



METROPOLITAN SERVICE DISTRICT

NEW ADDRESS: 527 SW Hall, Portland, Oregon 97201 222-3671

BOARD OF DIRECTORS

EMERGENCY MEETING

MSD OFFICE
527 SW HALL
CONFERENCE ROOM D

FEBRUARY 21, 1975
2:00 P.M.

A G E N D A

MSD SOLID WASTE ACTION PLAN

METROPOLITAN SERVICE DISTRICT
SOLID WASTE MILLING - TRANSFER SYSTEM

The table below summarizes the results of a net energy analysis of both the existing metropolitan area solid waste system and the proposed MSD milling-transfer system. This analysis shows that the MSD system will conserve an amount of energy equivalent to 54.4 million gallons of gasoline annually. In comparison, the gasoline allotment for the entire State of Oregon for January 1975 is approximately 90 million gallons.

The energy calculations also show that the energy required to process and separate the mixed refuse entering the MSD milling-transfer facilities is only 4 percent of the energy content of the recovered material. The proposed MSD solid waste milling-transfer system is energy efficient, by contributing to the net energy reserves of the region.

ENERGY COMPARISON
EXISTING REFUSE SYSTEM AND MSD MILLING - TRANSFER SYSTEM

ITEM CONSUMING OR RETURNING ENERGY	BRITISH THERMAL UNITS PER YEAR (BTU'S)			GALLONS OF GASOLINE PER YEAR		HORSEPOWER PER YEAR	
	Existing System	Proposed MSD System	Change in Net Energy	Change in Net Energy	Change in Net Energy		
Commercial Refuse Haul	(-) 130 billion	(-) 69 billion	(+) 61 billion	(+) .5 million	(+) 24 million		
Private Citizen Refuse Haul	(-) 94 billion	(-) 1.1 billion	(+) 93 billion	(+) .75 million	(+) 36.5 million		
Refuse Processing and Separation	-	(-) 260 billion	(-) 260 billion	(-) 2.1 million	(-) 102 million		
Transport of Residue and Recovered Material	-	(-) 31 billion	(-) 31 billion	(-) .25 million	(-) 12.2 million		
Energy Recovery - Secondary Material	-	(+) 6.8 trillion	(+) 6.8 trillion	(+) 55.1 million	(+) 2.65 billion		
Disposal Site Operation	(-) 63 billion	(-) 8.9 billion	(+) 54 billion	(+) .4 million	(+) 21.2 million		
TOTAL	(-) 284 billion	(+) 6.4 trillion	(+) 6.7 trillion	(+) 54.4 million	(+) 2.62 billion		

NOTES:

- (+) indicates net energy recovery, (-) indicates net energy consumption.
- Corrugated cardboard recovery rate of 2 percent of solid waste processed, ferrous metal recovery rate of 6 percent and fuel fraction recovery rate of 65 percent of solid waste processed.

A complete copy of the energy analysis summarized above may be examined at the MSD office; 527 S.W. Hall St., Portland, 222-3671.

HON. JAMES J. ROBNETT
Mayor

JACK E. ALLEN
ROBERT T. BRYANT
JACK S. KATO
VIRGIL C. VANDENBURG

City Recorder
MRS. SHARON V. FRENTRESS

City of Happy Valley



10602 S. E. 129th AVENUE
PORTLAND, OREGON 97236

February 27, 1975

Mr. Charles Kemper
Director
Metropolitan Service District
525 S. W. Hall
Portland, Oregon

Dear Mr. Kemper:

I was unable to attend the special meeting of the Metropolitan Service District board of directors held on Friday, February 21, 1975. However, even though I was unable to vote on the solid waste concept passed by a majority of the board members present last Friday, I would like you to know that I fully support that resolution.

You and your staff are doing an excellent job of guiding the MSD Board through this very complicated and far reaching concept of solid waste disposal. You all deserve a vote of thanks not only from the MSD Board but from the people we represent.

I am confident that our present plan represents the best available solution for the solid waste disposal problem within MSD's jurisdiction. We must move forward with this program as rapidly as possible.

Sincerely,


JAMES J. ROBNETT
MAYOR OF HAPPY VALLEY

JJR:sf

cc: Miller Duris
Connie McCready
Mel Gordon
Robert Schumaker

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METRO SERVICE DISTRICT



METROPOLITAN SERVICE DISTRICT

NEW ADDRESS: 527 SW Hall; Portland, Oregon 97201 222-3671

February 20, 1975

MEMORANDUM

TO: MSD Board

FROM: MSD Staff

SUBJECT: RISK EVALUATION OF THE MSD SOLID WASTE PROGRAM

This memo has been prepared to give the MSD Board a status of the Solid Waste Program and also provide an evaluation of the program risks. As the MSD program proceeds, major decisions by the state legislature, local jurisdictions, and the MSD Board will be required. It is imperative that the MSD Board deliberate on these issues and provide the staff with direction.

A. STATUS.

The MSD Board action for the MSD in solid waste management is presented below:

MSD Board Action Record #	Major MSD Board Action Concerning Solid Waste Management
73-46	Board approved alternative plan B (transfer with shredding) out of four alternative Solid Waste Disposal Systems.
74-84	Board accepted the Tri-County Solid Waste Management Councils report and authorizing COR-MET to review and submit comments to the Board by February 22, 1974.

MSD Board Action Record #	Major MSD Board Action Concerning Solid Waste Management
74-93	Board adopted committee recommendations A,B,C,D,E, and amended F and G as responses to the Tri-County Solid Waste Council's suggested modification to solid waste plan B.
74-99	The Board adopted amendments to the Solid Waste Engineering Plan incorporating collection industry's suggestions. Motion to adopt COR-MET's modified Solid Waste Engineering Plan B with the recommendation that each of the initial sites be equipped for air classification, recognizing that the plan can be modified later as appropriate; and also that staff be authorized to continue with pre-engineering design and preliminary site selection.
74-112	Board received testimony on second public hearing of Ordinance No. 9, adopting the MSD Solid Waste Management Plan.
74-203	Board approved recommendations showing private or public responsibilities in the solid waste system.
74-235	Board adopted emergency ordinance No. 26 authorizing development of the Request For Proposal Document.
74-266	Board authorized the staff to release the RFP Document.

MSD Board
February 20, 1975
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MSD Board Action Record #	Major MSD Board Action Concerning Solid Waste Management
74-275	Board authorized distribution of RFP amendment #1 and sub- sequent amendments.
74-281	Executive session to consider proposed individuals to serve on the RFP Evaluation Team.

B. RISK:

1. Operational Capability - The proposed transfer/processing stations would contain high flow refuse handling and processing equipment including ferrous and light combustible separating equipment. The risk of failure of this equipment, although always present, can be reduced by:

- Proper engineering design
- Failsafe bypass systems
- Spare parts equipment
- Proper maintenance

One proposer would guarantee the handling and processing of 95% of the incoming solid waste.

2. Byproducts Market Assurance - The disposal fees for the proposed MSD system will include:

- Operation costs
- Debt service costs
- Landfilling residue costs
- Hauling residue and product costs
- Administrative costs

To offset these costs, the sale of ferrous materials, light combustible materials and other byproducts would be accomplished. At the present time, the risk for sale of the ferrous materials is minimal. (Present market price, \$45.00 to \$55.00 per ton, is for #2 bundle metals) However, the light combustible material markets are more speculative. There is no question that the need for supplemental fuel for "hog fuel" boilers will increase with time as will demand. No long term contracts have been signed in this area. Therefore, the risk in the light combustible fuel markets over the next 5 years is high. The forecasted market value in the next several years from this material is estimated at \$3.50 to \$8.50 per ton. However, to reiterate, no contracts are available for this product.

3. Public Acceptability for Disposal Charge Increase - In order to finance this program, user charges are proposed to pay back capital costs from the state pollution control bonds. Assuming the proposed user fee (Bartle Wells Associated, June 1974) of \$10.00 per ton is used, the disposal fee would increase from \$3.00 to \$10.00 per ton.

This would, however, increase total system cost to the user from approximately \$30.00 to \$37.00 per ton. (\$3.50 to \$4.35/can/month) An increase of 10% to 27%. This assumes no revenues from Resource Recovery Byproducts. The staff cannot assess this risk, however, if the number of available landfills decreases, the public probably would not react negatively to this program.

4. Guaranteed Quantities of Solid Wastes - The cost per ton of operation of the Solid Waste System depends upon the amount of refuse processed. As the refuse amount increases, the cost per ton decreases. For example, the guaranteed tonnage defined in the RFP document is 10,000 tons per week. The cost to process excess tonnage could be 50 to 60% of the base cost. The risk is not that MSD will be able to guarantee minimum tonnage, but that all mixed refuse generated within the MSD would flow to the transfer/processing stations.

5. Committment to a Processing/Separation Method - Another risk is the committment to processing and subsequent separation of handling solid waste. This committment would "lock out" systems such as:

- Pyrolysis
- Incineration (100%)
- Composting
- Etc.

This risk is minimal because the proposed system provides flexibility and adaptability for future technological development. Therefore, if MSD proceeds to achieve maximum recycling and reuse, the proposed system committment would be minimal.

C. ADVANTAGES

1. Reduced Dependency on Landfills - The MSD program has been geared to meet the statewide goal of 90% recycling and reuse of materials by 1982. If this goal can be achieved, the amount of residue to be landfilled will be at least 10% of the present amount. This advantage has several far reaching effects. They are:

- Reduced landfill costs due to reduced materials to be landfilled.

- Extended life of present landfills thus reducing costs in developing new landfills.
- Long range solution for solid waste disposal.
- Reduced need for landfills reduces adverse public reaction for new landfill locations.
- The residue can be easily landfilled or used for structural fill material.

2. Maximum Materials Recovery and Reuse - By processing incoming refuse, the material can be prepared for separation into useable byproducts. These potential byproducts are:

• Ferrous	9.6%
• Solid Waste Fuel Fraction	65%
• Newsprint	13%
• Corrugated	12%
• Glass	5.4%
• Non-ferrous metals	2.0%

NOTE: These percentages do not total 100% because some materials are classified in several categories.

Initially, the program will utilize ferrous and fuel fraction to be followed by newsprint and corrugated, etc. as the markets develop. By utilization of processing and separation, markets can be developed because of consistent byproduct quantities. The statewide goal can hereby be achieved.

3. Reduction of Projected Disposal Costs - Very simply, costs to landfill solid waste in the future will increase at a larger rate than the costs to recover materials. It is estimated that the "cross-point" of the projected cost curves will occur in the 1980-1985 period. Also, the projected value of separated materials is conservative, nevertheless, revenue from recovered materials will increase.
4. Energy Savings - The energy savings from this system is very impressive. Engineering calculations show that a net energy savings could be equivalent to 54.4 million gallons of gasoline annually. The bid proposers have verified this in their proposals. For example, one bit of energy expended could return to the system 25 bits of energy. If MSD could receive economic credits for this system, it would be very easy to justify.

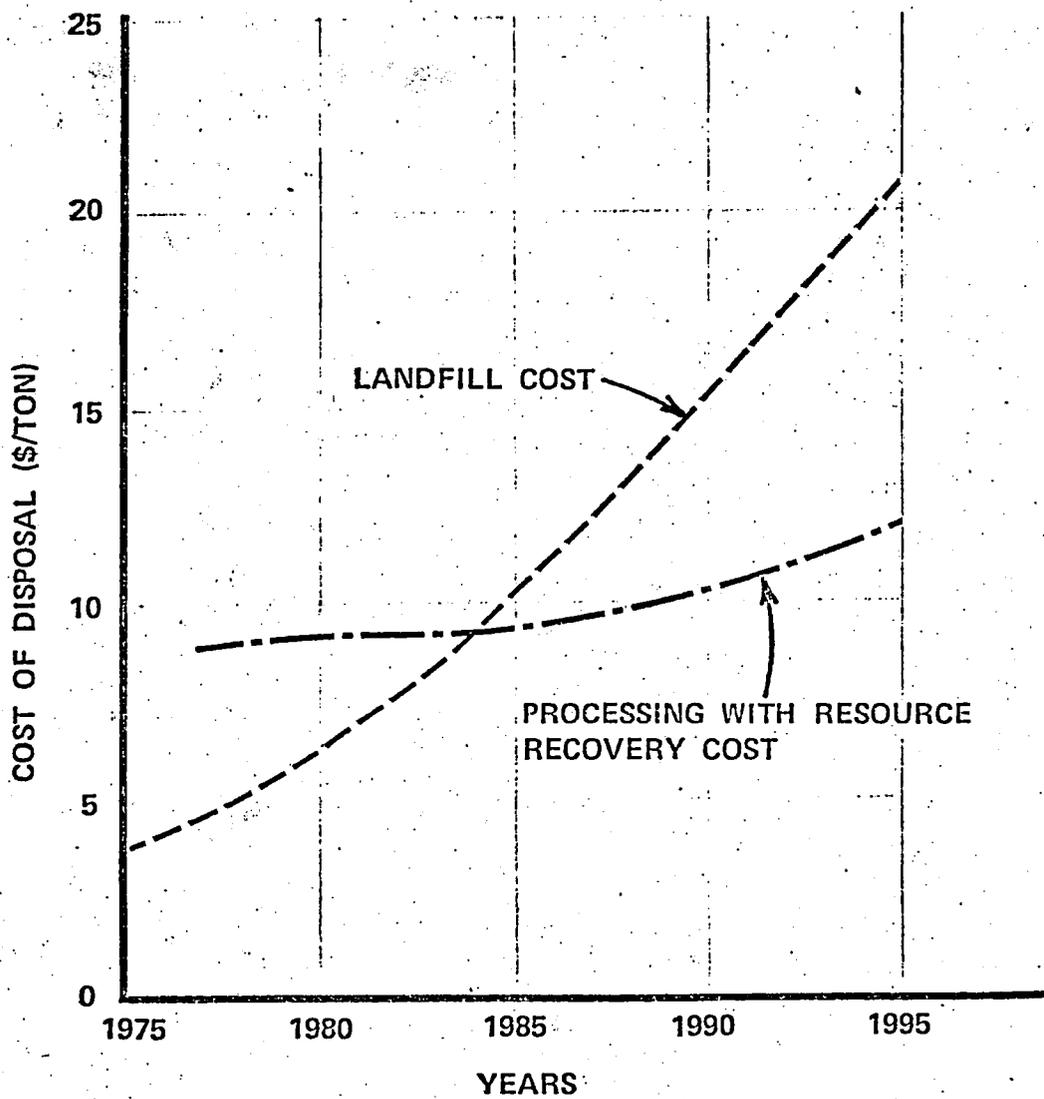
D. OPTIONS.

The options to the MSD Board are listed below:

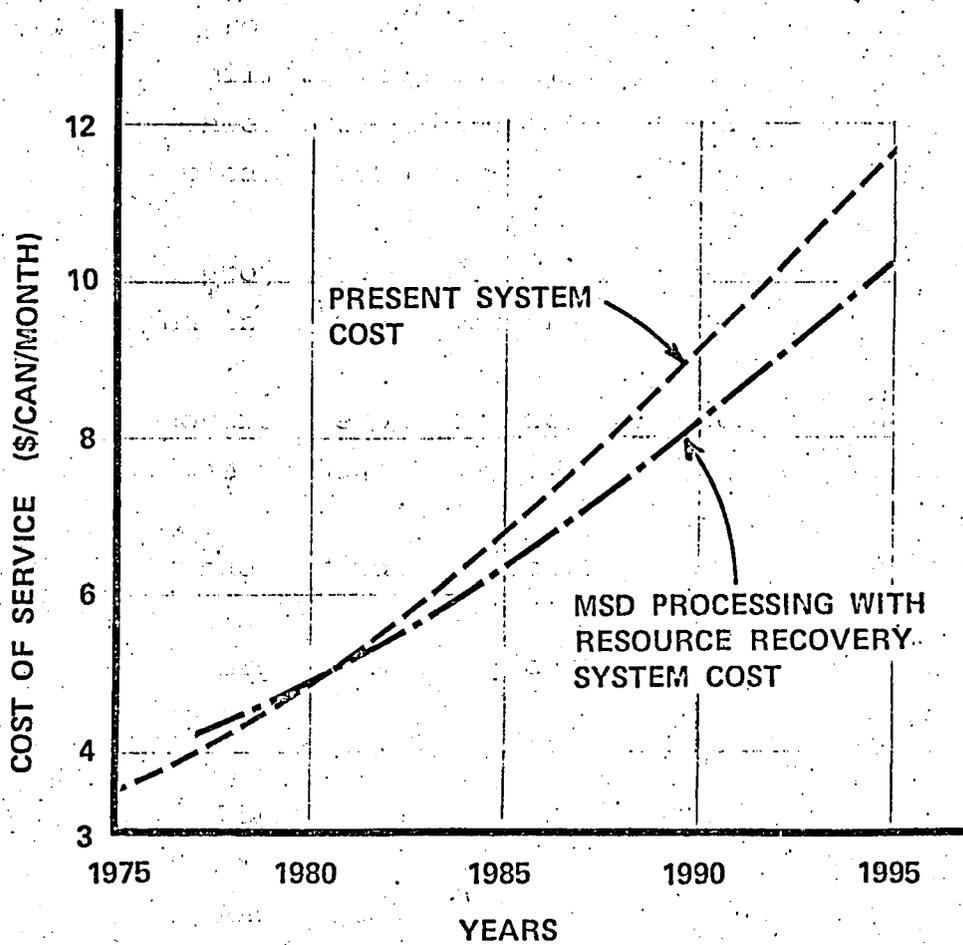
1. Proceed with the Solid Waste Program as it is presently developing with MSD and private industry, ~~bound by a long term contract.~~
2. Proceed with the Solid Waste Program, however, prior to approving long term contracts, require that material by-product contracts for ferrous and fuel fraction be developed with users.
3. Develop an alternate approach that would finance the system through state pollution control bonds and by financing by MSD revenue bonds after a special ballot measure.
4. Proceed with the Solid Waste Program with the stipulation for construction of two transfer/processing station and no committment for the others.
5. Change direction and develop a landfill system only to satisfy the areawide needs. = *new landfill*
6. Stop and develop a landfill system using the presently operating "wet" garbage landfills. = *C &*

E. DECISIONS.

The MSD Board must provide direction to the staff concerning Solid Waste Management by MSD.



METROPOLITAN SERVICE DISTRICT
 PROJECTED SOLID WASTE DISPOSAL COSTS
 1975 - 1995



METROPOLITAN SERVICE DISTRICT
 PROJECTED COST OF SOLID WASTE SERVICE
 1975 - 1995

NOTES

The following assumptions were made in developing the curves titled, "Projected Solid Waste Disposal Costs, 1975-1995" and "Projected Cost of Solid Waste Service, 1975-1995":

- The proposal to design, construct, and operate the MSD milling-transfer stations submitted by Parker Northwest Construction Company was used as a "typical" proposal.
- The projected average annual waste quantities were used in all calculations.
- Recovered resources are 72 percent of incoming refuse through 1982; 90 percent thereafter.
- Revenue per ton of recovered resource is:

Light combustible material--\$5 per ton in 1977

Ferrous metal--\$30 per ton in 1977

Reclaimed residue--\$8 per ton in 1983

- DEQ Grant/Loan amount is \$20 million.
- Residue fill cost is \$3 per ton in 1977.
- Average collection and transport cost is \$28.30 per ton in 1973.
- Cost of weekly refuse collection for one can is \$3.50 in 1975.

- Cost of conventional sanitary landfill is \$3.80 per ton in 1975.

- Inflation rates are:

Landfill--10 percent per year through 1980, 7 percent thereafter.

Residue fill--4 percent per year through 1982, -4 percent thereafter.

Contractor's fee--5 percent per year through 1995

Collection and transport--8 percent per year through 1980, 5 percent thereafter

Revenue from resources--5 percent per year through 1995

MSD administration--5 percent per year through 1995