pay the public cost for the planned "special" transit service? This is the "specific" financial question dealing with the question of funding source.

Regardless of the extent of Metro involvement in Elderly and Handicapped planning, the Metro Council will ultimately be responsible for adopting a plan dealing with these policy issues. The options for Metro involvement are essentially to be a "partner" with Tri-Met

in evaluating the options and selecting the solution that is best for the full community - OR - delegate to Tri-Met the responsibility for evaluating the options and preparing the final plan for ultimate adoption by the Metro Council.

RECOMMENDATION: Retain the currently budgeted \$30,000 for Elderly and Handicapped planning with the intent to carry out a joint evaluation with Tri-Met to define the "special" Elderly and Handicapped service plan.

ALTERNATIVE: Reduce the budget to \$5,000 to allow for staff and Metro Council review and public hearings on the plan developed and recommended by Tri-Met. (Budget would be \$4,000 federal grant plus \$1,000 Tri-Met match.)

If the alternative is selected, \$25,000 is available to transfer to an alternate purpose. Several options for this are as follows:

1. Accelerate LRT studies in the Barbur/Westside Corridor; current proposed Metro budget is \$141,000; this change would increase it 18 percent to \$166,000; and proposed local match would be Metro \$2,500/Tri-Met \$2,500.
2. Increase the budget for the Southwest Corridor study; current proposed budget is \$83,290; this change would increase it 30 percent to \$108,290; and proposed local match would be Metro \$2,500/Tri-Met \$2,500.
3. Increase the Technical Assistance budget to initiate a better service to the local jurisdictions on more of an out-reach basis; the current budget is \$34,100; and this change would increase it 73 percent to \$59,100; proposed local match would be Metro \$5,000.

Of these options, I would recommend increasing the Southwest Corridor study. In the past month, staff has initiated this work element and, based upon an initial definition of the issues to be resolved, the current proposed budget may prove insufficient. The LRT budget appears adequate at this time and the schedule for completion is more dependent upon public and inter-agency decision-making than on staff efforts. The Technical Assistance proposal is very good and would provide a useful local service but is more appropriately funded with local money (dues) than federal money.

ACC:lmk

CC: Rick Gustafson



**METROPOLITAN SERVICE DISTRICT**  
527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

## MEMORANDUM

Date: May 5, 1983  
To: Metro Council  
From: Ray Barker, Council Assistant  
Regarding: Council Assistant Work Plan for FY 1983-84

The Council Coordinating Committee has recommended the following assignments for the Council Assistant during FY 1983-84:

1. Research and recommendations regarding future funding of Zoo.
2. Project/Program initiatives. Analyze issues relating to possible regional responsibilities in the areas of parks, libraries, jails, economic development, energy drainage, etc. Recommend policy in priority areas based on appropriate research.
3. Ongoing budget analysis. Also help Council prepare policy guidelines for shaping next year's budget prior to November when staff and the executive begin budget preparations.
4. Policy review and recommendations regarding solid waste system.

In addition to the specific assignments recommended above, the Council Assistant will be involved in the following:

1. Meetings (preparation, attendance and follow-up).
  - Metro Council
  - Standing Committees
  - Department Heads and Senior Staff
  - Special (hearings, workshops, etc.)
2. Other Related Work
  - Letters, memoranda, resolutions
  - Supervision of Council Secretary
  - Individual requests of Metro Councilors

RB/srb  
8499B/D1



# Transportation Technical Assistance Fund

HISTORICAL DATA		FY 1982-83		PROPOSED BUDGET FY 1983-84		COORDINATING COMMITTEE RECOMMENDATION		COUNCIL APPROVED	
FY 1980-81*	FY 1981-82	FTE	AMOUNT	ACCOUNT #	DESCRIPTION	FTE	AMOUNT	FTE	AMOUNT
296,425	BUDGETED			5100	Resources				
-	IN		16,000		Federal Grants				
-	GENERAL		22,400		OR-09-0029	8,000	6400		
-	FUND		16,000		OR-09-0023	0	0		
-			72,000		OR-09-0020	5,000	4000		
-			25,000		IT-09-0030	0			
-			34,000		OR-19-0005	0			
-			10,000		OR-29-9007 (Clackamas County)	0			
-			133,142		OR-29-9007 (Tri-Met)	0			
-			60,000		McLoughlin Rideshare (Tri-Met)	112,500	84,375		
-			14,500		Flextime (Portland)	7,000	7,000		
-			18,700		Bike Promotion (Portland)	10,000	10,000		
-			57,808		OR-29-9007 (Tri-Met)	5,000	4,250		
-			12,750		OR-29-9004 (Tri-Met)	3,000	2,550		
-			4,000		OR-29-9004 (Washington County)	0			
-			12,000		DEQ	0			
-			8,500		Air Quality (Portland)	<del>12,000</del>	10,730		
0			0		OR-29-9004 (Portland)	0			
0			0		1984 (e) (4)-Alternatives				
0			0		Analysis/DEIS (Tri-Met)	150,000	150,000		
					(e) (4) - Light Rail Transit				
					(Tri-Met)	35,000	181,750		
					(e) (4) - Light Rail Transit				
					(Portland)	20,000	12,750		
296,425			516,800		Total Revenues	367,500	473,805		
					Requirements				
412,166			516,800	7510	Payments to Other Agencies	367,500	473,805		
(115,741)			0	9800	Unappropriated Fund Balance	0	12		
296,425			516,800		Total Requirements	367,500	473,805		

\*Prepared on cash basis. FY 81 Audit.

69698/227-27-3/14



# DETAIL OF FY 1983-84 CONTINGENCY

Proposed Budget Contingency	\$126,380
Additional Overhead Due to COLA	7,111
Computer Purchase	(9,962)
1% COLA	(13,186)
Committee Recommended Contingency	<u>\$110,343</u>
Uncertain Overhead Revenues	(30,000)*
Commitment to Maintain Land	
Use Program if Grants Not Received	(18,900)
3% Contingency, Management Policy	(59,252)
"Uncommitted" Contingency	<u>\$2,191</u>

---

\*Overhead revenues are uncertain for two reasons: 1) some grants may not be received, and 2) the overhead is only an estimate. The uncertain revenues are detailed as follows:

LCDC	\$11,000
Criminal Justice	33,000
3% Overhead Rate Variance	<u>18,000</u>
	\$62,000

The \$62,000 represents a worst case scenario. It is reasonable to assume that our exposure is about \$30,000.

JS/srb  
8524B/341  
05/05/83

# PASSO

PO Box 66193

Portland, Or 97266

MAY 5, 1983

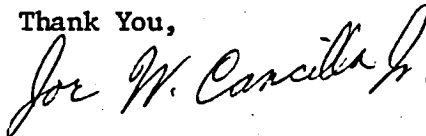
TO THE METRO COUNCIL  
ATTENTION: CORKY KIRKPATRICK  
COUNCIL COORDINATING COMMITTEE ON THE BUDGET

Several questions have been raised on the issue of the budget item for the acquisition of computer hardware/software.

PASSO has consulted with Don Edman, of LVD Computer Services, in order to have a better understanding of Metro's proposed objectives and alternatives. Attached you will find a letter from Mr. Edman.

After lengthy discussions with Mr. Edman, we feel that Mr. Lawton's proposal is a complete and cost effective package and should be adopted by the Council.

Thank You,



Joe W Cancilla Jr  
President/PASSO



# LVD COMPUTER SERVICES

SERVICE TO THE "Last  
Visible  
Digit"

2230 SE 152nd  
Portland, Oregon 97233

760-1132  
658-5721

May 5, 1983

Portland Association of  
Sanitary Service Operators  
P. O. Box 66193  
Portland, Oregon 97266

SUBJ: Metro acquisition of  
Computer Hardware/Software

Attention: Mr. Joe Cancilla, President

Dear Joe:

Mr. Lawton, the Technical Manager of Metro's Data Resource Center, devoted most of this morning to explaining the planned acquisition of computer hardware and software to support transportation planning efforts. I am convinced the acquisition is both justified and cost effective.

Mr. Lawton has investigated all identifiable computer software systems utilizing extensive references published by the Federal Department of Transportation, attending industry conferences, and contacting other public and private organizations involved in transportation planning. Available systems generally are based on outdated technology or will not handle analysis of networks as complex as Metro must deal with.

Mr. Lawton explained that approximately \$60,000.00 per year is being spent for computer time now, using a computer software system developed over ten years ago to solve planning requirements on Multnomah County's "mainframe" (large) computer system. The output from that system is tabular in format and requires a great deal of analysis after it's printed. The planned new system will provide much more useable, graphic outputs and other technical benefits that should maximize the efficiency of the planning staff.

Regarding the fact that over half the planned expenditures for the new system will be made outside the Portland area: the software system requires system hardware that is, although not unique, not general purpose equipment. And, according to Mr. Lawton, the hardware is being provided at "OEM price levels" that are very competitive.

Sincerely,

LVD COMPUTER SERVICES

*Don Edman*  
Don Edman  
Partner

DE:s



METRO

METROPOLITAN SERVICE DISTRICT  
527 S.W. HALL ST., PORTLAND OR. 97201, 503/221-1646

## A G E N D A --- REGULAR COUNCIL MEETING

Date: MAY 26, 1983  
Day: THURSDAY  
Time: 7:30 P.M.  
Place: COUNCIL CHAMBER

### C O N S E N T   A G E N D A

The following business items have been reviewed by the staff and an officer of the Council. In my opinion, these items meet with the Consent List Criteria established by the Rules and Procedures of the Council. The Council is requested to approve the recommendations presented on these items.

- 6.1 Minutes of the meetings of April 14 and April 25, 1983.
- 6.2 Resolution No. 83-398, for the purpose of approving a procedure to allocate Federal Aid Urban Funds to Forest Grove.
- 6.3 Resolution No. 83-399, for the purpose of amending the FY 83 Unified Work Program for Computer Purchase.
- 6.4 Resolution No. 83-404, for the purpose of approving the FY 1984 Unified Work Program (UWP).
- 6.5 Contract approval for the purchase of Transportation Planning software (Emme 2) and hardware (Pixel Super Micro-Computer).
- 6.6 Resolution No. 83-406, for the purpose of authorizing a new Regional Planner I position in the Solid Waste Department.
- 6.7 Ratification of Waiver of Personnel Rules.

  
Rick Gustafson, Executive Officer

MINUTES OF  
COUNCIL/EXECUTIVE OFFICER WORKSHOP  
APRIL 14, 1983

Councilors Present: Councilors Banzer, Bonner, Deines,  
Etlinger, Hansen, Kafoury, Kelley,  
Kirkpatrick, Oleson, Van Bergen, and  
Waker.

Councilors Absent: Councilor Williamson.

Also Present: Rick Gustafson, Executive Officer.

Guests: Lloyd Anderson, Ron Cease, and Glenn Otto.

Staff: Donald Carlson and Ray Barker.

Visitors: Jean Orcutt and Frances Hyson.

The Council/Executive Officer Workshop was convened at 2:45 P.M. on April 14, 1983 at Thompson Hall, Marylhurst College.

Discussion centered around the following topics:

1. A description of Metro at this time.
2. Relationships between Council, Executive Officer and Staff.
3. Successes, failures, strengths and weaknesses of Metro.

It was suggested that the results of the workshop and the questionnaires be tabulated and conclusions drawn, and that a follow-up meeting was desirable to discuss the future direction for Metro.

No motions were made or actions taken.

The Workshop was adjourned at 8:31 p.m.

Written by Ray Barker, Council Assistant

8373B/313  
4/20/83

MINUTES OF THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

Special Meeting of  
April 25, 1983

Councilors Present: Councilors Banzer, Bonner, Deines,  
Etlinger, Hansen, Kafoury, Kelley,  
Kirkpatrick, Oleson, Van Bergen, Waker,  
and Williamson.

Councilor Absent: None.

Also Present: Rick Gustafson, Executive Officer.

Staff: Donald Carlson, Ray Barker, Andy Cotugno,  
Norm Wietting, Dan Durig, Doug Drennen, Kay  
Rich, Dennis Mulvihill, Jennifer Sims,  
Sonnie Russill, Sue Klobertanz, Kathy  
Vandehey, Dan LaGrande, and Warren Iliff.

A special meeting of the Council convened as the Budget Committee was called to order at 7:15 p.m. by Presiding Officer Banzer.

Presiding Officer Banzer made introductory statements regarding the 1983-84 budget process, what had occurred to date and what was anticipated during the next few weeks. She said the focus of the meeting that evening was to look at the broad picture of programs and priorities.

Executive Officer Rick Gustafson stated that the Coordinating Committee and the citizens who served with it should be commended for the work they had done. He then went on to list his recommended program priorities and elaborated on each: 1) Continuation of Improvement in Financial Management, 1) Obtain adequate financial resources for the zoo, planning and general government functions, 3) Development of a Solid Waste System Plan, 4) Development of Regional Infrastructure, and 5) Continuation of the assistance provided to local governments.

Councilor Kirkpatrick presented an overview of the Coordinating Committee's recommendations and stated there were two significant additions to the Executive Officer's proposal: 1) a "program initiatives" work plan using existing staff, and 2) an increase in funding for the Solid Waste System Planning effort.

There was then Council discussion of the Executive Officer's program priorities. A question was raised by Councilor Deines that Metro was not fulfilling its legislatively mandated programs. Presiding

Officer Banzer requested that Councilor Kirkpatrick have the Coordinating Committee review the mandated Metro programs and report its findings and recommendations to the Council.

Presiding Officer Banzer stated the next discussion item regarding the budget was to address individual Councilors suggestions for programs which may of interest to Metro to pursue.

Councilor Kelley described her suggestion to implement the "program initiatives" concept which would provide the structure for looking at the kinds of services Metro could perform or manage regionally. Councilor Kirkpatrick noted that the Coordinating Committee had endorsed the idea and recommended that the work programs in Executive Management, Public Affairs and Development Services be amended to reflect the program.

Presiding Officer Banzer stated the issue of the Metro/Tri-Met relationship needed to be discussed further and that a special informal meeting of the Council had been set up for May 5th.

Councilor Waker stated he was interested in looking at the issue of drainage and said it could be one of the issues considered in the "program initiatives" program.

Councilor Oleson suggested that the Criminal Justice Planning budget be expanded to include funding for a Regional Corrections Facility Plan and asked that the Executive Officer return to the Council with a recommendation on how to fund an expanded program. Councilor Kirkpatrick stated that the Coordinating Committee had chosen not to fund the additional work program for Criminal Justice and suggested that the issue should be discussed under "program initiatives". Mr. Gustafson said the work program for a Regional Corrections Facility Plan could be done within the currently proposed budget and that it wasn't necessary to increase the budget.

Presiding Officer Banzer requested Mr. Barker to work with the staff and look at the three options suggested.

Councilor Kelley suggested that the issue of regional parks should come under "program initiatives" for consideration for future study. Councilor Hansen suggested that the zoo's work plan include a target to aid and respond to a request away from the zoo, either animal related or appropriate to the mission of the zoo. Mr. Gustafson noted that the zoo had responded on many occasions to requests for such services.

Councilor Etlinger stated he was very interested in doing something for the libraries given their current troubles with funding. He

said the issue could be discussed under the "program initiatives" work plan.

Councilor Waker raised the question of the funding for the RTP and stated he had problems with a process which seemed to be a rubber-stamping of funding requests. Councilor Williamson stated that the funding decisions were based on criteria adopted by the Council and suggested that JPACT and the Council sit down and discuss the criteria.

Councilor Etlinger also suggested that Metro look at Human Services Planning and that it could be considered under "program initiatives".

#### Solid Waste Budget

Councilor Kirkpatrick reported that the Coordinating Committee had recommended that the Solid Waste Systems Planning work program include an additional staff person to assist in updating the waste reduction plan and in the systems planning effort.

Councilor Deines questioned the funding for methane gas recovery and the increased budget for bad debts. Mr. Durig responded that the appropriation for bad debts was based on actual experience and the reason it was increasing was because of the additional refuse to be handled at CTRC. Mr. Durig stated there were three alternatives the Council had to choose from as far as how they wanted to proceed with the project and the budget reflected the alternative which would take some up-front dollars. He said the decision would come to the Council in July and if an alternative was chosen which did not include the up-front costs, the appropriation could be reduced or reallocated. Presiding Officer Banzer requested Mr. Barker to work with Councilor Deines and staff to resolve Councilor Deines' questions.

Councilor Etlinger stated he was concerned about yard debris and noted that there was not proposed a processing center in the east part of the region. He said he was going to suggest that the budget include strategies for expanding the collection of yard debris and adding one more processing center. Presiding Officer Banzer requested Mr. Barker to work with Councilor Etlinger and staff to address Councilor Etlinger's concerns.

#### Solid Waste Capital Fund

Councilor Kirkpatrick reported that the Coordinating Committee had accepted the proposed Solid Waste Capital Fund as recommended by the Executive Officer.



Presiding Officer Banzer noted that Councilor Oleson had had to leave but wanted the record to reflect his support for funding the Washington County Transfer Station and search for a burner site.

Councilor Bonner noted that those items were legitimate facilities to consider as options in the Systems Plan. Councilor Deines stated he was going to move at the appropriate time the removal of the Washington County Transfer Station from the budget.

Solid Waste Debt Service Fund

Councilor Kirkpatrick reported that the Coordinating Committee accepted the proposed Solid Waste Debt Service Fund as proposed by the Executive Officer, with the amendment that the staff include the Debt Service Fund as part of the 5-year Financial Plan Study.

The meeting was adjourned at 10:05 p.m.

Respectfully submitted,

  
Everlee Flanigan  
Council Clerk

8463B/313  
5/4/83

CONSIDERATION OF RESOLUTION NO. 83-398 FOR THE  
PURPOSE OF APPROVING A PROCEDURE TO ALLOCATE  
FEDERAL AID URBAN FUNDS TO FOREST GROVE

---

Date: May 12, 1983

Presented by: Andy Cotugno

The Metro Council approved changes to the Federal Aid Urban Boundary on March 24, 1983. This action incorporated Forest Grove and Cornelius into the Portland metropolitan Federal Aid Urban Boundary and has an effect on Federal Aid Urban funding allocation.

The purpose of Resolution No. 83-398 is to establish a procedure for allocating Federal Aid Urban (FAU) funds to Forest Grove for fiscal years 1983 through 1986 and to define the effect on Portland and the balance of the region.

FACTUAL BACKGROUND AND ANALYSIS

The significant immediate impact of the FAU boundary change is to include Forest Grove and Cornelius inside the Portland metropolitan area FAU boundary. Under the old boundaries, the Portland region received an allocation of FAU funds and Forest Grove, with its own boundary, received its own allocation of FAU funds. Both allocations were based on the relative population inside the respective urban areas. With the recently approved boundary change, the population of the Portland urban area increases with the addition of the Forest Grove population and, as such, the Portland region FAU allocation is in part attributable to the Forest Grove population. With this change, it becomes necessary to determine the procedure for allocating FAU funds to Forest Grove.

Under existing practice, Forest Grove would be treated like the other jurisdictions and could propose a highway project to be weighed against other proposals at the regional level. Using this procedure, available regional resources would be allocated to projects on the basis of "need," thereby meeting the highest priorities of the region. The alternative procedure would be to allocate the resources to all jurisdictions on the basis of population, regardless of where the critical transportation need exists.

Complicating the Forest Grove situation is the fact that the Portland region transferred nearly all of its FAU funds downstate, leaving very little to allocate between Portland, Forest Grove and other regional projects. In addition, past FHWA/CRAG/Metro actions resulted in 41 percent of the funds being allocated to Portland on



the basis of population and virtually all of the regional funds being allocated to a single project--Boones Ferry Road in Lake Oswego. This in effect penalizes Forest Grove with the Portland region's downstate transfer of FAU funds since, at the time, they had their own FAU boundary, and received their own FAU allocation.

Cornelius is also affected, but to a lesser degree. Their population is less than 5,000 persons and, therefore, did not formerly have their own FAU boundary. Instead, their population was included in the calculation of Federal Aid Secondary (rural) funds allocated to Washington County. Although they have very few streets on the Federal Aid Secondary system, they had the option of seeking Secondary funds from Washington County.

TPAC and JPACT have reviewed and approved this procedure.

#### RECOMMENDED PROCEDURE

Utilizing 1980 census data, Metro has developed a recommended procedure for allocating FAU funds to Forest Grove throughout the balance of the downstate transfer (FY 83-FY 86):

Portland Area Attributable FAU Funds		4,079,711
Less Forest Grove Allocation (1.28%)		52,220
F.G. Pop./Regional Pop. = 11,499/895,856 = 1.28%		4,027,491
Less Downstate Transfer to Primary		3,878,493
Balance Available to Portland/Region		148,998
Portland (Pop. = 366,383) = 41.43%		61,730
Region Less F.G. (Pop. = 517,974) = 58.57%		87,268
884,357 100.00%		148,998

The above calculations provide for Forest Grove to receive a portion of the full allocation with Portland and the region receiving their pro-rata shares after deducting the downstate transfer.

Also, with this change, Cornelius is included in the region's FAU boundary. However, they are proposed to be treated like all other jurisdictions: they have the option to seek FAU funds through Metro.

#### CONCLUSION

It is recommended that Forest Grove be allocated 1.28 percent of the region's FAU funds (on the basis of population) for the years FY 1983-86 to be calculated as a percent of the region's full FAU allocation, prior to subtracting the downstate transfer. This procedure is to extend to 1986, or the life of the downstate transfer only. If the FAU program is continued beyond 1986, Forest Grove would be treated as the other jurisdictions, that is, competing for a portion of the region's allocation, with no special treatment. In addition, after FY 86, Portland would return to its

population share of the full regional allocation. The result of the application of this policy is depicted in Attachment "A." The specific numbers are subject to actual funding allocations to the region and changes in population that change the local allocation factors. Cornelius will have the option to compete for regional FAU funds.

EXECUTIVE OFFICER'S RECOMMENDATION

Recommend adoption of the Resolution.

COMMITTEE CONSIDERATION AND RECOMMENDATION

The Development Committee unanimously recommended Council adoption of the attached resolution on May 9, 1983.

BP/srb  
8220B/349  
05/13/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF APPROVING A	)	RESOLUTION NO. 83-398
PROCEDURE TO ALLOCATE FEDERAL AID	)	
URBAN FUNDS TO FOREST GROVE	)	Introduced by the Joint
	)	Policy Advisory Committee
	)	on Transportation

WHEREAS, Through Resolution No. 83-392, the Metro Council adopted changes to the Federal Aid Urban (FAU) Boundary; and

WHEREAS, This action incorporated Forest Grove and Cornelius into the Portland metropolitan FAU Boundary and changed FAU allocation formulae; and

WHEREAS, A revised procedure is needed to equitably distribute FAU funds to the Portland metropolitan participants brought about by the boundary change; and

WHEREAS, Metro staff has developed a recommended procedure to deal with distribution of FAU funds to Forest Grove, Portland and the balance of the region; now, therefore,

BE IT RESOLVED,

1. That the Metro Council adopts the policy of allocating a per capita share of the region's full annual FAU funds for FY 83-86 to Forest Grove prior to subtracting the downstate transfer (estimated at 1.28 percent in FY 83).
2. That this procedure is to apply for the years FY 1983 to 1986 or to extend over the life of the downstate transfer only.
3. That results of the application of this policy are depicted in Attachment "A" and form a part of this Resolution.
4. That after FY 86 (or completion of the downstate transfer) Portland will return to its per capita share of the full

regional allocation and Forest Grove will compete for a share of the regional allocation.

5. That this policy be coordinated with the Oregon Department of Transportation.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

---

Presiding Officer

BP/srb  
8220B/349  
05/13/83

ATTACHMENT "A"

Projected FAU Apportionments

	FAU Allocation to Metro Area	Transfer	Portland	Region <sup>C</sup>	Forest Grove <sup>d</sup>
79	\$ 3,858,448	\$ 3,335,597	\$ 240,511	\$ 282,340	
80	3,858,448	3,335,597	240,511	282,340	
81	3,858,448	3,335,597	240,511	282,340	
82	4,080,157	3,879,653	82,207	118,297	
83 <sup>a</sup>	4,079,711	3,878,493	61,730	87,268	\$ 52,220
84 <sup>a</sup>	4,079,711	3,878,493	61,730	87,268	52,220
85 <sup>a</sup>	4,079,711	3,878,493	61,730	87,268	52,220
86 <sup>a</sup>	4,079,711	1,566,077	1,019,764	1,441,650	52,220
	<u>\$31,974,345</u>	<u>\$27,088,000<sup>b</sup></u>	<u>\$2,008,694</u>	<u>\$2,668,771</u>	<u>\$208,880</u>

<sup>a</sup>Preliminary, subject to actual statewide allocation and population changes.

<sup>b</sup>Actual FAU trade commitment = \$27,088,000.

<sup>c</sup>Regional Allocation:

	Boones Ferry	Region	Total
79	\$ 0	\$ 282,340	\$ 282,340
80	0	282,340	282,340
81	232,678	49,662	282,340
82	118,297	0	118,297
83	87,268	0	87,268
84	87,268	0	87,268
85	87,268	0	87,268
86	877,693	563,957	1,441,650
	<u>\$1,490,472</u>	<u>\$1,178,299</u>	<u>\$2,668,771</u>

<sup>d</sup>FY 1979-82 allocations to Forest Grove directly from ODOT were as follows: FY 1979 = \$45,991; FY 1980 = \$45,344; and FY 1981 = \$49,910; available carryover = \$65,488.

BP/srb  
8220B/349  
04/11/83



CONSIDERATION OF RESOLUTION NO. 83-399 FOR  
THE PURPOSE OF AMENDING THE FY 83 UNIFIED  
WORK PROGRAM FOR COMPUTER PURCHASE

Date: April 18, 1983

Presented by: Andy Cotugno

RECOMMENDATION

This resolution would add an FHWA-PL funded element to the FY 83 Unified Work Program (UWP) in the amount of \$29,230 for acquisition of hardware and software for a new travel forecasting package.

FACTUAL BACKGROUND AND ANALYSIS

Metro's Transportation Department is responsible for producing transit and highway travel forecasts for the Portland metropolitan area. The current system used models defined with UMTA's "Urban Transportation Planning System" (UTPS) operating on Multnomah County's mainframe computer. Computer expenses are generally \$50,000 per year and have been as high as \$80,000 per year in the past. This UWP amendment is the first step in converting to a new travel forecasting package operating on an in-house micro-computer.

The proposed travel forecasting package (EMME 2) has been developed by the Transportation Research Centre at the University of Montreal to run on a PIXEL super micro-computer manufactured by Instrumentation Laboratories in Andover, Massachusetts. The conversion involves a single purchase of the PIXEL hardware and EMME 2 software as a package plus a second purchase of the necessary graphics equipment. The various elements of the conversion are as follows:

1.	EMME 2 travel forecasting plus related software	\$19,150
2.	PIXEL hardware plus related peripherals	\$39,310
3.	Graphics Equipment	<u>\$39,200</u>
		\$97,660

The benefits of converting to the EMME 2 system are as follows:

1. Cost-Effectiveness - Based upon a current \$50,000 per year



computer cost, the overall purchase will be "paid-off" within two years to be replaced thereafter with an annual maintenance cost of \$8,000 per year.

2. Improved model characteristics - The EMME 2 system has a more effective highway and transit assignment procedure than UTPS.
3. The EMME 2 system will increase staff productivity with the following enhancements:
  - a. EMME 2 is more user-friendly than UTPS and is, therefore, easier to use as an analytical tool.
  - b. EMME 2 is designed to be used in an interactive mode while UTPS can only operate in a batch mode. Through interactive capabilities, an individual can evaluate the characteristics of a transportation alternative with immediate response of data items.
  - c. EMME 2 is designed to provide as much information as possible in graphic rather than tabular form, thereby making evaluation of complex data easier. In addition, since EMME 2 is based on a micro-computer, graphics equipment is more economical than that for a mainframe.

TPAC and JPACT have reviewed and approved this UWP amendment.

#### PROPOSED FUNDING

This UWP amendment is related to the acquisition of the EMME 2 plus related software and the PIXEL computer plus related peripherals (the graphics equipment will be purchased in FY 84). The funding for this purchase is proposed as follows:

	<u>Hardware</u>	<u>Software</u>	<u>Total</u>
Metro	\$11,442	\$ 0	\$11,442
FHWA-PL/ODOT Match	27,868	19,150	47,018
	<u>\$39,310</u>	<u>\$19,150</u>	<u>\$58,460</u>

Metro's acquisition of 29 percent of the hardware will allow 29 percent of its use for non-Transportation purposes.

This UWP amendment for \$29,230 is for one-half of the \$58,460 total purchase price, to be paid upon execution of the purchase contract. The second half will be included in the FY 84 UWP to be paid upon receipt of the equipment.

#### EXECUTIVE OFFICER'S RECOMMENDATION

Recommend adoption of the attached resolution.

COMMITTEE CONSIDERATION AND RECOMMENDATION

The Development Committee unanimously recommended Council adoption of the attached resolution on May 9, 1983.

AC/srb  
8360B/349  
05/13/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AMENDING THE )  
FY 83 UNIFIED WORK PROGRAM (UWP) )  
FOR COMPUTER PURCHASE )

RESOLUTION NO. 83-399

) Introduced by the Joint  
) Policy Advisory Committee on  
) Transportation

WHEREAS, The FY 83 Unified Work Program (UWP) was adopted  
in May 1982 by Resolution No. 82-331; and

WHEREAS, Changes to the UWP must be approved by the Metro  
Council; and

WHEREAS, The FY 83 UWP must be amended to include \$29,230  
of FHWA-PL funds to be used towards purchase of micro-computer  
hardware and software; now, therefore,

BE IT RESOLVED,

1. That the Metro Council approves the amendment to the  
FY 83 UWP to include \$29,230 of PL funds toward acquisition of  
micro-computer hardware and software.

2. That staff is directed to enter into the necessary  
agreement to obtain release of the funds and initiate the purchase.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

AC/srb  
8360B/349  
05/13/83

STAFF REPORT

Agenda Item No. 6.4

Meeting Date May 26, 1983

CONSIDERATION OF RESOLUTION 83-404 FOR  
THE PURPOSE OF APPROVING THE FY 1984  
UNIFIED WORK PROGRAM (UWP).

---

Date: May 12, 1983

Presented by: Andy Cotugno

PROPOSED ACTION

Approve the UWP containing the transportation planning work program for FY 1984. Authorize the submittal of grant applications to the appropriate funding agencies.

FACTUAL BACKGROUND AND ANALYSIS

The FY 1984 UWP describes the transportation/air quality planning activities to be carried out in the Portland/Vancouver metropolitan region during the fiscal year beginning July 1, 1983. Included in the document are federally funded studies to be conducted by Metro, Regional Planning Council of Clark County (RPC), Tri-Met, the Oregon Department of Transportation (ODOT) and local jurisdictions.

The Oregon portion of the FY 1984 UWP major emphasis areas include:

- RTP Refinement
- Southwest Corridor Study
- Regionwide Transitway Plan--Phase I (Southern and Bi-State Corridors)
- Regionwide Transitway Plan--Phase II (Barbur and Westside Branches)
- Completion of purchase and conversion to the EMME 2 micro-computer.
- Section 9A - New funds being used for various elements of Tri-Met planning.

The UWP matches the projects and studies reflected in the proposed Metro budget to be submitted to the Tax Supervisory and Conservation Commission.

Approval will mean that grants can be submitted and contracts executed so work can commence on July 1, 1983, in accordance with established Metro priorities.

TPAC and JPACT have reviewed and approved the FY 1984 UWP.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends to adopt the attached Resolution.

COMMITTEE CONSIDERATION AND RECOMMENDATION

The Development Committee unanimously recommended Council adoption of the attached resolution on May 9, 1983.

KT/srb  
8112B/283  
05/13/83



BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF APPROVING THE	)	RESOLUTION NO. 83-404
FY 1984 UNIFIED WORK PROGRAM (UWP)	)	
	)	Introduced by the Joint
	)	Policy Advisory Committee on
	)	Transportation

WHEREAS, The Unified Work Program (UWP) describes all federally-funded transportation/air quality planning activities for the Portland/Vancouver metropolitan area to be conducted in FY 1984; and

WHEREAS, The FY 1984 UWP indicates federal funding sources for transportation/air quality planning activities carried out by Metro, Regional Planning Council of Clark County (RPC), the Oregon Department of Transportation (ODOT), Tri-Met and the local jurisdictions; and

WHEREAS, To ensure implementation of the RTP, the region should establish annual work program goals in addition to specific planning projects; and

WHEREAS, The FY 1984 UWP contains an agreement on interagency responsibilities between ODOT, Tri-Met and Metro, and RPC and Metro; and

WHEREAS, Approval of the FY 1984 UWP is required to receive federal transportation planning funds; and

WHEREAS, The FY 1984 UWP is consistent with the proposed Metro budget submitted to the Tax Supervisory and Conservation Commission; and

WHEREAS, The FY 1984 UWP has been reviewed and agreed to by the Transportation Policy Alternatives Committee (TPAC), the

Joint Policy Advisory Committee on Transportation (JPACT) and the RPC; now, therefore,

BE IT RESOLVED,

1. That the FY 1984 work program goals are:
  - a. to refine the Transit Development Plan in light of the recently adopted RTP and Tri-Met's fiscal position; and
  - b. to identify the total transportation funding needs and outline alternative funding approaches for the region.
2. That the FY 1984 UWP is hereby approved.
3. That the FY 1984 UWP is consistent with the continuing, cooperative and comprehensive planning process and is hereby given positive A-95 Review action.
4. That the Metro Executive Officer is authorized to apply for, accept and execute grants and agreements specified in the UWP.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

---

Presiding Officer

KT/srb  
8112B/283  
05/13/83

**REGIONAL TRANSPORTATION PLANNING  
IN THE PORTLAND-VANCOUVER METROPOLITAN AREA**

**OVERALL REGIONAL PROCESS  
AND  
FISCAL YEAR 1984 WORK PROGRAM**

**Metropolitan Service District  
Regional Planning Council of Clark County**

**April 29, 1983**



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OREGON

## PHASE I ALTERNATIVES ANALYSIS - SOUTHERN/BI-STATE CORRIDORS

### Program Objectives:

1. Complete the technical analysis for the Phase I Alternatives Analysis in the Central Portland area, Southern Corridor and Bi-State Corridor.
2. Determine whether to proceed with a Phase II Alternatives Analysis; produce a report describing promising alternatives.
3. Amend the Regional Transportation Plan (RTP) to include any feasible transitway corridors and initiate a Phase II Alternatives Analysis/Draft Environmental Impact Statement (DEIS) accordingly.
4. Adopt the McLoughlin Boulevard highway and transit improvement program, staging plan and financing strategy.
5. Allocate the McLoughlin Boulevard Interstate Transfer Reserve.

### Relation to Previous Work:

The Regional Light Rail Transit (LRT) System Plan Scope of Work (approved in FY 83) serves as an overall guide for the Regional LRT System Plan project phases. This Scope of Work provides a context for following the federal process for a Phase I and Phase II Alternatives Analysis. The first geographic area of analysis, which is comprised of the Southern Corridor, the Bi-State Corridor (I-5 North and I-205 North) and the Central Portland study area, was begun in FY 83. Much of the technical work is scheduled for completion prior to FY 84. A supportive consulting engineering effort was also begun in FY 83, in accordance with the Regional LRT System Plan Scope of Work.

### Products:

1. McLoughlin Corridor Highway/Transit Staging Plan and Financing Strategy.
2. Phase I Alternatives Analysis recommendations and resulting amendments to RTP.
3. Phase I Alternatives Analysis "Promising Alternatives" report, documenting analysis.
4. Decision on whether to proceed with a Phase II Alternatives Analysis in either of these corridors.
5. Allocation of McLoughlin Corridor Interstate Transfer Reserve.

## Responsibilities:

Metro is responsible for the overall conduct of the study, coordination of the Oregon decisions, Oregon public involvement, technical analysis associated with travel forecasts, impact analysis and cost-effectiveness evaluation.

Tri-Met is responsible for definition of alternatives including engineering analysis, capital costing and operating costing.

The Regional Planning Council of Clark County (RPC) is responsible for coordinating Washington decisions and development of alternatives within Washington (including highway network coding, transit route design and population/employment forecasts).

Portland will provide input on impact analyses and provide technical supervision of traffic impact analyses in Portland.

### Expenses:

Metro: Personnel	\$55,000
M & S	<u>30,500</u>
	\$85,500
Tri-Met: Personnel	\$ 34,800
M & S	<u>133,000</u>
	\$167,800
Portland: Personnel	\$ 10,000
TOTAL	<u>\$263,300</u>

### Revenues:

FY 84 (e)(4)	48,450
Metro Match	4,275
Tri-Met Match	4,275
Phase I Alt. Anal. (e)(4)	170,000
Tri-Met Match (in-kind)	28,500
Portland Match	1,500
Section 9A	5,040
Tri-Met Match	<u>1,260</u>
TOTAL	<u>\$263,300</u>

## PHASE I ALTERNATIVES ANALYSIS - BARBUR CORRIDOR/WESTSIDE BRANCHES

### Program Objectives:

1. Complete the technical analysis for the Phase I Alternatives Analysis in the Barbur Corridor and for extensions to Hillsboro, Tualatin and between Beaverton and Tigard.
2. Amend the RTP to include feasible transitway corridors.

### Relation to Previous Work:

This is the second geographic area identified for evaluation in the "Regional LRT System Plan Scope of Work," adopted in FY 83. All work in this area will be built upon the results of the Westside Corridor Project DEIS (March 1982) and Preferred Alternatives Report (January 1983). Note: The schedule for initiating this work element is subject to completion of the Southern Corridor/Bi-State work element. As such, adjustments in budget between the two work elements may be necessary.

### Products:

Phase I Alternatives Analysis recommendations and resulting amendments to the RTP. Note: If it is concluded that a Phase II Alternatives Analysis is warranted, it is anticipated that one will not be initiated unless the Phase II Alternatives Analysis in the Milwaukie or Bi-State Corridor is completed or terminated.

### Expenses:

Metro: Personnel	\$116,450
M & S	24,550
	<u>\$141,000</u>
Tri-Met: Personnel	\$ 69,000
M & S	48,750
	<u>\$117,750</u>
Portland: Personnel	\$ 5,000
TOTAL	<u>\$263,750</u>

### Revenues:

FY 84 (e)(4)	\$109,650
Metro Match	9,675
Tri-Met Match	9,675
Phase I Alt. Anal. (e)(4)	65,000
Tri-Met Match (in-kind)	10,721
Portland Match	750
Section 9A	46,623
Tri-Met Match	11,656
TOTAL	<u>\$263,750</u>

## WESTSIDE CORRIDOR PROJECT

### Program Objectives:

1. Complete preliminary engineering (PE) of a Sunset LRT line between Portland and Washington County; calculate construction costs.
2. Prepare an updated operating plan for the Sunset LRT line, indicating which headways, hours and miles, number of vehicles required and operating costs.
3. Prepare a Final Environmental Impact Statement (FEIS), according to current Urban Mass Transportation Administration (UMTA) guidelines, detailing the reasons for choice of this alternative and answers to questions raised in the DEIS process.
4. Prepare Westside Corridor Project financing package for regional review.
5. Continue Westside Corridor Project consensus building process with key public interests.

### Relation to Previous Work:

By July 1, 1983, the Westside Corridor Project will have completed the (a) alternatives analysis, (b) DEIS, (c) public hearings, (d) selection of preferred alternatives, and (e) the PE/FEIS grant application. Over the next two to two and one-half years, the Westside Corridor Project needs to (a) complete PE, (b) complete Final Environmental Impact Statement, (c) complete financing package, and (d) do final regional review and approval. The PE grant application will include a detailed work program for these tasks.

### Products:

1. Engineering drawings at 1" - 50' of the Sunset LRT alignment and detailed site plans and designs of stations.
2. Cost estimates of right-of-way, track construction, overhead wires, signals, stations, vehicles and maintenance facilities.
3. LRT operating plan including string charts and labor build-up staffing tables.
4. Final Environmental Impact Statement for the chosen alternative.
5. Analysis of Tri-Met's cash-flow position over the next 15 years as it relates to the feasibility of constructing and operating the Westside Corridor Project.

6. Analysis of federal funding opportunities and prospects for Westside Corridor Project.
7. Analysis of state funding opportunities and prospects for Westside Corridor Project including state bonding.
8. Analysis of tax benefit-leveraged lease back financing opportunities for Westside Corridor Project.
9. Analysis of vendor financing opportunities for Westside Corridor Project including export tax credits, turnkey operations, etc.
10. Analysis of land donation opportunities for Westside Corridor Project.
11. Analysis of special taxation district opportunities for Westside Corridor Project.
12. Analysis of LRT operating nonprofit (63-20) corporation opportunities for Westside Corridor Project.
13. Continued public involvement.
14. Translation of funding opportunities into specifications for PE.

Expenses:

Metro: Personnel	\$105,294
M & S	30,000
	<u>\$135,294</u>
Tri-Met: Personnel	\$141,179
M & S	500,000
	<u>\$641,179</u>
TOTAL	<u>\$776,473</u>

Revenues:

FY 84 (e)(4)	\$100,000
Westside Phase II AA/DEIS (OR-29-9004)	17,550
Metro Match	12,294
Tri-Met Match	8,450
FY 82 (e)(4) (OR-29-9007)	4,250
Tri-Met Match	750
Section 9A	35,955
Tri-Met Match	8,989
FY 84 (e)(4)	500,000
Tri-Met Match	88,235
TOTAL	<u>\$776,473</u>



## SOUTHWEST CORRIDOR STUDY

The adopted RTP recognized several outstanding transportation issues in the Southwest Corridor. This study will identify, evaluate and define the effects of different transportation investments and policies in the Corridor and designate the arterial and transit trunk route elements of the regional transportation system in the Corridor.

### Program Objectives:

1. Survey origin/destination patterns of traffic entering the Metro area on 99W south of Tigard. Forecast future traffic demands.
2. Identify necessary improvements to meet traffic service criteria on 99W through Tigard.
3. Determine the feasibility and location of alternative highway connections between I-5 and 99W and between T.V. Highway and 99W (south and southwest of Highway 217).
4. Determine the location of a regional transit trunk route to serve the Tualatin transit station.
5. Determine the relationship between planned high density land uses along Kruse Way and transit service.
6. Determine the need for I-5 access improvements to Wilsonville.
7. Determine the relationship between LRT feasibility and other potential improvements in the Corridor.
8. Identify highway and transit service improvements needed in the Corridor.
9. Define the regional highway and transit improvement program in the I-5/99W Corridor between Portland and Tigard.

### Relation to Previous Work:

1. The RTP recognized many unresolved issues in the Southwest Corridor.
2. The Oregon Department of Transportation (ODOT) (Southwest Traffic Analysis) and Washington County (Draft 2 Comprehensive Plan) recommended projects that have not been accepted by affected local jurisdictions.
3. Tri-Met's Transportation Development Plan (TDP) identifies a Tualatin transit station but not an I-5 corridor trunk route.

4. ODOT's scheduled (FY 83) Origin/Destination Survey in the Corridor.

Products:

RTP amendments to incorporate arterial and trunk route designations and additional improvements in highway and transit service.

Expenses:

Metro: Personnel	\$78,290
M & S	<u>5,000</u>
TOTAL	\$83,290

Revenues:

FY 84 PL	\$27,200
ODOT Match	6,800
FY 84 Sec. 8	29,432
Metro Match	3,679
Tri-Met Match	3,679
FY 84 (e) (4)	10,625
Metro Match	938
Tri-Met	<u>937</u>
TOTAL	\$83,290

## REGIONAL TRANSPORTATION PLAN REFINEMENT

The adopted RTP provides the region a comprehensive policy and investment blueprint for an effective long-range transportation system. In order to maintain continuous relevance of the RTP to the changing transportation needs of the region, an ongoing effort to identify, study and resolve outstanding issues is required, as well as the need to refine the data base, forecasts, policies and transportation improvement strategies adopted in the Plan.

### Program Objectives:

1. Publish the FY 84 RTP update to include issues identified and resolved during FY 83 and update 2000 population/employment forecasts.
2. Review local comprehensive plans for consistency with the RTP; implement a program to obtain consistency during the local jurisdiction's next review or update process.
3. Define the Minor Arterial and Collector system consistent with local comprehensive plans. Identify inconsistencies and implement program to resolve interjurisdictional issues.
4. Assist the City of Portland in selecting safe highway route alternatives for the shipment of hazardous materials. Monitor regional issues raised by the local study.
5. Publish a detailed RTP technical appendix providing project descriptions, costs and revenue sources.

The following program objectives would be undertaken subject to the availability of funds within the project budget:

6. Complete an assessment of travel demand and adequacy of the transportation system to serve "Build-Out" of local comprehensive plans.
7. Initiate a reconnaissance of commercial traffic access and circulation problems and determine the need for further action.

### Relation to Previous Work:

RTP adopted July 1, 1982.

RTP FY 83 update scheduled for adoption July 1983.

### Products:

1. Year 2000 population/employment forecast update.

2. FY 84 RTP Update.
3. Status Report(s) on Local Comprehensive Plan consistency with RTP.
4. Minor Arterial/Collector system amendment to RTP.
5. Cost/Revenue Technical Appendix.
6. Dependent upon availability of resources: "Build-out" travel analysis, commercial traffic reconnaissance.

Expenses:

Metro: Personnel	\$70,080
M & S	<u>11,000</u>
TOTAL	\$81,080

Revenues:

FY 84 PL	\$35,264
ODOT Match	8,816
FY 84 Sec. 8	29,600
Metro Match	<u>7,400</u>
TOTAL	\$81,080

## ELDERLY AND HANDICAPPED PLANNING

### Program Objectives:

1. Establish regional "need" for special transit services to the elderly and handicapped.
2. Evaluate alternative public and private strategies for providing special services.
3. Evaluate alternative funding responsibilities and strategies.
4. Coordinate input from the elderly and handicapped community, public and private operators and local jurisdictions.
5. Adopt an Elderly and Handicapped Services element of the RTP.

### Relation to Previous Work:

1. 1977 - Interim Special Transportation Plan.
2. 1980 - Sec. 504 Transition Plan.
3. Miscellaneous TIP amendments particularly for 16(b)(2) funds.

### Products:

RTP Amendment to incorporate Special Needs Transportation.

### Responsibilities:

Tri-Met will act as program coordinator; Metro will provide a supportive role.

### Expenses:

Metro: Personnel	\$30,000
Tri-Met	<u>20,000</u>
TOTAL	\$50,000

### Revenues:

FY 83 Sec. 8	\$24,000
Tri-Met Match	6,000
Section 9A	16,000
Tri-Met Match	<u>4,000</u>
TOTAL	\$50,000

## TECHNICAL ASSISTANCE

### Program Objective:

Provide assistance to ODOT, Tri-Met and local jurisdictions as needed to resolve transportation issues.

### Products:

Data as requested.

### Expenses:

Metro: Personnel	\$30,100
M & S	<u>4,000</u>
TOTAL	<u>\$34,100</u>

### Revenues:

FY 84 PL	\$27,280
ODOT Match	<u>6,820</u>
TOTAL	<u>\$34,100</u>

## COORDINATION AND MANAGEMENT

### Program Objectives:

1. Internal management of the Transportation Department toward implementation of the Unified Work Program.
2. Provide support to various Metro committees; coordinate with ODOT, Tri-Met and local jurisdictions.
3. Provide documentation to FHWA and UMTA of departmental activities, including A-95, monthly and quarterly progress reports.
4. Continue to update Title VI documentation as 1980 Census data becomes available.
5. Provide for staff development through performance evaluations and training.

### Relation to Previous Work:

This work element is ongoing and carries over each year.

### Products:

1. FY 85 Unified Work Program.
2. Execution and monitoring of various pass-through agreements.
3. Required documentation to FHWA and UMTA.
4. Monthly progress reports to the Transportation Policy Alternatives Committee (TPAC).
5. Quarterly progress and financial reports to UMTA and ODOT.
6. Minutes, agendas and documentation.
7. Management of department staff time, budget and products.
8. Interdepartmental coordination.
9. Periodic review with FHWA and UMTA on UWP progress.
10. Respond to changes in FHWA/UMTA planning requirements.

Expenses:

Metro: Personnel	\$87,500
M & S	<u>4,500</u>
TOTAL	\$92,000

Revenues:

FY 84 PL	\$26,000
ODOT Match	6,500
FY 84 Sec. 8	47,600
Metro Match	8,300
Tri-Met Match	<u>3,600</u>
TOTAL	\$92,000



## DATA AND MONITORING

### Program Objectives:

1. Provide technical assistance on the collection and analysis of socio-economic and land use data to member jurisdictions.
2. Publish annual "Development Trends" report and "Regional Fact Book."
3. Update and maintain files on population, employment, building permits, dwelling units and household characteristics.
4. Serve as a "data clearinghouse" for member jurisdictions and other data users for information exchange, etc., and as a forum for achieving common regional data objectives.
5. Develop five-year population/employment forecasts.

### Relation to Previous Work:

1. Published 1982 and prior year Building Permit Report.
2. Published first annual Development Trends report.
3. Computerized data base material for employment, population and building permits to allow easier updating, retrieval and customizing information for particular needs.

### Products:

1. Annual Development Trends report.
2. Regional Fact Book.
3. Custom services for in-house usage, member jurisdictions and the private sector.
4. Input data for Southwest Corridor study.
5. Update of year 2000 population/employment forecasts.

### Expenses:

Metro: Personnel	\$124,067
M & S	15,350
TOTAL	<u>\$139,417</u>

### Revenues:

FY 84 PL	\$ 11,920
ODOT Match	2,980
FY 84 Sec. 8	28,080
Metro Match	94,437
TOTAL	<u>\$139,417</u>

## TRAVEL FORECASTING MODEL REFINEMENT

### Project Objectives:

1. To increase staff productivity and lower costs of modeling through conversion to micro-computer-based travel forecasting models.
2. To improve knowledge of the journey to work and incorporate recent (1980) data into minor model reformulation.
3. To improve the external vehicle travel models.
4. To improve the internal commercial vehicle travel models.

### Relationship to Previous Work:

This is a continuing process to improve the travel modeling and forecasting for the region. It is a process initiated in 1977 to provide tools for planning and alternative analyses. Also programmed in FY 83 and elsewhere in this UWP is acquisition of new travel forecasting hardware and software.

### Products:

1. EMME 2 travel models set up and operational on a micro-computer based at Metro. This will give higher productivity and lowered operating costs for the technical aspects of demand modeling.
2. An evaluation and a report on 1980 travel-to-work data from the census package. A recalibration of the work trip generation, distribution and mode split models, if so indicated by the data.
3. A revised model of external vehicle trips based on new external cordon interview surveys, with the object of having three specific purposes--"truck," "work" and "other." The existing single-purpose model was based on a 1959 survey.
4. A revised model of "commercial" trips based on data from other cities (such as those used in the "Quick Response" manual). The current model is based on a 1959 survey and has obvious flaws in its configuration.

Note: Items 3 and 4 are unlikely to be completed in this fiscal year depending on resources available for the four program elements. Item 3 will be initiated in FY 84 and completed in FY 85. Item 4 will only be initiated if available funding permits.

Expenses:

Metro: Personnel	\$30,000
M & S	8,052
Tri-Met: Personnel	<u>5,000</u>
TOTAL	\$43,052

Revenues:

FY 84 PL	\$16,442
ODOT Match	4,110
FY 84 Sec. 8	14,000
Metro Match	1,250
Tri-Met Match	2,250
FY 82 Sec. 8	
(OR-09-0029)	4,000
Tri-Met Match	<u>1,000</u>
TOTAL	\$43,052

MODELING SOFTWARE/HARDWARE EVALUATION AND SUBAREA WINDOWING  
(Discretionary Funds)

Program Objectives:

1. To provide an in-depth use analysis of the EMME 2 Travel Forecasting package, and the PIXEL super micro-computer to UMTA including an assessment of conversion procedures from UTPS to EMME 2.
2. To further develop and document "window" techniques for subarea analysis for use in conjunction with a micro-based transportation planning package.

Relationship to Previous Work:

The evaluation of EMME 2 is a new task tied to Metro's Model Refinement work element calling for conversion from UTPS to EMME 2. The window development is a continuance and improvement of past procedures using the UTPS system on a mainframe computer, but transferred to a micro-computer using existing commercial software and newly developed PASCAL-based user programs as necessary.

Products:

1. An evaluation report on EMME 2 and the PIXEL and conversion procedures from UTPS.
2. A working documented procedure for downloading from a mainframe to a micro-computer and procedures for using "windowing" techniques for detailed travel forecasts within subareas based upon micro-computer-based travel models.

Expenses:

Metro: Personnel	\$27,000
M & S	3,000
TOTAL	<u>\$30,000</u>

Revenues:

UMTA Discretionary	
Funds	\$24,000
Metro Match	6,000
TOTAL	<u>\$30,000</u>

## REGIONAL AIR QUALITY PROGRAM

### Program Objectives:

1. Complete Diesel Exhaust Study and work within citizen task force to formulate recommendations for mitigating diesel exhaust impacts. (\$5,000)
2. Analyze transportation improvement projects with respect to their impact on the ozone growth cushion. (As required; \$5,000.)
3. Complete the assessment of the degree to which downtown parking is subsidized by employers. (\$5,000)
4. Complete the downtown Carpool Management Program. (\$5,730)

### Relationship to Previous Work:

1. The Particulate State Implementation Program (SIP) identified diesel exhaust as a potential major contributor to the pollution problem. This effort is intended to quantify the extent of the problem and determine if controls are appropriate.
2. The 1982 Ozone SIP established an ozone growth cushion. Reasonable further progress and the size of the growth cushion must be monitored each year until attainment is achieved.
3. The Carbon Monoxide SIP identified a number of potential downtown Portland strategies, two of which deal with carpooling and parking subsidy.

### Products:

1. Diesel Exhaust Study.
2. Recommendation to Department of Environmental Quality (DEQ) and Metro Council from Diesel Exhaust Study Task Force.
3. Updated hydrocarbon emission inventory.
4. Parking Subsidy Assessment.
5. Carpool Management Program.

### Expenses:

Metro: Personnel	\$10,000
Portland	<u>10,730</u>
TOTAL	\$20,730

### Revenues:

OR-19-0005	\$15,730
Sec. 105	<u>5,000</u>
TOTAL	\$20,730

## TRANSPORTATION IMPROVEMENT PROGRAM

### Program Objectives:

1. Allocate available federal funding.
2. Monitor funding status of the Interstate Transfer and Section 3 "Trade" program, including project authorizations and obligations.
3. Submit and obtain approval of the Interstate Transfer Concept Program.
4. Adopt the FY 84 TIP annual update including the assessment of air quality conformity.
5. Publish quarterly TIP updates.
6. Provide input at the state and federal level of regional transportation funding needs.
7. Coordinate a regional application for ODOT Bikeway construction policy.
8. Adopt an annual UMTA Section 9A "Program of Projects" and amend the TIP accordingly.

### Relation to Previous Work:

TIP updates and ongoing project priority setting.

### Products:

1. FY 84 TIP and periodic updates.
2. FY 84 funding priorities.

### Expenses:

Metro: Personnel            \$100,904

### Revenues:

FY 84 (e) (4)	\$ 31,275
FY 84 Sec. 8	51,288
Metro Match	5,451
ODOT Match	7,000
Tri-Met Match	5,890
TOTAL	<u>\$100,904</u>

## TRANSPORTATION FINANCING

### Program Objectives:

1. Create funding opportunities for local jurisdictions' road projects.
2. Create funding opportunities for mass transit.
3. Gain private sector involvement in transportation projects.
4. Provide technical assistance to local jurisdictions.

### Relation to Previous Work:

This is a carryover project from FY 83 and focuses on the unfunded balance identified in the RTP.

### Products:

1. Information sheets to local jurisdictions on newly created transportation financing opportunities by the state. These information sheets will explain how to use the new legislation to finance projects.
2. Analysis and documentation of new opportunities and constraints in using private financing techniques, in particular those changes derived from implementation of the Tax Equalization and Fiscal Reform Act (TEFRA).
3. Analysis of state statutes on transportation financing issues and preparation of potential remedies to identified problems.
4. Analysis and documentation of the needs and opportunities for additional revenue sources for mass transit.
5. Analysis and documentation of deficiencies in special district assessment statutes, including potential remedies.
6. Preparation of material to maintain public focus on transportation financing issues.
7. Specific financing packages on projects as requested by local jurisdictions.

### Expenses:

Metro: Personnel            \$75,000

### Revenues:

FY 83 (e) (4)	
(OR-23-9001)	\$63,750
Metro Match	<u>11,250</u>
TOTAL	\$75,000

## ENERGY CONTINGENCY PLANNING

### Program Objectives:

1. Develop the Portland area element of the Statewide Energy Contingency Plan.
2. In cooperation with Tri-Met determine transit, paratransit and rideshare operating strategies during a fuel shortage.
3. Determine costs and funding responsibility during a fuel shortage.
4. Establish responsibilities for communications during a fuel shortage.
5. Coordinate with Clark County jurisdictions.

### Products:

Portland area energy (gasoline) contingency plan.

### Expenses:

Tri-Met	\$17,500
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### Revenues:

OR-09-0020	\$10,000
OR-09-0029	4,000
Tri-Met	<u>3,500</u>
TOTAL	\$17,500



## TRAVEL FORECASTING HARDWARE AND SOFTWARE PURCHASE

### Program Objectives:

1. To acquire a new travel forecasting software package and micro-computer to increase staff productivity, improve the reliability of forecasts and reduce costs.
2. To acquire graphics equipment for the display of travel forecasts.

### Relationship to Previous Work:

Metro's current travel forecasting package uses the "Urban Transportation Planning System" (UTPS) on a mainframe computer. Currently, annual computer costs are approximately \$50,000. Due to the cumbersome nature of UTPS and the high computer costs, Metro has been seeking a new micro-computer-based system for some time and in FY 83 originally had a discretionary work element to develop a micro-based system.

This work element would complete the acquisition of EMME 2--a travel forecasting package developed by the Transportation Research Centre at University of Montreal--and the associated equipment to operate EMME 2. Partial funding was programmed as an amendment to the FY 83 UWP.

### Products:

- |                                                                                                                                                                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. EMME 2 software for travel forecasting and related software for data base maintenance, communications, statistical analysis (\$9,575 also programmed in FY 83). | \$10,425        |
| 2. PIXEL computer, disk and tape drive, terminals, etc. (\$19,655 also programmed in FY 83)                                                                        | 19,655          |
| 3. Graphics terminal digitizer, hardcopy unit, plotter.                                                                                                            | 39,200          |
|                                                                                                                                                                    | <u>\$69,280</u> |

### Expenses:

Metro: M & S \$69,280

### Revenues:

FY 84 PL	\$14,910
ODOT Match	3,728
Sec. 9A	28,224
Metro Match	7,056
Metro Discretionary	<u>15,362</u>
TOTAL	<u>\$69,280</u>

Metro discretionary funding will allow for 29 percent use of PIXEL hardware and 10 percent use of graphics hardware for non-transportation purposes.

## ODOT PLANNING ASSISTANCE

### Program Objectives:

Major accomplishments for FY 84 by the Metro/Region Branch includes supporting minor arterial and collector levels of the RTP to resolve current local agency conflicts. Emphasis will also be given to access management. Work activities includes:

#### FY 84 HPR Program

1. State/Regional minor arterial analysis in conjunction with Southwest Corridor Study.
2. LRT System Study coordination.
3. RTP update assistance.
4. Identify regional plan priorities in conjunction with TIP participation and funding programming.
5. Small City Transportation Study support.
6. Sub-area Study updates.
7. Policy and technical coordination - regional planning, local agencies, TPAC, JPACT, RPC, WCTCC, and East Multnomah Transportation Committee.
8. Access management planning.
9. Assist in Model Refinement (O & D surveys for Metro "External" traffic analysis).
10. Coordination of administration of programs with Metro.

### Expenses:

ODOT: Personnel	\$114,000
M & S	6,000
TOTAL	<u>\$120,000</u>

KT/srb  
8075B/347  
05/13/83

## Transit Development Program (TDP) Update

### Program Objectives:

1. Publish a TDP Executive Summary for widespread public distribution.
2. Publish a TDP report and distribute to public agencies.
3. Revise existing TDP in light of current economic conditions.
4. Identify need for alternative operating funding source.

### Relation to Previous Work:

Tri-Met five-year TDP, fiscal years 1981-85

### Products:

TDP Report/Executive Summary

### Expenses:

Tri-Met                      \$17,553

### Revenues:

FY '83 Sec. 9A              \$14,042  
Tri-Met                      3,511

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\$17,553

## Capital Development Program Planning

### Program Objectives:

The objectives of the Capital Development Program are:

1. Prepare a short term and long term capital acquisition program for Tri-Met.
2. Provide an annual prioritization of required capital items for grant funding.
3. Coordinate the scheduling and funding of Tri-Met's capital program with other jurisdictions.

### Relation to Previous Work:

The development of the capital program is an iterative process that builds on each year's acquisition of required projects. Each year's proposed capital budget refines the previous projects. Due to different agency needs, the projected capital program is often updated and revised. It is crucial, however, to be able to predict the agency's requirements for large capital acquisitions. The ability to project these acquisitions is necessary for both grant application purposes and the programming of necessary local match funds.

### Products:

1. Refined transit capital improvements program.
2. Annual Tri-Met capital budget.
3. Input to state and federal capital grant applications.

### Expenses:

Tri-Met                      \$41,667

### Revenues:

FY '83 Sec. 9A	\$33,333
Tri-Met	8,334
	<hr/>
	\$41,667

## Transit Service Efficiency Program (TSEP)

### Program Objectives:

1. Reduce the amount of low productivity services and hours and strengthen the system as a whole.
2. Establish new Service Standards and Policies through analysis and comparison of past policies and procedures, and their relationship to established agency goals.
3. Develop new Technical Methods and Tools including review of available hardware and software for interactive Schedules Making Tool.

Relation to Previous Work: New Task.

### Products:

1. Service Cut packages for each major sign-up.
2. Service Standards & Policy Paper.
3. Analysis and summarization of Passenger Counter-related software and reports.
4. Inter-active Schedule Making Tool.

### Expenses:

Tri-Met                      \$190,325

### Revenues:

FY '83 Sec. 9A	\$152,260
Tri-Met	38,065
	<hr/>
	\$190,325

## Transit Performance Analysis

### Program Objectives:

1. Improve productivity by providing timely and accurate management information reports that analyze significant trends, factors, and occurrences.
2. Improve scheduling efficiency and cost effectiveness of service provided by maximizing the utility of the Quarterly Line Performance Report.
3. Improve the process of identifying substandard routes by implementing a methodology that links route performance to the farebox recovery ratio objective.
4. Improve the quality, quantity, and timeliness of ridership data through the application of the Automatic Passenger Counter (APC) System data.
5. Increase the efficiency of the service schedules by developing an automated interactive scheduling tool which will allow the schedule analyst to tailor schedules to ridership requirements and running time constraints.

### Relation to Previous Work:

The transit service performance methodology is used for the TDP annual update. Evaluating system performance through the use of performance indicators is part of the Transit Operations Analysis program.

### Products:

1. Monthly Performance Reports that systematically compare current results with previous results, and provide analyses of key indicators.
2. Quarterly Line Performance Reports that track the performance of individual routes through the use of a route performance ranking procedure.
3. Ridership profiles for each route (generated through the APC system) that will provide the needed input data for efficiently scheduling service.
4. An automated schedule design methodology (utilizing the interactive scheduler) that produces cost effective and responsive schedules.

### Expenses:

Tri-Met                      \$53,250

### Revenues:

FY 83 Sec 9A              \$42,600  
Tri-Met                      10,650

\$53,250

## Labor Management and Productivity Analysis

### Program Objectives:

1. Reduce operator labor costs by developing timely and accurate informational and analytical reports of extraboard activity.
2. Increase operator productivity by means of improved absenteeism analyses reporting, including tracking costs associated with absenteeism.
3. Improve operator safety performance through the development of an analytical information reporting system.

### Relation to Previous Work:

Transit employee productivity is being evaluated as part of the Transit Operations Analysis program.

### Products:

1. Monthly Reports of extraboard activity that provide analyses of key performance indicators and estimate the optimal size of the extraboard.
2. A reporting system that tracks absenteeism trends, identifies strategies for reducing absenteeism, and provides management with special analytical reports as required.
3. Accident monitoring module that produces timely responses to informational requests from various users throughout the agency.

### Expenses:

Tri-Met                      \$12,700

### Revenues:

FY '83 Sec. 9A	\$10,160
Tri-Met	2,540
	<hr/>
	\$12,700

## Management Information System Development

### Program Objectives:

1. Inventory and evaluate the agency needs to develop information systems. Prioritize these information systems needs and schedule agency resources to design and implement them.
2. Design a comprehensive, centralized data base with user oriented input and retrieval capabilities.

### Relation to Previous Work:

Although Tri-Met staff have done no work on a comprehensive MIS directly, several other projects have developed or are developing information systems which will become essential contributors to the MIS:

1. Monthly Performance Report;
2. Financial Functions (accounting, payroll, fixed assets);
3. Maintenance Management Information System;
4. Personnel Records System;
5. Runcutting system.

### Products:

1. Management Information System Plan which includes a schedule for information systems implementation.
2. Design for a centralized Data Base Management System with prescribed procedures for input and retrieval of data.

### Expenses:

Tri-Met                      \$65,800

### Revenues:

FY '83 Sec. 9A              \$52,640  
Tri-Met                      13,160  

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\$65,800



## Maintenance Management Information Application

### Program Objectives:

1. Develop a complete Maintenance Management Information System to perform specific analyses which aid in maximizing labor productivity, optimize maintenance cycles, determine cost effective bus procurement schedules, reduce inventory costs resulting in improved cost-effectiveness of maintenance activities and optimal use of scarce operating and capital funds.

### Relation to Previous Work:

The MMIS development is an enhancement/replacement of the present MMIS which is unable to meet present and future maintenance reporting needs and which operates on an unreliable system. This project will overlap with the procurement of MMIS software and related computer hardware upgrade equipment.

### Products:

1. Maintenance Absenteeism Analysis: As part of the MMIS, this project will develop a system for maintenance absenteeism on an individual level and by diversion, shift and worker specification. Results will compare absenteeism to overtime hours to identify any trends. The system will track sick, comp, excused, unexcused, and approved absences. This system will help reduce absenteeism and associated costs and identify more efficient ways to assign work loads.
2. Labor Distribution Analysis: As a subsystem of the MMIS, this activity will track the distribution of maintenance labor and how many hours are spent on specific tasks and what bus fleets they are associated with. The productivity by fleet type and type of maintenance activity will be analyzed to identify costly activities, work alternatives (contract work out, replace expensive equipment), assist in defining work schedules and operate more efficiently.
3. Preventive Maintenance Analysis: This activity will develop a system to determine optimum preventive maintenance programs for buses. The results should minimize both unnecessary and unscheduled repairs and also keep track of repairs on all buses, fleets and repair frequency. This should reduce road calls, limit severity of bus failures and provide efficient work schedules.
4. Bus Procurement Analysis: This activity will examine history and trends for each bus fleet and determine optimum replacement schedule, overhaul schedule, or need for modifications on each of the bus fleets.

### Expense:

Tri-Met                      \$54,870

### Revenues:

FY '83 Sec 9A              \$43,896  
Tri-Met                      10,974

\$54, 870

## Network Simulation and Analysis

### Program Objectives:

1. Improve effectiveness of the transit service network by assessing resource needs of potential service changes, and by estimating potential ridership of long range service changes.

### Relation to Previous Work:

Network simulation is a support function used for specific projects and many planning activities. Network accessibility analysis is needed to satisfy UMTA's 1160.1 Title VI Civil Rights reporting requirements. The route patronage forecasting activity is a follow-up of an UMTA sponsored project for development of the model.

### Products:

1. Network Simulation Development: This activity includes the development of a computer simulated transit network using UMTA's UTPS software, coding and validation of the network, and modifying the existing service network for analysis of alternative service plans. Information produced includes accessibility data, vehicle and driver requirements, and patronage estimates.
2. Route Patronage Forecasting: This activity includes testing and refinement of a model developed under a UMTA-sponsored study. The model forecasts the number of trips on a given route or changes in ridership, given changes in the service on that or related routes. This information is valuable for short range planning activities.

### Expenses:

Tri-Met                      \$21,200

### Revenues:

FY '83 Sec. 9A              \$16,960  
Tri-Met                      4,240  
\$21,200

## On-Board Origin-Destination Survey Analysis

### Program Objectives:

1. Improve effectiveness of transit service by gaining complete understanding of transit trip movements by type and category of rider.
2. Trace trends in rider characteristics and trip movements.
3. Refine ridership estimates in the monthly and quarterly performance reports.
4. Provide input to long range transit ridership forecasts.

### Relation to Previous Work:

Update the May 1980 on-board origin destination survey now out of date.

### Products:

1. Data file including cross tabulations, summary statistics, comparisons with past surveys available for special information requests.
2. Summary report of survey results for use in service planning, fare policy analysis, market analysis, facilities planning (Park and ride and transit centers), ridership estimations and service performance analysis.

### Expenses:

Tri-Met                      \$2,800

### Revenues:

FY '83 Sec. 9A            \$ 2,240  
Tri-Met                      560

\$ 2,800

## City and Eastside Transportation Improvement Program (CETIP) Analysis and Evaluation

### Program Objectives:

1. Conduct a study to examine changes in travel behavior resulting from CETIP changes.
2. Prepare/publish an Executive Summary assessing the impact of CETIP.
3. Prepare/publish a report detailing the impact of CETIP.
4. Develop recommendations for adjustments to CETIP routes based on results of evaluation and analysis.
5. Analyze rider complaints and compliments regarding CETIP changes.
6. Prepare/publish a summary report of rider response to the CETIP changes.

### Relation to Previous Work:

Analysis of the impact of the service changes for the City and Eastside areas of Tri-Met's service region implemented in September, 1982.

### Products:

1. CETIP evaluation - an Executive Summary
2. CETIP evaluation - a thorough analysis
3. Technical memoranda comparing rider travel patterns to level and orientation of service provided.
4. Summary report of rider response to CETIP route and schedule changes.

### Expenses:

Tri-Met            79,351

### Revenues:

FY '83 Sec. 9A	63,481
Tri-Met	15,870
	<hr/>
	79,351

## Transit Center and TSM Development

### Program Objectives:

1. Identify locations for bus preemption measures which can result in operational savings; complete engineering design and cost estimates on such facilities.
2. Undertake more detailed planning of bus transit centers, including design and cost estimates and identification of local funding opportunities.

### Relation to Previous Work:

This project will continue work begun in the Westside Corridor Project and other studies which identified general locations for transit centers, bus lanes and transit signal preemption. It will carry these concepts into a level of detail sufficient to advertise for final design and construction bids.

### Products:

1. Transit center layouts.
2. Bus lane locations and design drawings.
3. Signal preemption locations and operational plans.
4. Park-and-ride lot locations and site plans.

### Expenses:

Tri-Met                      \$22,240

### Revenues:

FY '83 Sec. 9A	\$17,792
Tri-Met	4,448
	<hr/>
	\$22,240

## New and Modified Service Development/Planning

### Program Objectives:

1. Develop recommendations for service changes for the southwest and southeast portions of Tri-Met's service region.
2. Review effectiveness of routing on all lines of Tri-Met system.
3. Use results of this review as input into TDP update.
4. Identify required shelter location changes required as a result of new or modified service - particularly "high traffic" areas and newly developed transfer points.

### Relation to Previous Work:

Tri-Met five-year Transit Development Program fiscal years 1981-1985.

### Products:

1. Recommendations for routing changes in southwest and southeast areas.
2. Summary analysis of recommendations for future adjustments to routes throughout remainder of system.
3. Equitable distribution of available shelters.

### Expenses:

Tri-Met                      \$46,576

### Revenues:

FY '83 Sec. 9A              \$37,261  
Tri-Met                      9,315

\$46,576

## Financial Forecasting

### Program Objectives:

1. Continue development and refinement of forecasting models which accurately simulate cash flow (costs and revenues) in the agency.
2. Support financial policy decisions by providing management with financial consequences of alternative policy decisions.

### Relation to Previous Work:

The existing (and complete) financial forecasting models were developed in a series of work programs under Grant IT-09-0030. This work will undertake continuous refinement and application of the cost/revenue models developed.

### Products:

1. Improvements to financial forecasting models.
2. Financial forecasting reports which depict probable cash flow in response to proposed changes in service levels, fares, productivity and economic conditions.

### Expenses:

Tri-Met                      \$12,050

### Revenues:

FY '83 Sec. 9A	\$ 9,640
Tri-Met	2,410
	<hr/>
	\$12,050

Private Sector Participation: Subcontracting Service on Low Productivity Routes

Program Objectives:

1. Identify all existing routes that might be operated more cost-effectively if contracted out to a private carrier.
2. Identify areas of service expansion where contracting service to a private carrier might be done more cost effectively than using Tri-Met drivers and equipment.
3. Identify potential cost savings from contracting service to a private carrier over the following five years.
4. Develop a plan for phasing in contracted service on existing routes and for areas of service expansion over the next five years.

Relation to Previous Work:

Transit Service Efficiency Program work program.

Products:

1. Summary of potential cost savings from contracting service on low productivity routes to private carriers.
2. Report describing a recommended phasing plan for contracting service over the next five years.

Expenses:

Tri-Met                      \$5,000

Revenues:

FY '83 Sec. 9A            \$ 4,000  
Tri-Met                      1,000

\$ 5,000



## Civil Rights Planning

### Program Objectives:

1. Complete a thorough analysis of MBE participation in Tri-Met contracts.
2. Identify areas of strength in the program which can be capitalized upon and areas of weakness which can be targeted for special efforts to resolve problems.
3. Develop a procedure to be used in establishing realistic project-specific MBE goals.
4. Revise and update as necessary Tri-Met's MBE policy statement.
5. Review and update annual submission of information relative to minorities in the urbanized area as required by UMTA Title VI Circular 1160.1.

### Relationship to Previous Work:

The updated Title VI report is a required annual submission. Revising and updating Tri-Met's MBE policy is a priority project. The policy will require periodic updating to reflect current regulations and changing local conditions.

### Products:

1. A program for improving Tri-Met's overall MBE level of participation in contracted services.
2. An individual project MBE goal-setting process.
3. A revised agency MBE policy statement.
4. An updated annual Title VI report for submitted to UMTA.

### Expenses:

Tri-Met                      \$8,674

### Revenues:

FY '83 Sec. 9A            \$ 6,939  
Tri-Met                    1,735

\$ 8,674

## Program Administration

### Program Objectives:

1. Establish regular coordination meetings with local jurisdictions and Metro.
2. Ensure that Tri-Met projects are planned in cooperation with and support local and regional development and transportation plans.
3. Work to include Tri-Met in planning processes of local and regional governments.
4. Establish contact and ongoing communication with private sector organizations likely to be affected by Tri-Met planning studies and programs.

### Relation to Previous Work:

Administration and coordination of service planning activities is an ongoing process.

### Products:

1. Tri-Met five-year Transit Development Program update and Executive Summary.
2. CETIP evaluation report.
3. Recommendation for service changes throughout Tri-Met system.
4. Report on contracted service cost savings potential and implementation plan.

### Expenses:

Tri-Met                      \$22,824

### Revenues:

FY '83 Sec. 9A              \$18,259  
Tri-Met                      4,565

\$22,824

**FY 84 FUNDING SUMMARY**

federal funding.

	CARRYOVER												WESTSIDE		FHWA	LOCAL		
	FY84 PL/ODOT	FY84 SEC 8	SEC 8 DISCTRY.	FY84 e(4)	FY83 SEC 8 OR-09-0032	FY82 SEC 8 OR-09-0029	FY80 SEC 8 OR-09-0020	FY83 e(4) OR-23-9001	FY82 e(4) OR-29-9007	FY83 e(4) DISCTRY	FY84 e(4) DISCTRY	EPA 175 OR-19-0005	SEC 105	OR-29-9004	SEC 9A	HPR/ODOT	MATCH	TOTAL
Phase I AA Southern/Bi-State Con.				48,450						28,500							13,579	90,529
Metro										133,000					5,040		24,731	162,771
Tri-Met										8,500							1,500	10,000
Portland																		
Phase I AA - Barbur/Southwest				109,650						12,000							21,468	143,158
Metro										48,750					46,624		20,259	115,633
Tri-Met										4,250							750	5,000
Portland																		
Westside Corridor				100,000					4,250		500,000			15,000			20,294	135,294
Metro														2,550	35,955		98,424	641,179
Tri-Met																	9,233	83,229
Southwest Corridor/Metro	34,000	29,432		10,625													7,430	81,582
RTP Refinement/Metro	44,080	29,600				24,000											6,000	30,000
Elderly & Handicapped Plan/Metro															16,000		4,000	20,000
Elderly & Handicapped Plan/Tri-Met																		34,100
Technical Assistance/Metro	34,100																11,900	92,000
Coordination & Management/Metro	32,500	47,600															96,437	139,400
Data Monitoring/Metro	14,900	28,080															3,500	36,580
Travel Forecast/Metro	20,552	14,000															1,000	5,000
Travel Forecast/Tri-Met						4,000											6,000	30,000
Model Refinement Disc/Metro			24,000															
Air Quality Program												5,000	5,000				0	10,000
Metro												10,730					0	10,730
Portland																	18,341	100,944
Transp. Imp. Program/Metro		51,288		31,275					63,750								11,250	75,000
Transp. Financing/Metro																	3,500	17,500
Energy Contingency/Tri-Met					4,000	10,000											22,418	69,418
Computer Purchase/Metro	18,638															28,224		
ODOT Planning Assistance																120,000		120,000
SubTotal	198,770	200,000	24,000	300,000	24,000	8,000	10,000	63,750	4,250	170,000	565,000	15,730	5,000	17,550		120,000		

Note: Amounts shown are federal share except PL and HPR.

TDP Update/Tri-Met	14,042	3,511	17,553
Capital Dev. Plan/Tri-Met	33,333	8,334	41,667
TSEP/Tri-Met	152,260	38,065	190,325
Transit Perf. Analy./Tri-Met	42,600	10,650	53,250
Labor Mgmt. & Prod. Analy./Tri-Met	10,160	2,540	12,700
Mgmt. Info. Sys. Dev./Tri-Met	52,640	13,160	65,800
MMA/Tri-Met	43,896	10,974	54,870
Network Sim. & Analy./Tri-Met	16,960	4,240	21,200
On-Board O-D Survey/Tri-Met	2,240	560	2,800
CE TIP Analy. & Eval./Tri-Met	63,481	15,870	79,351
Transit Ctr. & TSM Dev./Tri-Met	17,792	4,448	22,240
Service Dev./Planning/Tri-Met	37,261	9,315	46,576
Financial Forecast/Tri-Met	9,640	2,410	12,050
Private Sector Partic./Tri-Met	4,000	1,000	5,000
Civil Rights/Tri-Met	6,939	1,735	8,674
Program Administration/Tri-Met	18,259	4,565	22,824
	657,346	533,361	2,916,777

WASHINGTON

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## INTRODUCTION: FISCAL YEAR 1984 UNIFIED WORK PROGRAM

### Purpose

The Unified Work Program (UWP) is prepared annually to detail the technical activities to be completed as a part of the continuing transportation planning process in the Clark County urban area. It describes all transportation-related planning activities anticipated within the next year. The planning activities described are related to several modes of transportation, including activities which are considered significant to the Regional Transportation Plan, regardless of the agency which actually does the planning. The UWP focuses on the transportation work tasks for which completion is required by Federal or state transportation agencies, and particularly, those tasks considered necessary by local elected officials and citizens. The UWP also provides a summary of local, state, and Federal funding sources to support these planning efforts.

### Objective

The UWP describes the transportation planning activities, responsible agencies, and funding sources required to meet the major transportation policy issues of the upcoming year. It reflects the regional transportation problems and projects to be addressed during the next fiscal year. Throughout the year, the UWP serves as the guide for planners, citizens, and elected officials to track transportation planning activities. It also provides local and state agencies in the Portland/Vancouver Metropolitan Area with a useful basis for improving regional coordination and for reducing duplication of planning efforts.

### Participants, Coordination, and Funding Sources

The primary transportation planning participants in Clark County include the following: Regional Planning Council, C-TRAN, Washington State Department of Transportation (WSDOT), and the Public Works Departments of Clark County, City of Vancouver, Camas, and Washougal. As the designated MPO for the Clark County Urban Area, RPC annually develops the transportation planning work program and endorses the work programs for the entire metropolitan area. RPC is also responsible for the development and endorsement of the Regional Transportation Plan, the Transportation Improvement Program, and other regional transportation studies.

The Clark County Public Transportation Benefit Area Corporation (C-TRAN) is responsible for operational and near term transit planning leading to the preparation of a 5-year transit development plan and the implementation of fixed-route service. C-TRAN also develops a listing of projects to be included in the TIP.

WSDOT and the Public Works Departments of Clark County and the City of Vancouver perform project planning for the highway and

street systems related to their respective jurisdictions. This project planning is included in the TIP. WSDOT is also responsible for preparing a State Transportation Plan.

The coordination of planning includes local and state officials in both Oregon and Washington. Informal coordination occurs at the staff level through involvement on advisory committees (RPC's CTAC and Metro's TPAC). Mechanisms for local, regional, and state coordination are spelled out formally in a series of Memoranda of Agreement. These memoranda are intended to assist complementary transportation planning through the following:

1. The organizational and procedural arrangement for coordinating activities such as procedures for joint reviews of projected activities and policies, information exchange, etc.
2. Cooperative arrangements for sharing planning resources (funds, personnel, facilities, and services).
3. Agreed upon base data, statistics, and projections (social, economic, demographic) on the basis of which planning in the area will proceed.

Memoranda of Agreement presently in force for transportation and air quality include the following:

<u>Parties to the Agreement</u>	<u>Date</u>	<u>Purpose</u>
Metropolitan Service District and Regional Planning Council	9/06/79	To define responsibilities in carrying out the technical aspects of the regional transportation planning program, and to establish mechanisms for coordination.
City of Vancouver and Regional Planning Council	7/01/79	To define relationship between Clark County MPO and Vancouver Transit, as required by UMTA.
Washington State Transportation Commission and Regional Planning Council	3/27/79	To establish mutual responsibilities for carrying out the urban transportation planning process in Clark County.
Metropolitan Service District and Regional Planning Council	5/02/82	To define mutual responsibilities in carrying out transportation/air quality planning activities in the metropolitan area.
Clark County PTBA and Regional Planning Council	6/01/81	To define the planning and procedures to ensure mutual consideration of plans, policies, and programs between C-TRAN and RPC.

Funding sources for the MPO include the following:

Local Match - Local contributions made annually in support of the continuing, cooperative, and comprehensive transportation planning process.

UMTA Section 8 - Funding authorized under Section 8(c) of the UMT Act [49 U.S.C. 1607(c)] (80% UMTA, 20% Local).

PL - Funding authorized by the Federal Highway Administration, passed to State Departments of Transportation, which in turn, pass a portion on to the MPO to conduct the 3"C" transportation planning process (85% PL, 15% Local).



## I. REGIONAL TRANSPORTATION PLAN REFINEMENT

### PROGRAM OBJECTIVES

Adoption of the Regional Transportation Plan for Clark County has a significant impact on the location and timing of regional transportation facilities. Implementation of the Comprehensive Land Use Plans, along with an integrated highway and public mass transit system will positively impact the orderly growth and development in Clark County.

- A. Promote the long-range, integrated development of multi-modal transportation facilities in Clark County.
- B. Increase the efficiency of moving people and goods throughout the existing regional transportation system.

Major elements of this program category include the following:

- I-A. Regional Transportation Plan Refinement: Priority Ranking, Financing, and Improvement Phasing of Capacity-Deficient Travel Corridors
- I-B. Update of the Federal Functional Classification and Federal-Aid Systems
- I-C. Freight Movement Study
- I-D. Bi-State Corridor Transit Assessment
- I-E. Park-and-Ride Lot System Study
- I-F. Trip Management Plan
- I-G. Special Services Transportation Plan
- I-H. On-Board Ridership Survey Update
- I-I. Data Management
- I-J. System Analysis

WORK TASK I-A. REGIONAL TRANSPORTATION PLAN REFINEMENT: PRIORITY RANKING, FINANCING, AND IMPROVEMENT PHASING OF CAPACITY-DEFICIENT TRAVEL CORRIDORS

Objectives

1. Establish a priority ranking for the problem travel corridors identified in the Regional Transportation Plan (RTP).
2. Develop corridor financing policies to identify the best use of available funds and who should pay for the unfunded corridor needs.
3. Identify the public agency coordination aspects among the MPO, Public Works Departments, and Transit Agency.
4. Complete phasing of improvements analysis including intersection, turning lanes, and level of service.

Previous Work

1. Development and adoption of the Regional Transportation Plan.
2. City of Vancouver Arterial Study.
3. Clark County Arterial Study.

Relationship to Other Elements

The RTP identified travel corridors with major traffic capacity deficiencies in the year 2000. The corridor-by-corridor analysis of priorities, financing, and improvement phasing will refine the regional system recommendations in the RTP.

Methodology and Technical Activities

1. Existing system needs, comprehensive land use plans, and future travel demands will be incorporated into the ranking of travel corridors.
2. Analysis tools include the regional transportation model and IMPAX, an integrated program for local area traffic impact analysis (depending on availability, the automated Quick Demand Response program may also be used).
3. The technical aspects of the financing policies will interrelate funding strategies with development impacts and benefits.

Products

1. Update of the corridor recommendations in the RTP.
2. Individual travel corridor recommendations on financing and phasing of improvements.

Funding Source: \$(000)

PL	12.45
Local Match	<u>17.55</u>
TOTAL	30.00

WORK TASK I-B. UPDATE OF THE FEDERAL FUNCTIONAL  
CLASSIFICATION AND FEDERAL-AID  
SYSTEMS

Objective

1. Update and revise the Federal Functional Classification and Federal-Aid Systems to address changes in the Federal-Aid Boundary and in urban development patterns.

Previous Work

1. Federal-Aid System Update (most recent was in 1976).
2. Identification of a 1983 Federal-Aid Urban Boundary.
3. 1982 Clark County Road Standards.
4. Regional Transportation Plan.

Relationship to Other Elements

Refinement of the Functional Classification System and Federal-Aid System provides a framework for establishing access and mobility highway design requirements. This refinement will be integrated into the RTP.

Methodology and Technical Activities

1. Compare City, County, and Federal Functional Classification definitions and design criteria.
2. Develop a set of uniform definitions.
3. Update the 1983 and 2000 Functional Classification System for all State, City, and County arterials.
4. Refine the Federal-Aid System where appropriate.
5. Propose adoption of the Functional Classification revisions for City and County Comprehensive Land Use Plans.
6. Complete the WSDOT and FHWA adoption of the refined Federal-Aid System.

Products

1. A revised and coordinated highway Functional Classification System for all arterials in Clark County.
2. A revised Federal-Aid System for Clark County.
3. Documentation of revisions.

Funding Source: \$(000)

PL	3.4
Local Match	<u>0.6</u>
TOTAL	4.0

## WORK TASK I-C. FREIGHT MOVEMENT STUDY

### Objectives

1. Identify major issues/problems associated with the movement of goods through the urban areas of Clark County.
2. Compile information on current and future freight movement.
3. Develop a study scope to address the issues/problems identified.

### Previous Work

There is little, if any, up-to-date documentation of freight movement problems in Clark County. The RTP did not contain a freight movement element.

### Relationship to Other Elements

The efficient movement of goods through the urban areas is important to the area's economic development. The infrastructure requirements for freight movement are an important consideration when designing future transportation facilities.

### Methodology and Technical Activities

1. Conduct meetings with the Port authorities, trucking companies, and businesses with interests and/or problems with the movement of goods.
2. Gather information from available data sources.
3. Research additional data needs.
4. Prepare a study scope which identifies freight movement problems, methodology, information needs, and funding requirements.

### Product

1. Definition of freight movement problems and proposed solution methodology.

### Funding Source: \$(000)

PL	2.55
Local Match	<u>0.45</u>
TOTAL	3.00

## WORK TASK I-D. BI-STATE CORRIDOR TRANSIT ASSESSMENT

### Objectives

1. Determination of the feasibility of Light Rail connections between Clark County and metropolitan Portland.
2. Determination of the scope of bus trunk service between Clark County and metropolitan Portland in the event Light Rail Transit (LRT) is not feasible.
3. Compile the technical analysis for the Phase I Alternative Analysis in the Bi-State Corridor.

### Previous Work

The findings of the Governor's Bi-State Task Force on Transportation for the Portland-Vancouver Corridor set the stage for the Bi-State Transit Assessment. The Regional Light Rail Transit System Plan Scope of Work serves as an overall guide for the Regional LRT System project phases. Technical work was started in FY 83, with completion carrying over into FY 84.

### Relationship to Other Elements

The technical and policy recommendations resulting from the Bi-State Study will provide the basis for amending the RTP to include feasible LRT corridors, and for making bus trunk service recommendations in the event LRT is not feasible.

### Methodology and Technical Activities

1. Complete travel forecasts for transit and LRT.
2. Develop operating cost estimates for expanded bus network and LRT alternatives.
3. Develop capital cost estimates and conceptual engineering.
4. Develop generalized impact assessment.
5. Evaluate alternatives.

### Product

1. Phase I alternatives analysis recommendations and resulting amendments to the RTP for the Bi-State Corridor.

Funding Source: \$(000)

FY 84 UMTA Section 8	10.0	(5.3, if UMTA Section 8 funds are reduced)
Local Match	<u>4.8</u>	
TOTAL	15.0	



## WORK TASK I-E. PARK-AND-RIDE LOT SYSTEM STUDY

### Objectives

1. Geographically expand bus service area and ridership.
2. Reduce traffic on congested travel corridors that connect high employment areas.
3. Reduce employee parking requirements.

### Previous Work

Several park-and-ride lots are in use, with funds available to develop additional lots.

### Relationship to Other Elements

The RTP recognized the need for the development of a park-and-ride system. This study will identify the long-range park-and-ride lot needs, and designate where to best use park-and-ride funding resources.

### Methodology and Technical Activities

1. Identify the most obvious locations that are currently needed.
2. Systematically identify comprehensive long-range park-and-ride system needs.
3. Analyze park-and-ride facility needs through the following macro-location process:
  - . Classify park-and-ride facilities
  - . Determine location areas
  - . Estimate demand
  - . Evaluate locations
4. Analyze park-and-ride facility needs through the following micro-location process:
  - . Site considerations
  - . Design considerations
  - . Implementation phasing and financing

### Products

1. A comprehensive park-and-ride lot system study incorporating the needs of local agencies.
2. A report documenting the recommendations of the macro-location and the micro-location processes.

Funding Source: \$(000)

WSDOT Contract     26.0

TOTAL               26.0

## WORK TASK I-F. TRIP MANAGEMENT PLAN

### Objectives

1. Improve the employment development potential of the Vancouver CBD through high transit utilization.
2. Identify the impacts of existing and future employment levels on the CBD transportation network.
3. Establish mode-split goals and downtown development policies to maximize development potential and employee transit use.

### Previous Work

1. City of Vancouver Arterial Study
2. Downtown Transit Center Environmental Assessment.

### Relationship to Other Elements

This element focuses on a subregional analysis of the Vancouver CBD. The transit recommendations resulting from the study effort will refine the RTP recommendations and be incorporated into the Transit Development Program (TDP).

### Methodology and Technical Activities

1. Identify existing CBD mode-splits.
2. Identify CBD development strategies, to include proposed buildings, parking structures, and employment levels.
3. Identify transportation needs for auto-dominant vs. transit-dominant alternatives.

### Products

1. An outline of capital improvements for the components of the transportation network necessary to accommodate trips generated by CBD development.

### Funding Source: \$(000)

FY 84 UMTA Section 8	6.5
Local Match	<u>13.5</u>
TOTAL	20.0

## WORK TASK I-G. SPECIAL SERVICES TRANSPORTATION PLAN

### Objectives

1. Clarify and coordinate special services transportation policies across all affected agencies.
2. Identify current funding commitments and service provision policies.
3. Identify future funding commitments and ability to fund special services transportation.

### Previous Work

1. RTP Special Services Recommendations.
2. C-TRAN Special Transportation Program.
3. 1981 Transition Plan.

### Relationship to Other Elements

This element coordinates the complex maze of administrative and financing policies for special services transportation. The element will refine the special services transportation element of the RTP.

### Methodology and Technical Activities

1. Define special service administrative policies and funding responsibilities across all participating agencies.
2. Identify the "appropriate" level of special services transportation for the region.
3. Coordinate study findings with the Special Services Task Force.

### Products

1. Endorsement of Special Services Transportation Plan by funding agencies.
2. RTP special services transportation amendment.

### Funding Source: \$(000)

FY 84 UMTA Section 8	8.0
Local Match	<u>2.0</u>
TOTAL	10.0

## WORK TASK I-H. ON-BOARD RIDERSHIP SURVEY UPDATE

### Objectives

1. Identify system-wide passenger characteristics by bus route and time of day.
2. Identify more specific passenger characteristics for routes in new service areas and/or on poor performance routes.

### Previous Work

1. 1983 On-Board Ridership Survey on a limited number of routes.
2. 1983 Household Transit Survey.

### Relationship to Other Elements

Transit ridership data provides information for updating the Transit Development Program and for programming transit projects in the Transportation Improvement Program.

### Methodology and Technical Activities

1. Develop survey instrument to address policy concerns and technical information needs.
2. Conduct a pilot test and review technical analysis techniques.
3. Conduct a system-wide survey (cost of conducting survey is not included).
4. Process survey results.
5. Interpret and report survey results.

### Product

1. A technical memorandum reporting transit ridership characteristics.

### Funding Source: \$(000)

FY 84 UMTA Section 8	5.0
Local Match	<u>10.0</u>
TOTAL	15.0

## WORK TASK I-I. DATA MANAGEMENT

### Objectives

1. Carry out computerized planning analysis as necessary, to support the ongoing transportation planning program.
2. Provide information and technical services to local member agencies, private organizations, special interest groups, and local citizens on a request basis.

### Previous Work

As its technical transportation planning capabilities expand and data becomes available, RPC receives frequent requests for information and assistance in analyzing and interpreting information. Past work in this area has involved assistance in traffic impact analysis, passenger count reports, input to specific studies or programs, and direct technical support to local jurisdictions.

### Relationship to Other Elements

This element will help support the other work tasks contained in the Unified Work Program. Data collection and distribution is a crucial part of the technical planning tasks. An organized, comprehensive information system will assist in the completion of the work tasks.

### Methodology and Technical Activities

1. Bring on-line the 1980 UTPP computer tape which contains household and journey-to-work information by Traffic Analysis Zone (TAZ).
2. Continue the organization of land use, housing unit, and employment information by Traffic Analysis Zone. Also, down-load Metro's trip tables and organize accordingly.
3. Coordinate the traffic count information program, and prepare monthly and yearly summary sheets for distribution to member agencies.
4. Record weekly C-TRAN passenger count information, and prepare monthly and yearly reports for distribution to Operations staff.
5. Complete the information bases necessary to support IMPAX and Quick Demand Response programs.

6. Bring on-line Clark County's Geo-information base and integrate information with existing data files.
7. Using the above information bases, annually prepare a tabular and graphic transportation data publication.
8. Establish a formal updating procedure with other agencies to help keep transportation planning information current.
9. Investigate means to represent the geocoded information base in a graphic form (e.g., scatter diagrams and/or parcel plots).
10. Continue the investigation of highway and transit software that would fulfill information management and analysis needs.
11. Respond to routine informational requests.

#### Products

1. Household, journey-to-work, land use, and employment data by TAZ.
2. Traffic count summary sheets.
3. Passenger count reports.
4. Annual transportation data publication.
5. Tabular and graphic information as requested.

#### Funding Source: \$(000)

PL	8.5
FY 84 UMTA Section 8	2.4
Local Match	<u>9.1</u>
TOTAL	20.0

## WORK TASK I-J. SYSTEM ANALYSIS

### Objectives

1. Develop an automated corridor analysis methodology incorporating IMPAX, Metro's Regional Transportation Model, and the soon to be released FHWA Quick Demand Response software.
2. Develop a technique to quantitatively evaluate the park-and-ride facilities identified in the Park-and-Ride Study.
3. Develop a technique to assess the mode-split impacts of Central Business District (CBD) development.
4. Identify, in conjunction with Metro, a "down-loading" of regional trip table information to a micro-computer Clark County highway assignment.

### Previous Work

Each of the above methodologies involve the development of new techniques; however, they all build upon the Regional Transportation Model.

### Relationship to Other Elements

This element ties the Data Management work element to the corridor studies, Park-and-Ride Study, and the Trip Management Plan.

### Methodology and Technical Activities

1. Utilize IMPAX, along with the regional travel model, to identify traffic impacts (roadways, intersections, and level of service) along the highway corridor.
2. Evaluate potential demand levels at park-and-ride locations using select-link analysis from the Regional Transportation Model.
3. Utilize the Quick Demand Response techniques on a subregional level to assess the mode-split for downtown development alternatives.
4. Identify microcomputer highway assignment package which uses as input trip tables from Metro's model.

### Product

1. Working procedures for corridor analysis, park-and-ride demand, mode-split, and highway assignment.



Funding Source: \$(000)

PL	6.0
FY 84 UMTA Section 8	2.0
Local Match	<u>17.0</u>
TOTAL	25.0

## II. SUBAREA AND SPECIAL STUDIES

### PROGRAM OBJECTIVES

This program category reflects those special studies which are proposed to be conducted in Clark County to respond to a specific need for refinement of regional plans and policies.

1. Subareas of the County in which a specific critical mobility problem or problems have been identified.
2. Corridors within or leading out of the County for which a specific plan or strategy needs to be developed to resolve a pressing problem.
3. Special Studies to deal with local or regionally significant problems of a unique or specialized nature.

Subarea, corridor, and special studies are directed toward identifying and refining specific plans for correcting mobility problems, and for achieving consensus on these plans as the appropriate course of action.

The major element of this program category includes the following:

II-A. SR 14 Corridor Study

II-B. Airport Plan

## WORK TASK II-A. SR 14 CORRIDOR STUDY

### Objectives

1. Define the long-range highway needs on SR 14 from I-5 to the East Clark County line.
2. Conduct a "Needs Study" to specify the locations and improvements on SR 14.
3. Coordinate specific study recommendations with WSDOT Design staff.

### Previous Work

The RTP addressed capacity concerns on SR 14 east of I-205.

### Relationship to Other Elements

The SR 14 Corridor Study is a part of the RTP Refinement for capacity-deficient corridors. The SR 14 work element will make specific recommendations which will be passed-on to WSDOT for their design, programming, and construction.

### Methodology and Technical Activities

1. Define study area, data, coordination with WSDOT and local agencies, reporting format, and WSDOT "needs" analysis requirements.
2. Identify immediate needs including access control and safety considerations.
3. Forecast future demand along and on SR 14.
4. Compare future demand with existing capacity in regard to the roadway width, intersection/interchange configurations, and signalization.
5. Prepare alternatives to meet demand needs.
6. Make recommendations for improvements on SR 14.
7. Review recommendations with local agencies.

### Products

1. Update of SR 14 recommendations to the RTP.
2. Documentation of a "Needs Study" for WSDOT.

Funding Source: \$(000)

WSDOT Contract 65.0

TOTAL 65.0

## WORK TASK II-B. AIRPORT PLAN

### Objectives

1. Identify compatible land uses surrounding existing airports.
2. Develop layout sketches, land use maps, and capital improvement priorities for all existing airports in Clark County.
3. Identify at least one airport that is not now receiving ADAP funds to become eligible for such funding.

### Previous Work

This work effort on the development of an Airport Systems Plan is carried over from the FY 83 UWP.

### Relationship to Other Elements

The RTP does not include an Airport Systems element. This effort would provide the first information for the RTP airport refinement.

### Methodology and Technical Activities

1. Introduce the purpose of the regional Airport Systems Plan and summarize study findings/recommendations.
2. Inventory the two public use/public ownership airports and the four public use/private ownership airports.
3. Forecast general aviation demand.
4. Provide runway capacity analysis and facility requirements.
5. Analyze deficiencies, needs, and constraints.
6. Provide recommendations on the overall organization and role of each airport in Clark County.

### Products

1. An Airport Systems Plan that documents general recommendations on land use compatibility for each airport in Clark County.

Funding Source: \$(000)

FAA	54.0
Clark County	<u>6.0</u>
TOTAL	60.0

### III. PROGRAM SUPPORT

#### PROGRAM OBJECTIVES

The efficient and effective accomplishment of the tasks and projects laid out in the Unified Work Program and the Transportation Improvement Program requires that there be maintained a cooperative process which ensures the following:

1. Coordination of intergovernmental concerns, issues, and priorities through representation on formal or ad hoc committees, participation in multi-agency programs, and provision of an appropriate forum for addressing regional issues and problems.
2. Development of an annual work program which is responsive to the needs of the region.
3. Completion of specific assignments and responsibilities in an efficient and effective manner.
4. Development and maintenance of a community involvement program which provides information on regional issues and the progress of the planning program, as well as involves citizens in the transportation decision-making process.
5. Maintenance of a cooperative process whereby the data, tools, and capabilities that are developed as part of the transportation planning program are made available for solving local problems and satisfying local needs.

Major elements of this program category include the following:

- III-A. Interagency Coordination and Program Management
- III-B. Unified Work Program
- III-C. Transportation Improvement Program

WORK TASK III-A. INTERAGENCY COORDINATION  
AND PROGRAM MANAGEMENT

Objectives

1. Ensure that RPC continues to provide the regional forum for discussion and resolution of regional transportation problems and that these problems are addressed in a comprehensive, coordinated, and expeditious fashion.
2. Ensure that the transportation planning program is managed in an efficient and effective manner.

Previous Work

1. RPC, local governments in Clark County, and Metro have all established either formal committees or ad hoc advisory groups, for the purpose of addressing interagency problems and concerns. These coordination mechanisms are used on a regular basis.
2. RPC carries out an ongoing A-95 and transportation project review process.
3. RPC carries out the necessary ongoing program management tasks, such as grant and budget administration, staff supervision and orientation, etc.

Relationship to Other Elements

This element is ongoing and is a part of the "3C" urban transportation planning process.

Methodology and Technical Activities

1. Provide administrative and secretarial support service for the Consolidated Transportation Advisory Committee (CTAC), and transportation related support for the Regional Planning Council Policy Body.
2. Maintain liaison to and participate in Metro's JAPT and TPAC Committees and its appropriate subcommittees.
3. Participate in coordination efforts on an ad hoc basis for multi-agency programs within and outside Clark County (e.g., Bi-State transportation issues).
4. Carry-out transportation related A-95, other projects, and Environmental Impact Statement reviews, as necessary.



5. Orient and supervise staff to ensure completion of the Fiscal Year 1984 Work Program.
6. Prepare and administer budgets, and administer grants.
7. Update Title VI requirements.

Products

1. Project and EIS reviews.
2. Annual budget, accounting records, and progress reports.

Funding Source: \$(000)

PL	8.5
FY 84 UMTA Section 8	8.0
Local Match	<u>3.5</u>
TOTAL	20.0

## WORK TASK III-B. UNIFIED WORK PROGRAM

### Objective

1. Prepare and adopt a transportation planning work program as the framework for all multi-modal transportation activities considered necessary by local officials and required by Federal and State transportation agencies. The work program describes transportation planning tasks, responsible agencies, and funding resources needed to meet major transportation policy issues of the upcoming year.

### Previous Work

1. The 1983 Unified Work Program.

### Relationship to Other Elements

The UWP serves as the comprehensive documentation of the various modal transportation planning activities.

### Methodology and Technical Activities

1. Prepare an annual Unified Work Program in accordance with local needs and Federal guidelines.
2. Update and revise the Work Program as necessary to reflect changing priorities and/or new and previously unidentified study needs.

### Product

1. An adopted Unified Work Program.

### Funding Source: \$(000)

PL	4.25
FY 84 UMTA Section 8	4.00
Local Match	<u>1.75</u>
TOTAL	10.00

## WORK TASK III-C. TRANSPORTATION IMPROVEMENT PROGRAM

### Objective

1. Prepare and adopt a five-year program and annual element of transportation projects for the Clark County area. The TIP incorporates projects stemming from the long- and short-range transportation plan elements, and commits the funds necessary for implementation. It ensures coordination and provides a comprehensive, areawide program of proposed transportation improvements for local agencies and WSDOT.

### Previous Work

1. Fiscal Year 1983-1988 TIP and Annual Element.

### Relationship to Other Elements

The TIP is itself a direct or indirect result of virtually all elements in the UWP.

### Methodology and Technical Activities

1. Disseminate instructions to appropriate agencies requesting submission of a program of recommended projects from each.
2. Review projects for consistency with long- and short-range transportation elements and, for conformity with air quality plans and programs, including the identification of positive air quality impacts.
3. Evaluate estimates of TIP project costs and available revenues by funding source.
4. Prepare the TIP report, and will carry out A-95 review of the Annual Element.
5. Adopt the TIP and submit it to Federal agencies and the Washington State Department of Transportation.
6. Monitor TIP implementation and amend the document, as necessary.

### Product

1. An adopted Fiscal Year 1984-1989 Transportation Improvement Program and Annual Element.

Funding Source: \$(000)

PL	4.25
FY 84 UMTA Section 8	4.00
RPC Match	<u>1.75</u>
TOTAL	10.00

CLARK COUNTY

SUMMARY OF EXPENDITURES  
BY FUNDING SOURCE (\$000)

WORK ELEMENT	PL	UMTA Sec. 8	WSDOT Contract	RPC Match	FY 83 <sup>1</sup> Sec. 8	Local Carry-Over	TOTAL (000's)
<b>I. REGIONAL TRANSPORTATION PLAN REFINEMENT</b>							
I-A. Regional Transportation Plan Refinement: Priority Ranking, Financing, and Improvement Phasing of Capacity-Deficient Travel Corridors	12.45			17.55			30.00
I-B. Update of the Federal Functional Classification and Federal-Aid Systems	3.40			0.60			4.00
I-C. Freight Movement Study	2.55			0.45			3.00
I-D. Bi-State Corridor Transit Assessment		10.00		4.80			14.80
I-E. Park-and-Ride Lot System Study			26.0				26.00
I-F. Trip Management Plan		6.50		13.50			20.00
I-G. Special Services Transportation Plan					10.00		10.00
I-H. On-Board Ridership Survey Update		5.00		10.00			15.00
I-I. Data Management	8.50	2.40		9.10			20.00
I-J. System Analysis	6.00	2.00		12.00		5.00	25.00
<b>II. SUBAREA AND SPECIAL STUDIES</b>							
II-A. SR 14 Corridor Study			65.0				65.00
II-B. Airport Plan							
<b>III. PROGRAM SUPPORT</b>							
III-A. Interagency Coordination and Program Management	8.50	8.00		3.50			20.00
III-B. Unified Work Program	4.25	4.00		1.75			10.00
III-C. Transportation Improvement Program	4.25	4.00		1.75			10.00
<b>TOTAL</b>	<b>49.90</b>	<b>41.90</b>	<b>91.00</b>	<b>75.00</b>	<b>10.00</b>	<b>5.00</b>	<b>272.80</b>

<sup>1</sup>Includes local match.

DL/mfUW MA1

CONSIDERATION OF METRO/INRO, INC. CONTRACT FOR THE  
PURCHASE OF TRANSPORTATION PLANNING SOFTWARE  
(EMME 2) AND HARDWARE (PIXEL SUPER MICRO-COMPUTER)  
AND SOLE SOURCE DOCUMENTATION

---

Date: May 9, 1983

Presented by: Keith Lawton

FACTUAL BACKGROUND AND ANALYSIS

This contract is for the acquisition of the EMME 2 software and PIXEL 100/AP hardware for use by the Transportation Department. This purchase is for the basic hardware/software package excluding the graphics hardware (which is scheduled for purchase next September).

Background

The Transportation Department has documented the cost-effectiveness of the purchase of this equipment and software package to replace the use of UTPS on Multnomah County's large mainframe computer. The project has been discussed by the Budget Committee and with the Executive Officer. The purchase has been recommended by both and included in the Council's Recommended Budget forwarded to the Tax Supervising and Conservation Commission (TSCC).

The amount set aside in the budget for this purchase is \$58,460. The final quote received from the contractor (INRO, Inc.) has been affected by a revision of the PIXEL price list effective May 1, with the costs of acquisition being slightly increased, along with a substantive improvement in hardware operating speed. As a result, this initial purchase is for a reduced level of hardware. One disk drive is not being purchased, with the strategy of being able to purchase it later, if it is needed and if funds can be found (depends on end of year carryover and actual FY 1983 expenditures in the Transportation Department). We have assurances that this decision will not affect the operation of EMME 2. There is a possibility that the Data Resource Center may have to be careful in its use of storage.

Recommendation

Attached are the draft contract being sent for review and comment to the Oregon Department of Transportation and the Federal Highway Administration and the sole source justification. The draft contract is also going to INRO, Inc. for their review and comment. The input from the three reviews will be negotiated and finalized

before the matter goes to Council for full approval on May 26. It is recommended that the Metro Coordinating Committee approve the draft contract for final Council consideration.

EXECUTIVE OFFICER'S RECOMMENDATION

Recommend approval.

COMMITTEE CONSIDERATION AND RECOMMENDATION

The Budget Committee has approved and recommended the purchase. Transportation Policy Alternatives Committee recommends the purchase in its approval of the revision of the FY 1983 Unified Work Program (UWP) and its approval of the FY 1984 UWP. The 1983 UWP amendment and 1984 UWP approval go before the Joint Policy Advisory Committee on Transportation on May 12.

On May 16, 1983, the Council Coordinating Committee unanimously recommended Council approval of the contract.

KL/srb  
8532B/349  
05/17/83



METRO

**METROPOLITAN SERVICE DISTRICT**

527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

**MEMORANDUM**

Date: May 10, 1983

To: Council Coordinating Committee

From: Andy Cotugno, Director of Transportation  
Keith Lawton, Technical Manager

Regarding: Sole Source Acquisition of the EMME 2/PIXEL  
Transportation Planning Package

The Transportation Department currently uses the "Urban Transportation Planning System" (UTPS) operating on a mainframe computer. This operates as a batch process (noninteractive) and was developed by the UMTA Office of Methods (developed late 1960s and early 1970s). Metro does not use the graphics that are available with UTPS because they are expensive to run and not very sophisticated. The package requires significant personnel time to use and is expensive to run.

For the last two years, the Transportation Department has searched for an acceptable replacement travel forecasting package that includes a good integrated graphics system. The search has been carried out by following Transportation Research Board publication of papers and by using listings of software developed by the UMTA Methods Division in conjunction with the FHWA Urban Planning and Transportation Management Division - "Micro-computers in Transportation, Software and Source Book." This has been supplemented by informal inquiries and discussions with members of UMTA's Methods Division. This search yielded two possibilities: "MicroTRIPS" from PRC - Voorhees and "MINUTP" from COMSIS Corp. Both of these systems have fatal drawbacks: one, not large enough; the other still under development with little or no transit integration and no significant graphics. An early version of "MicroTRIPS" (too small for regional planning) was seen in demonstration and "MINUTP" was investigated by direct discussion with Lawrence Seiders of COMSIS and a review of their documentation. While the packages were relatively inexpensive (about half to two-thirds of the cost of the proposed EMME 2/PIXEL combination without graphics), they were not large enough or complete enough for regional planning in Portland. It would be more effective (although more costly) to stay with UTPS than to acquire either "MicroTRIPS" or "MINUTP."

All available micro-computer based software packages were demonstrated and discussed at the January 1983 annual meeting of the Transportation Research Board where the EMME 2/PIXEL package



Memorandum  
May 10, 1983  
Page 2

was demonstrated. Following the demonstration of this system, two Metro representatives spent several days at an in-depth demonstration and discussion at the Transportation Research Centre of the University of Montreal where the package was developed. The outcome of this investigation is that the system works, is practical, is very effective, is well integrated with sophisticated highway and transit network analysis techniques, and excellent graphics.

Due to the specialized nature of the package and the smallness of the community of "transportation" users, it is extremely unlikely that an alternative package could exist without the sources consulted being aware of it. Further, the only reasonable source for an RFP mailing list would be from USDOT which we have effectively used. It can, therefore, be concluded that a sole source acquisition for the EMME 2 Travel Forecasting software is in order.

This package was originally developed on a CDC mainframe. At the time of choice for a micro-computer application, the developers benchmarked several micro-computers, with the PIXEL emerging as the most cost-effective (benchmark speeds ten times those of ONYX and IBM-PC).

The package has been set up to run under UNIX, which will give portability to the other computers. However, the developer/vendor is selling the EMME 2 package on the PIXEL as an OEM turnkey package. The package is guaranteed using this combination of hardware and software and would not be guaranteed if another computer were chosen. The cost of getting the package on another UNIX-based computer would have to include significant consulting cost from the developer/vendor (if they would be prepared to do this). It is, therefore, recommended that the complete package be sole-source acquired from INRO, Inc., and that this include the PIXEL hardware.

KL/srb  
8519B/D1

DRAFT

LABOR AND MATERIAL CONTRACT

THIS CONTRACT is executed this \_\_\_\_\_ day of \_\_\_\_\_, 1983, between the METROPOLITAN SERVICE DISTRICT, a municipal corporation, 527 S.W. Hall Street, Portland, OR 97201, hereinafter referred to as "METRO," and INRO SYSTEMS, INC., 279 E. 44th Street, Suite 14 J, New York, NY 10017, hereinafter referred to as "CONTRACTOR."

THE PARTIES AGREE AS FOLLOWS:

ARTICLE I

SCOPE OF WORK

I. CONTRACTOR shall perform the labor and/or deliver to METRO the materials described in the Scope of Work attached hereto as Exhibit "A." All labor and materials shall be provided in accordance with accepted standards of quality and the Scope of Work.

II. METRO is not responsible for payment of any materials delivered to the site for the CONTRACTOR's use.

ARTICLE II

COMMENCEMENT AND EXPIRATION OF CONTRACT

This Contract shall commence when it has been signed by both parties and will be completed no later than July 30, 1983.

ARTICLE III

CONTRACT SUM AND TERMS OF PAYMENT

I. METRO shall compensate the CONTRACTOR for services performed and materials supplied in the fixed sum of FIFTY SEVEN THOUSAND ONE HUNDRED FIVE AND NO/100THS (\$57,105.00) DOLLARS.

II. The Contract Sum is payable as detailed in Exhibit "A."

#### ARTICLE IV

##### LIABILITY AND INDEMNITY

CONTRACTOR is an independent contractor and assumes full responsibility for the content of its work and performance of CONTRACTOR'S labor, and assumes full responsibility for all liability for bodily injury or physical damage to person or property arising out of or related to this Contract, and shall indemnify and hold harmless, METRO, its agents and employees, from any and all claims, demands, damages, actions, losses, and expenses, including attorney's fees, arising out of or in any way connected with its performance of this Contract. CONTRACTOR is solely responsible for paying CONTRACTOR'S subcontractors. Nothing in this Contract shall create any contractual relation between any subcontractor and METRO.

#### ARTICLE V

##### TERMINATION

METRO may terminate this Contract upon giving CONTRACTOR seven (7) days written notice. In the event of termination, CONTRACTOR shall be entitled to payment for work performed to the date of termination. METRO shall not be liable for indirect or consequential damages. Termination by METRO will not waive any claim or remedies it may have against CONTRACTOR.

#### ARTICLE VI

##### INSURANCE

CONTRACTOR shall maintain such insurance as will protect CONTRACTOR from claims under Workers' Compensation acts and other

employee benefits acts covering all of CONTRACTOR'S employees engaged in performing the work under this Contract; from claims for damages because of bodily injury, including death; and from claims for damages to property, all with coverage limits satisfactory to METRO. This insurance must cover CONTRACTOR'S operations under this CONTRACT, whether such operations be by CONTRACTOR or by any subcontractor or anyone directly or indirectly employed by either of them.

## ARTICLE VII

### TITLE AND RISK

The CONTRACTOR retains title of the Equipment until such time as the purchase price is paid in full. METRO will maintain the Equipment in top condition to the benefit of the CONTRACTOR from the date of installation until the title is transferred and METRO will take all the necessary steps to protect the Equipment against damage and to protect the CONTRACTOR'S title.

## ARTICLE VIII

### DELIVERY AND INSTALLATION

The Equipment will be delivered at METRO's premises. The installation will be done by PIXEL personnel if a SERVICE ASSURANCE AGREEMENT is signed by METRO. Otherwise METRO will do its own installation.

## ARTICLE IX

### WARRANTY

The Equipment is guaranteed by PIXEL, Inc., for a period of thirty (30) days following the installation date.

The CONTRACTOR agrees that the contents of the EMME 2

programs provided by virtue of this CONTRACT will be reliable and sure. The CONTRACTOR undertakes to correct unforeseen minor errors in the program at no cost. However, METRO recognizes and expressly agrees that the CONTRACTOR will be in no way held responsible for any loss or secondary or indirect damage which at any time results or originates from the use or operation of any such program, or a defect in the Equipment, or false or incorrect data, or any other cause.

The CONTRACTOR agrees that the description of EMME 2 is as contained in the EMME 2 User's Manual and that the system as described when implemented on the PIXEL can handle a network size of 400 zones, 2,800 nodes and 8,000 links. METRO agrees that there are minor additions needed to complete the package on the PIXEL and prepare final documentation. The CONTRACTOR agrees that these minor additions and final system documentation will be delivered and installed within three (3) months of the date of initial installation at no extra cost, other than travel and per diem and \$300.00 per day for the duration of the final installation, not to exceed five (5) days.

#### ARTICLE X

##### GENERAL CONDITIONS

Payment of the purchase price of the EMME 2 programs gives METRO the non-exclusive right to use the programs in conjunction with the equipment furnished by the CONTRACTOR. METRO agrees not to reproduce or sell the contents of the programs or allow it to be used on any equipment other than that provided. The CONTRACTOR expressly reserves complete title and rights to the contents of the

programs and METRO recognizes and agrees that the CONTRACTOR has exclusive rights to reproduce, publish, sell and distribute in any manner to any other persons, the contents of the programs.

This CONTRACT binds the contracting parties, their administrators, successors and other legal representatives.

At the time of signing this CONTRACT, delivery of the goods mentioned to METRO has not taken place.

METRO acknowledges receipt of a copy of this CONTRACT.

#### ARTICLE XI

##### PUBLIC CONTRACTS

CONTRACTOR shall comply with all applicable provisions of ORS Chapters 187 and 279 and all other conditions and terms necessary to be inserted into public contracts in the state of Oregon, as if such provisions were a part of this Contract. CONTRACTOR acknowledges receipt of copies of ORS 187.010-.020 and 279.310-430.

#### ARTICLE XII

##### ATTORNEY'S FEES

In the event of any litigation concerning this Contract, the prevailing party shall be entitled to reasonable attorney's fees and court costs, including fees and costs on appeal to an appellate court.

#### ARTICLE XIII

##### MISCELLANEOUS

This Contract represents the entire and integrated agreement between METRO and CONTRACTOR and supersedes all prior negotiations, representations or agreements, either written or

oral. This Contract may be amended only by written instrument signed by both METRO and CONTRACTOR. The law of the state of Oregon shall govern the construction and interpretation of this Contract. This Contract may not be assigned or transferred without METRO's written consent.

CONTRACTOR

METROPOLITAN SERVICE DISTRICT

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
METRO General Counsel

KL/srb  
8531B/312  
05/10/83

## EXHIBIT "A"

### SCOPE OF WORK

### AND

### TERMS OF PAYMENT

#### 1. SCOPE OF WORK

The Contractor shall cause to be delivered the hardware and software described in the list which follows; the Contractor will be responsible for the installation of EMME 2 and for its satisfactory performance on the PIXEL hardware.

#### 2. HARDWARE AND SOFTWARE LIST AND PRICE QUOTATION

##### Equipment

10 MHZ 68000 Based Central Processing Unit	
Main Memory of 2Mb Zero Wait State DRAM	
I/O Processor Board with 128 Kb Memory	
Winchester Disk Controller	
One 40 Mb Winchester Disk Drive	
Double Density Diskette Controller	
One 630 Kb 8" Diskette Drive	
PIXEL Terminal Controller (eight ports)	
Eight Asynchronous RS-232 Serial Ports	
Two Parallel Ports	US \$24,116.00
Back-Up/Communications Combination	4,240.00
(Dual Function Controller Tape	
Back-Up Kit Communications Serial Board)	
2 PIXEL Terminals with Green	
Phosphor Terminal	3,650
2 PIXEL Terminals with Green	
Phosphor Terminal Option	
and IBM PC Keyboard	
Cables - 3 of 50 ft; 2 of 100 ft	<u>450.00</u>
	US \$32,456.00

##### Languages/Utilities

UNIX O/S and language ("C")	
SVS PASCAL	
SVS FORTRAN 77	
SMC BASIC or SVS BASIC Plus	
User's Manuals	US \$ 3,879.00



PIXEL Word Processor  
PIXEL Spreadsheet  
Commjob Communications Software  
UNIFY Database System

User's Manuals	4,080.00
	US \$7,959.00
EMME 2	US \$12,500.00
Total: PIXEL Hardware/Software	\$40,415.00
EMME 2	12,500.00
Total	\$52,915.00

3. The equipment listed in 2 above shall be delivered no earlier than July 1, 1983 and no later than July 30, 1983.
4. INRO will provide as part of the initial EMME 2 installation, five days of work and training at the purchaser's site. The purchaser is to pay travel costs and a per diem of \$90.00 per day for the five days. This cost not to exceed \$1,300.00. (One airfare at \$850.00, \$90.00 x 5 days per diem.)
5. INRO will provide as part of the final EMME 2 installation, a maximum of five (5) paid (fee for service) days of staff support at \$300.00 per day and up to six (6) total person days of support. This requires one airfare and six days of per diem at \$90 per day. Cost not to exceed \$2,890.00 (one airfare at \$850.00, six days at \$90.00 per diem and five days at \$300.00 per day).

#### Terms and Arrangement of Payment

1. Metro agrees to pay Contractor TEN THOUSAND TWO HUNDRED AND NO/100THS (\$10,200.00) DOLLARS, being approximately 25 percent of the PIXEL purchase, at the time of contract initiation (signing). This is an advance to secure the purchase in a timely manner.
2. Metro agrees to place the remainder of the PIXEL purchase cost in Escrow at the First Interstate Bank of Oregon, N.A., being the sum of THIRTY THOUSAND TWO HUNDRED FIFTEEN AND NO/100THS (\$30,215.00) DOLLARS to be released under joint signature of Metro and Contractor within thirty (30) days of receipt and installation of equipment in Portland.
3. Metro agrees to pay the sum of THIRTEEN THOUSAND EIGHT HUNDRED AND NO/100THS (\$13,800.00) DOLLARS to the Contractor, being the cost of the EMME 2 package and the travel and per diem costs of ONE INRO representative for five days to configure and install the EMME 2 system on the PIXEL, within thirty (30) days of initial installation. This subject to the purchasers approval that EMME 2 is operational and meets described performance criteria.

4. Metro agrees to pay up to a maximum of TWO THOUSAND EIGHT HUNDRED NINETY AND NO/100THS (\$2,890.00) DOLLARS within thirty (30) days of the final installation of the updated software.

KL/srb  
8531B/312  
05/10/83

STAFF REPORT

Agenda Item No. 6.6

Meeting Date May 26, 1983

CONSIDERATION OF AUTHORIZING A NEW REGIONAL  
PLANNER 1 POSITION IN THE SOLID WASTE DEPARTMENT

Date: May 16, 1983

Presented by: Jennifer Sims

FACTUAL BACKGROUND AND ANALYSIS

On May 5, 1983, the Council approved the FY 1983-84 Budget which includes a new Regional Planner 1 position in the Solid Waste Department. It is essential that we fill this position immediately in order to begin work with the Regional Services Committee's Metro Council Recycling Subcommittee. The Council is requested to authorize the addition of the position in the current fiscal year to allow advance recruitment and hiring. The anticipated fiscal impact is \$2,010. The most recent financial reports (April 15, 1983) indicate adequate revenue and appropriations to cover this expense.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends approval of the Resolution establishing a new Regional Planner 1 in the Solid Waste Department in FY 1982-83 to facilitate Waste Reduction planning.

COMMITTEE CONSIDERATION AND RECOMMENDATION

On May 16, 1983, the Council Coordinating Committee unanimously recommended Council approval of Resolution No. 83-406.

JS/gl  
8511B/283  
05/06/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AUTHORIZING A )  
NEW REGIONAL PLANNER 1 POSITION )  
IN THE SOLID WASTE DEPARTMENT )  
)

RESOLUTION NO. 83-406

Introduced by the Council  
Coordinating Committee

WHEREAS, The Council approved the FY 1983-84 Budget which includes a new Regional Planner 1 position in the Solid Waste Department; and

WHEREAS, It is necessary to immediately begin work with the Metro Council Recycling Subcommittee; and

WHEREAS, Adequate revenue and appropriations exist to cover this expense; now, therefore,

BE IT RESOLVED,

That the Metro Council hereby authorizes the addition of a Regional Planner 1 position in the Solid Waste Department.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

JS/gl  
8511B/283  
05/06/83

STAFF REPORT

Agenda Item No. 6.7

Meeting Date May 26, 1983

CONSIDERATION OF THE WAIVER OF PERSONNEL RULES,  
SECTION 32(d)(1) "WHEN AN EMPLOYEE IS APPOINTED  
ABOVE THE ENTRY MERIT RATE HE/SHE IS NOT ELIGIBLE  
FOR A SALARY INCREASE FOR ONE YEAR," ("UNLESS THE  
EXECUTIVE OFFICER APPROVES AN EXTRA MERITORIOUS  
SALARY INCREASE.")

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Date: May 9, 1983

Presented by: Councilor Banzer

FACTUAL BACKGROUND AND ANALYSIS

Mr. Raelton R. Barker was appointed as Council Assistant beginning September 27, 1982 by the Presiding Officer of the Council. In that appointing letter, dated September 21, 1982, it was also noted that after serving a six-month probationary period at an annual salary of \$27,500 (i.e., @ \$13.22 per hour), Mr. Barker would be eligible for a five percent merit increase, i.e. to \$28,872 annually, or, \$13.881 hourly. The probationary period was completed on March 27, 1983.

To effect the contents of that letter, the Council is required to ratify the attached waiver of the Personnel Rule cited above.

PRESIDING OFFICER'S RECOMMENDATION

The Presiding Officer recommends ratification.

COMMITTEE CONSIDERATION AND RECOMMENDATION

On May 16, 1983, the Council Coordinating Committee unanimously recommended Council approval of the waiver of Personnel Rules.

JS/DK/srb  
8433B/349  
05/17/83



METRO

**METROPOLITAN SERVICE DISTRICT**

527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

**MEMORANDUM**

Date: May 9, 1983  
To: Cindy Banzer, Presiding Officer  
From: Jennifer Sims, Mgr., Budget & Admin. Services  
Regarding: Waiver of Personnel Rules

I hereby request your approval of a variance to the Personnel Rules as allowed by Section 5 of the Rules.

This variance is to waive the requirement that an employee appointed above the entry merit rate is not eligible for a salary increase for one year (Section 32(d)(1)). Mr. Raelton Barker was appointed above the entry merit rate, but not to the maximum merit rate, and was advised that he would be eligible for a five percent merit increase after serving a six month probationary period beginning September 27, 1982 (see attached letter of employment). Mr. Barker should receive the five percent merit increase in the amount of \$28,872 annually, or, \$13.881 hourly, retroactively from March 27, 1983.

This variance must be ratified by the Council.

Please sign below to indicate your approval of this variance.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Cindy Banzer, Presiding Officer

JS/DK/srb  
8434B/D5

Attachment

cc: Rick Gustafson, Executive Officer  
Mike Ogan, Employees' Association



**METRO**

**METROPOLITAN SERVICE DISTRICT**  
527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

September 21, 1982

Rick Gustafson  
EXECUTIVE OFFICER

Metro Council  
Cindy Banzer  
PRESIDING OFFICER  
DISTRICT 9

Bob Oleson  
DEPUTY PRESIDING  
OFFICER  
DISTRICT 1

Charlie Williamson  
DISTRICT 2

Craig Berkman  
DISTRICT 3

Corky Kirkpatrick  
DISTRICT 4

Jack Deines  
DISTRICT 5

Jane Rhodes  
DISTRICT 6

Betty Schedeen  
DISTRICT 7

Ernie Bonner  
DISTRICT 8

Bruce Etlinger  
DISTRICT 10

Marge Kafoury  
DISTRICT 11

Mike Burton  
DISTRICT 12

Mr. Raelton R. Barker  
11340 S.W. Viewmount Court  
Tigard, Oregon 97223

Dear Rae:

This will confirm our offer of employment to you as Council Assistant at Metro.

Effective September 27, 1982, your annual salary will be \$27,500. In accordance with Metro's Personnel Rules, you will serve a six month probationary period and will be eligible for a 5% merit increase. This action does require the Council to waive the Personnel Rules, which we will handle at the appropriate time.

We look forward to having you join our staff on Monday.

Sincerely,

Councilor Cindy Banzer  
Presiding Officer

CB:tj

GENERAL STATEMENT OF DUTIES:

This position assists local jurisdictions and citizens in understanding and participating in Metro programs and issues and serves as liaison between Councilors, Metro staff and the public. Performs related work as required.

SUPERVISION RECEIVED:

Works under supervision of Presiding Officer.

SUPERVISION EXERCISED:

Supervises Council support staff.

EXAMPLES OF PRINCIPAL DUTIES:

An employee in this classification may perform any of the following duties. However, these examples do not include all the specific tasks which an employee may be expected to perform.

1. Informs Councilors of local needs and works with Local Government Assistant and other Metro staff to ensure that relevant information about mutual problems and Metro programs is being exchanged.
2. Suggests projects for Council staff from which at least several Councilors will benefit. These activities will emphasize various written communications and public relations skills. (Work requests of value to a single Councilor will receive a low priority.)
3. Although it is not the intent to cut off contact between Councilors and Metro staff, this individual will serve as liaison with Metro staff. The person will also work on assigned policy development matters, contribute to the issue agendas of the meetings, and offer briefings to Councilors on critical issues.
4. Monitors Metro programs and informs Councilors of major developments.
5. Supervises Council support staff.

RECRUITING REQUIREMENTS:  
KNOWLEDGE, SKILL, ABILITY

Knowledge of principles of public policy setting, local government structures, public involvement process. Ability to collect information and analyze it effectively, develop and maintain effective working relationships with other, work independently with



self-initiative, exercise discretion and good judgment, express oneself in writing.

EXPERIENCE AND TRAINING:

Training and education equivalent to graduation from an accredited university or college with a degree in Political Science, Public Administration or related field. Extensive public contact, experience in state or local government.

Familiarity with Metro's structure and processes.

CV/srb  
7000B/325



METROPOLITAN SERVICE DISTRICT  
527 S.W. HALL ST., PORTLAND, OR. 97201, 503/221-1646

## MEMORANDUM

Date: May 16, 1983  
To: Cindy Banzer, Presiding Officer  
From: Ray Barker, Council Assistant  
Regarding: Council Assistant Assignments and Projects

This memo is in response to your request for a list of assignments and projects I have completed during the period September 27, 1982 through March 27, 1983. It should be noted that the following list is not all inclusive because I have not kept a record of every assignment I have been given or have completed.

1. Attended 60 night meetings: Council, standing Committees, and special meetings.
2. Have written memoranda, resolutions, staff reports, work plans and letters (116 pages of work in my file).
3. Prepared and presented Council portion of FY 1983-84 budget.
4. Worked with R. W. Beck representative and Metro staff on ERF report (coordinated meetings, etc.).
5. Coordinated legislative reception.
6. Coordinated Council/Staff Workshop at Marylhurst College in October.
7. Organized panel that reviewed the bids on Alaskan Tundra project for MBE compliance.
8. Organized Committee to review MBE policy. Wrote letters and memos, helped identify issues, etc.
9. Coordinated efforts to host B.C. Minister of Environment and his group.
10. Met with 15 members of State Legislature regarding HB 2228.
11. Wrote majority of testimony presented before House Intergovernmental Affairs Committee regarding HB 2228.

12. Gave written and oral reports to Council and Council Coordinating Committee regarding general legislation. Reviewed over 20 proposed bills.
13. Supervised Council Secretary in preparing coorespondence, arranging meetings, and similar tasks.
14. Assisted Council in selecting Councilor for District 2. Organized committee that assisted Council; scored their evaluation sheets, wrote letter of thanks; wrote news article advertising position, prepared activity schedule, etc.
15. Coordinated efforts for dinner/program for four retiring Councilors: mailing list, letters, programs, invitations, etc.
16. Coordinated efforts for swearing in ceremony for new Metro Councilors: mailing lists, letters, refreshments, photographer, invitations, programs, etc.
17. Set up briefing on transportation funding for new Councilors.
18. Set up briefing regarding land use issues for new Councilors.
19. Coordinated efforts to select citizens to work on the budget with Council Coordinating Committee.
20. Coordinated efforts to obtain portraits of new Councilors.

REQUESTS FROM INDIVIDUAL COUNCILORS (sampling)

1. Prepared a summary of Oregon Environmental Council policy statements.
2. Wrote memo regarding drainage management.
3. Set up special meetings for standing committee chairpersons.
4. Written response to question regarding credit policy for payment of disposal charges.
5. Prepared written recommendations regarding letters to employees upon termination of employment.
6. Prepared mailing lists.
7. Written response to question regarding commuter studies for Sunset Corridor.

8. Written response to question regarding budget for Data Resources Center.
9. Obtained budget and other information regarding Tri-Met.
10. Written response regarding FY 84 local government dues assessment.
11. Wrote letter to the editor regarding errors in a story about the R. W. Beck Report.
12. Read the Bybee Report on fiscal management.
13. Read the Futures Committee report on "Critical Choices."
14. Obtained information from the state of Massachusetts regarding solid waste system.
15. Wrote memo regarding use of gravel pits.
16. Checked to see if we were following correct procedures regarding solid waste rates.
17. Contacted Committee chairpersons regarding their Committee's agenda.
18. Status report on Council budget accounts.
19. Information regarding Bi-State Advisory Committee.
20. Request for book: "Governing the Twin Cities Region."
21. Population information regarding unincorporated areas in the region.
22. Arrange meetings with Legislators.
23. Information regarding CTRC contract.

RB/gl  
8589B/D3

CONSIDERATION OF ORDINANCE NO. 83-154 FOR THE  
PURPOSE OF AMENDING THE FY 1982-83 BUDGET AND  
APPROPRIATIONS SCHEDULE AND AMENDING ORDINANCE  
NO. 82-132 IN ORDER TO START EARLY ACQUISITION  
OF COMPUTER HARDWARE AND SOFTWARE FOR  
TRANSPORTATION PLANNING

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Date: April 25, 1983

Presented by: Jennifer Sims

FACTUAL BACKGROUND AND ANALYSIS

This amendment of the FY 1982-83 budget is for the Planning Fund, Transportation Department only, and represents no net change in budget but a reallocation of \$29,230 between the Materials and Services portion of the budget and the Capital Outlay portion of the budget.

The purpose of this is to initiate the purchase of the PIXEL micro-computer and EMME 2 software for use by the Transportation Department. The remainder of the purchase will be in the FY 1983-84 budget currently being finalized.

BACKGROUND

The Transportation Department has carried out a careful search and analysis for a more cost-effective, affordable transportation planning tool than the one presently used. The package chosen and described here has no available practical competition that could meet the needs of the department.

Project Justification

The computer and software proposed for acquisition are elements in a three-part computer purchase:

1. EMME 2 travel-forecasting software
2. PIXEL micro-computer (and peripherals)
3. graphics equipment.

The overall package is being acquired to move Metro's travel forecasting off the mainframe-computer-based UTPS system and onto the micro-computer-based EMME 2 system. The benefits associated with this conversion include both lower cost and higher staff productivity. Lower cost will be achieved by replacing recurring annual computer costs with a one-time acquisition cost. Staff productivity gains will be realized because the software is easier to use than UTPS and because of excellent graphics capabilities.



### Cost-Effectiveness

The cost of the system can be broken into three parts: the software for transportation planning and general use; the host microcomputer and its associated peripherals; and the graphics hardware. The first two effectively replace the current UTPS package and the mainframe computer with an improved system. The third part--the graphics equipment--greatly enhances Metro's capability as compared to UTPS. Total project costs are as follows:

Software	\$20,000
Host computer hardware	39,310
Graphics hardware	<u>39,200</u>
Total	\$98,510

Metro's current annual computer budget for transportation planning ranges from \$50-\$60,000 in computer time (this has been as high as \$80,000) per year. Annual maintenance costs for the new system are estimated at \$7,200. The pay-back period is thus 21 months after which time the comparable costs revert to maintenance only or a reduction of 88 percent in annual computer costs. It is clear that the proposed system is significantly cheaper over the five-year period which could be considered an economic lifetime for this technology. It is cheaper even over a two-year life.

	<u>Cost</u>		<u>Saving</u>	
	<u>Proposed System</u>	<u>Current System</u>	<u>\$</u>	<u>Percent</u>
2-Year Analysis	111,210	126,000	14,790	11.7
5-Year Analysis	132,810	315,000	182,190	57.8

### Purchase vs. Lease

An analysis described in an April 13 memo from Keith Lawton to Carlson, Cotugno and Sims, and prepared at the request of the Budget Committee, showed clear savings of purchase over lease (about \$33,000 over three years). There is a further savings of \$30,000 to Metro/Transportation Department as there is a new \$30,000 funding source available for a purchase. The recommendation of the Budget Committee was to purchase.

### Purchasing Schedule

In order to obtain the equipment in a timely manner, the purchases were broken down into three steps. Purchase #1 - obtaining the PIXEL, peripherals and the software would take place in two increments: a half payment of \$29,230 to enable the ordering of equipment this year, with a contract for the second half payment to take place after July 1, on dispatch of the equipment. Purchase #2 (a statistics package for transportation) would follow in July. Purchase #3, the

Tektronix graphics equipment would follow on receipt of Federal Section 9 funds, expected in September.

The change requested by this Ordinance is for the FY 1983 portion of Purchase #1. (See following table.)

COMPUTER PURCHASE FUNDING

<u>Source</u>	<u>FY 83</u>	<u>FY 84</u>	<u>Total</u>
Purchase #1:			
Metro	\$ 0	\$11,442	\$11,442
PL	29,230	17,788	47,018
	<u>\$29,230</u>	<u>\$29,230</u>	<u>\$58,460</u>
 Purchase #2:			
PL		\$850	\$850
 Purchase #3:			
Metro Discretionary		\$ 3,920	\$ 3,920
Section 9		28,224	28,224
Metro Match		7,056	7,056
		<u>\$39,200</u>	<u>39,200</u>
 GRAND TOTAL	 \$29,230	 \$69,280	 \$98,510

TPAC is scheduled to review on April 29, the Resolution amending the 1983 UWP to authorize the additional \$29,230 PL funds.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends adoption.

COMMITTEE CONSIDERATION AND RECOMMENDATION

The Budget Committee has approved and recommended the purchase. The Ordinance will have gone before the Regional Development Committee before Council's final action.

JS/KL/srb  
8429B/349  
04/26/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

AN ORDINANCE RELATING TO THE )  
FY 1982-83 BUDGET AND APPROPRIA- )  
TIONS SCHEDULE; AND AMENDING )  
ORDINANCE NO. 82-132 )

ORDINANCE NO. 83-154

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

The amendments to the FY 1983-84 Budget of the Metropolitan Service District attached hereto as Exhibit A and amendments to the FY 1982-83 Schedule of Appropriations attached hereto as Exhibit B to this Ordinance are hereby adopted.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

ATTEST:

\_\_\_\_\_  
Clerk of the Council

JS/srb  
6328B/252  
04/26/83



ORDINANCE NO. 83-154

EXHIBIT A

Amendments to the FY 1982-83 Adopted Budget,  
Planning Fund, Transportation Department

	<u>Current Budget</u>	<u>Amendment</u>	<u>Revised Budget</u>	<u>Reason</u>
Total Personal Services	\$555,235	0	\$555,235	
Materials & Services				
Contractual Services	\$167,682	\$(29,230)	\$138,452	Not Needed
All Other Accounts	<u>44,150</u>	<u>0</u>	<u>44,150</u>	
Total Materials & Services	\$211,832	\$(29,230)	\$182,602	
Capital Outlay				
Office Equipment	<u>\$1,000</u>	<u>\$29,230</u>	<u>\$30,230</u>	micro- computer purchase
Total Capital Outlay	\$1,000	\$29,230	\$30,230	
Total Transportation Department	\$768,067	0	\$768,067	

S/srb  
6328B/252  
04/26/83

ORDINANCE NO. 83-154

EXHIBIT B

Planning Fund, Transportation Department

	<u>Current Appropriation</u>	<u>Amendment</u>	<u>Revised Appropriation</u>
Personal Services	\$555,235	\$ 0	\$555,235
Materials & Services	211,832	(29,230)	182,602
Capital Outlay	<u>1,000</u>	<u>29,230</u>	<u>30,230</u>
Total Department	\$768,067	0	\$768,067

JS/srb  
6328B/252  
04/26/83

CONSIDERATION OF ORDINANCE NO. 83-155, AN ORDINANCE  
RELATING TO THE COMPOSITION OF THE CONTRACT REVIEW  
COMMITTEE AND AMENDING ORDINANCE NO. 82-130

Date: May 4, 1983

Presented by: Jennifer Sims

FACTUAL BACKGROUND AND ANALYSIS

Ordinance No. 82-130 was adopted March 4, 1982, and created a Contract Review Committee of the Council and incorporated Metro's contract procedures. Section 1(b) designated that the Committee would be "comprised of the Deputy Presiding Officer, the Chair of the Council Coordinating Committee, and a third member to be appointed annually by the Presiding Officer of the Council."

In February 1983, prior to the annual appointment of committee members, the Council Presiding Officer received requests from Councilors Oleson (Deputy Presiding Officer) and Kirkpatrick (Chair of the Council Coordinating Committee) to appoint another Councilor in their place to the Contract Review Committee. The current ordinance would not allow for substitutions of this sort.

The amendment to Ordinance No. 82-130 would allow all three members of the Contract Review Board to be appointed annually by the Presiding Officer of the Council and would allow for the wishes of Council members to be considered in Committee appointments. This process is consistent with the method used for other Metro committee assignments.

The alternative to this Ordinance is to reappoint the Contract Review Committee for 1983 to be consistent with the existing Ordinance.

There is no budget impact.

EXECUTIVE OFFICER'S RECOMMENDATION

I recommend approval of the attached Ordinance allowing all members of the Contract Review Committee to be appointed annually by the Presiding Officer of the Council.

COMMITTEE CONSIDERATION AND RECOMMENDATION

On May 16, 1983, the Council Coordinating Committee recommended, by a three to two vote, Council approval of Ordinance No. 83-155.

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

AN ORDINANCE RELATING TO THE )  
COMPOSITION OF THE CONTRACT REVIEW )  
COMMITTEE OF THE COUNCIL AND )  
AMENDING ORDINANCE NO. 82-130 )  
ORDINANCE NO. 83-155

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

Section 1. Metro Ordinance No. 82-130, Section 1(b) is  
hereby amended to read:

"(b) The Contract Review Committee shall  
be comprised of three members to be  
appointed annually by the Presiding  
Officer of the Council."

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

ATTEST:

\_\_\_\_\_  
Clerk of the Council

SK/gl  
8505B/283  
05/06/83

STAFF REPORT

Agenda Item No. 8.1

Meeting Date May 26, 1983

CONSIDERATION OF RESOLUTION NO. 83-405 SUPPORTING  
THE GOVERNOR'S BUDGET REQUEST FOR CONSTRUCTION  
OF NEW PRISON SPACE.

Date: May 3, 1983

Presented by: Jack Bails

FACTUAL BACKGROUND AND ANALYSIS

In the past 20 years, Oregon has not constructed a major correctional facility. Meanwhile, the following changes have caused Oregon's prisons to have to house 894 felony offenders over the designed capacity:

	<u>1960</u>	<u>1982</u>
Population	1.77 million	2.66 million
Felony Crimes	16,322	187,953
Felony Arrests	4,032	37,510
Time Served*	39.4 months	64.5 months

\*The amount of time served by violent offenders has increased by 50 percent, and the proportion of violent offenders in the prison population has grown from 45 percent to 55 percent of the total.

Some Action Taken So Far

- 80 percent of all first time felony convictions result in probation.
- Early release actions by the parole board.
- Single cells have been converted to double cells.
- Day rooms, work areas, and other common use areas have been converted to house prisoners.
- Temporary leave policy from prison has been instituted.

EXECUTIVE OFFICER'S RECOMMENDATION

No recommendation.

COMMITTEE CONSIDERATION AND RECOMMENDATION

On May 10, 1983, the Regional Services Committee unanimously recommended that Resolution No. 83-405 be forwarded to the Council with no Committee recommendation.

JB/gl  
8345B/349  
5/11/83

BEFORE THE COUNCIL OF THE  
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF SUPPORTING THE )	RESOLUTION NO. 83-405
GOVERNOR'S BUDGET REQUEST FOR )	
OBTAINING NEW MINIMUM OR MEDIUM )	Introduced by
SECURITY PRISON SPACE )	Councilor Oleson

WHEREAS, Alternative programs and early release policies have reduced the length of stay and numbers of less violent inmates in Oregon's prisons; and

WHEREAS, Oregon's prisons are still overcrowded; and

WHEREAS, Prison program space has had to be converted to housing; and

WHEREAS, Prison cells designed for one inmate have had to be converted to house two inmates; and

WHEREAS, The current prison conditions represent a danger to the community safety; now, therefore,

BE IT RESOLVED,

That the Metropolitan Service District fully supports the Governor's budget request for obtaining new minimum or medium security prison space.

ADOPTED by the Council of the Metropolitan Service District  
this \_\_\_\_\_ day of \_\_\_\_\_, 1983.

\_\_\_\_\_  
Presiding Officer

JB/srb  
8345B/349  
05/03/83



STAFF REPORT

Agenda Item No. 9.1

Meeting Date May 26, 1983

CONSIDERATION OF APPOINTMENT OF COUNCILOR ETLINGER  
TO COUNCIL COORDINATING COMMITTEE

Date: May 17, 1983

Presented by: Presiding Officer  
Cindy Banzer

FACTUAL BACKGROUND AND ANALYSIS

Currently the Council Coordinating Committee consists of five members: Councilor Kirkpatrick, Chair; Councilor Banzer, Vice Chair and Council Presiding Officer; Councilor Bob Oleson, Council Deputy Presiding Officer; Councilor Kafoury, Chair of Regional Development Committee; and Councilor Hansen, Chair of Regional Services Committee.

It is recommended that the Chair of the Contract Review Committee, Councilor Etlinger, be appointed to the Council Coordinating Committee. Council ratification is necessary to make this appointment.

Having a representative of the Contract Review Committee on the Coordinating Committee should help improve the coordination of financial matters within the organization. This action would also increase the size of the Coordinating Committee to six--the same as the Services and Development Committees.

EXECUTIVE OFFICER'S RECOMMENDATION

No Recommendation.

COMMITTEE CONSIDERATION AND RECOMMENDATION

No Recommendation.

RB/gl  
8599B/349  
5/17/83