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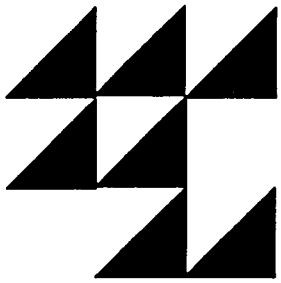
# SOLID WASTE MANAGEMENT DEVELOPMENT GUIDE/POLICY PLAN

September 26, 1991



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The Metropolitan Council coordinates the planning and development of the seven-county Metropolitan Area. The Council is authorized by state and federal laws to plan for highways and transit, sewers, parks and open spaces, airports, land use, air and water quality, waste management, health, housing, aging and arts.

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# PREFACE

## PURPOSE

This document is a plan for managing the Metropolitan Area's solid waste through the year 2010. Adopted by the Metropolitan Council on September 26, 1991, it replaces the *Solid Waste Management Development Guide/Policy Plan* adopted by the Council on March 14, 1985. It stresses a regionally shared and integrated solid waste management system that employs a variety of technologies to manage the various components of the waste stream in the most environmentally safe and cost-effective manner. It is consistent with the state's solid waste management hierarchy encouraging waste reduction, recycling, yard waste and food waste composting, resource recovery, and the most appropriate management of rejects and residuals at every stage, while supporting landfilling as a necessary, but least preferred, alternative.

## AUTHORITY

The policy plan carries out state and federal requirements for proper solid waste management. It serves as a guide for developing a regional solid waste management system that emphasizes recovery of resources and minimizes land disposal of solid waste.

The policy plan has been prepared in compliance with the Waste Management Act of 1980 as amended (Minn. Stat. 473.149), which directs the Council to develop a long range solid waste management plan for the Twin Cities Metropolitan Area, containing goals and policies for solid waste management, including recycling and household hazardous waste. The statute requires that the regional plan contain objectives to abate land disposal of mixed municipal solid waste and of specific components of the solid waste stream, including residuals and ash, to the greatest extent feasible and prudent.

In addition, the solid waste policy plan serves as the Metropolitan Area's portion of the state solid waste management plan required by federal Public Law 94-580, the 1976 Resource Conservation and Recovery Act (RCRA). RCRA requires that states develop environmentally acceptable methods of managing solid and hazardous wastes and establishes guidelines for the collection, transportation, separation, recovery and disposal of solid wastes. The plan has been prepared in accordance with federal laws.

## RELATIONSHIP TO OTHER METROPOLITAN COUNCIL PLANS

The solid waste policy plan is one chapter of the Council's *Metropolitan Development Guide*. This chapter, like the other guide chapters, incorporates the broader policies for coordination of regional development contained in the *Metropolitan Development and Investment Framework*

(MDIF). It supports the orientation of the framework on the nature, timing and magnitude of regional growth. The MDIF's objectives include: protection and preservation of the natural environment by basing physical and economic development decisions on sound environmental practices; and establishment of resource management processes that incorporate and interrelate all planning programs under the Council's jurisdiction.

Consistent with the MDIF, the Council has adopted this plan for solid waste management to protect the public health, safety and welfare of the people of the Metropolitan Area; to reduce reliance on land disposal methods; and to ensure that environmentally safe and efficient methods are used to manage solid waste.

# COUNCIL USE OF THIS PLAN

The Council will use this policy plan to meet its responsibilities as assigned by the federal and state statutes previously cited. These responsibilities include:

Review and approval of county solid waste master plans, county annual reports and proposals for county waste districts and waste flow designation.

Review and approval of solid waste ordinances for counties and cities.

Review and approval, or conditional approval, of solid waste permit applications submitted to the Minnesota Pollution Control Agency (MPCA) for proposed facilities in the Metropolitan Area.

Review and approval of long-term (over five years) public-entity contracts for solid waste supply and processing.

Coordination of development of regional programs for sharing use of facilities, providing solid waste public education, and expanding secondary materials markets.

Interpretation of solid waste issues affecting the Metropolitan Area for reports to the legislature, the MPCA and the Office of Waste Management (OWM).

Direction and evaluation of expenditures from the Metropolitan Landfill Abatement Fund Account.

The plan reflects the Council's position on the most environmentally sound and cost-effective methods for managing solid waste. It will be used by metropolitan counties, municipalities and townships, the MPCA and the OWM as they carry out their assigned solid waste management responsibilities.

# SUMMARY

The seven-county Metropolitan Area has already made substantial progress in improving the way it deals with its solid waste. But more needs to be done to protect the environment and recapture usable resources. The *Solid Waste Development Guide/Policy Plan* is the Metropolitan Council's plan for improving the way the region manages its solid waste to the year 2010.

- It puts greater responsibility on waste generators to recycle and reduce the amount of waste they produce in the first place. The plan calls for expanding recycling-collection service and establishing trash-collection fees based on the weight or volume of waste produced.

- It strengthens economic incentives to process waste rather than dispose of it in landfills. It proposes to increase landfill fees to reflect all the costs of using landfills, including costs of managing them after they are closed.

- It calls for the metropolitan counties (which are primarily responsible for carrying out the regional solid waste plan) to cooperatively provide for the development and operation of waste facilities as one regional system so that all solid waste is handled in the most appropriate and cost-effective way.

- It calls for counties to plan for the management of all the solid wastes produced in the region (except industrial hazardous wastes), including wastes like hazardous household chemicals and debris from building demolitions.

- It says that toxic materials should be removed from the waste "stream" and managed separately from waste that is incinerated or processed in other ways.

- It sets a high recycling goal of 50 percent by the year 2000, thereby providing more balance between recycling and waste processing.

- It strives to reduce the region's dependence on landfills to a minimum. However, it says some landfill capacity will be needed to handle the percentage of waste that can't be processed or recycled in the future, as well as the rejects, residuals and ash from recycling and resource recovery facilities.

- It shows a preference among waste management methods. Ranked first is waste reduction (keeping materials from getting into the waste stream in the first place); second, materials recovery (recycling); third, composting yard wastes and food wastes; fourth, resource recovery (including RDF processing, mass burning or solid waste composting); and last, landfilling or land disposal.

# GOALS, ISSUES, POLICIES

The seven-county region produces nearly 4 million tons of solid waste annually. (Solid waste includes the nonhazardous waste produced by homes and businesses, plus household hazardous waste like paints and cleaning chemicals. It also includes waste like rubble from demolished buildings, industrial slag, coal ash and junked cars.)

Solid waste generation in the region is estimated to have grown more than twice as fast as the population in recent years. Between 1990 and 2010, the region is expected to produce 40 percent more than it does now, in part because the region's population and number of jobs are increasing.

Dealing with the growing mass of waste has to begin with reducing the amount entering the waste stream. An environmental protection fee should be added to tipping fees at all landfills in the state to pay for all the costs of land disposal and for efforts to remove toxic materials from the waste stream. Such a fee would also encourage waste generators to cut the amount of waste they produce and encourage haulers to deliver wastes to processing facilities instead of landfills.

In addition to a growing volume of waste, few controls currently exist for managing hazardous waste produced by households, like cleaning chemicals or paint solvents. These wastes can contaminate landfills. As an incentive to substitute less toxic or nontoxic household products, a tax or fee should be placed on hazardous materials. The revenues should be used to help deal with household hazardous wastes properly.

Even though the quantity of solid waste can't be reduced to zero, the amount ultimately disposed of can be kept to a minimum. Cities and counties should ensure, through ordinances or other measures, that each household or business has a waste-collection service. (The 1991 legislature required that cities and towns with populations over 5,000 ensure the provision of this service. [Minn. Stat., sec. 115A.941, subd. 47]) The purpose is to thwart a growing trend of illegal dumping by people who want to avoid paying for waste-collection services. Also, cities and counties should make sure that generators pay for such service according to the amount of waste they produce--higher cost for more waste, lower cost for less.

If the region expects to greatly increase the collection of recyclable materials, it may have to develop additional ways of dealing with "commingled" materials. Commingled materials--for example, glass and metal--are collected in the same container for recycling. Ordinarily people have to sort recyclable material--whether glass, metal or newspaper--before it's processed into new glass, metal or newsprint.

If different materials didn't have to be sorted from one another, more people might recycle, boosting the amount of material that's recovered. Also, to reach higher recycling goals, several other materials are expected to be added to the recycling stream and there are practical limits on how much sorting people can do. That makes it even more important for the system to deal with commingled materials.

Reducing the amount of waste ultimately disposed of requires reusing waste materials as much as possible, and recycling is a key factor. Cities and counties should expand programs for collecting recyclable materials to include generators who do not have such service. Expanding markets for

recycled materials is necessary for recycling to work. The task of creating incentives and reducing barriers to using these materials rests with the states and the federal government.

The Council intends to support market-development efforts to identify and expand markets for recyclable and recycled materials. The Council will also consider recycled content and recyclability when it purchases materials, and work to ensure that other metropolitan agencies and the counties carry out similar procedures.

Under current law, a load of waste generated in a county is directed to facilities designated by that county for processing, even though it might better be processed at a different kind of facility. Cooperative arrangements among all facilities would enable a higher percentage of waste to be processed, further reducing the amount of waste deposited in landfills. Recognizing this possibility, the counties have already begun to work together to ensure that waste is processed to the greatest extent possible, while making sure that facilities receive enough waste to sustain them economically. These efforts should continue.

Even if the region achieves its highest expected levels of waste reduction and processing, including recycling, it will continue to need landfills. The 1991 Minnesota Legislature suspended the process, under way since the 1980s, for siting new landfills in the region. However, it required a new process to site two new landfills--one for incinerator ash and another for mixed municipal waste. This new siting process must be developed by the end of 1991. To supplement landfill capacity in the region, the metropolitan counties could establish long-term contracts with landfills outside the region that meet state standards for design, construction and operation of new landfills.

Waste management facilities should be developed and operated as an integrated regional system. The seven metropolitan counties have recently established a regionwide administrative organization to coordinate their waste management activities. They should also prepare and carry out a joint operations plan as part of their efforts.

Waste generators should pay for the costs of waste management. Implementors of the regional waste management system recognize their responsibility to make sure that the money spent provides the most benefit. Waste management costs have rapidly increased in recent years: the amount paid by households more than doubled between 1985 and 1990. And the region will experience significant cost increases in the next decade because of new solid waste facilities being built.

The region should invest in the solid waste management system wisely and make the most efficient use of solid waste facilities that are built. For the region, that means a diversified system that matches the appropriate technology and capacity to each type of waste. It requires building and operating a number of facilities using different technologies, such as composting, recycling and energy recovery. And it means that counties should share the available capacity of their solid waste facilities to prevent waste from going to landfills unnecessarily.

If waste facilities are developed and operated as a single regional system, the burden of financing their operations may also have to be borne regionwide, instead of solely by a single county or group of counties. The Council will work with the metro counties to determine how costs and financial liabilities should be managed.

# SYSTEM PLAN

All the region's waste cannot be managed by a single technology. The system will need to use a variety of methods best suited to dealing with different kinds of waste--recycling, incineration, refused-derived fuel production, composting, landfilling or possibly other technologies that may be developed in the future. The system plan is a description of what the region's waste management system could include in order to ensure that the Council's and legislature's waste management goals are met. It is not prescriptive. Other configurations that would provide for identified capacity needs are also possible.

Since no one county or owner/operator can provide facilities for all these methods, waste facilities of individual counties should be shared so they can operate as one system rather than as several smaller, separate systems. That will help ensure that facilities operate efficiently and that each kind of waste is recycled, processed and disposed of in the most environmentally appropriate and cost-effective way.

The guide contains policies and text promoting waste reduction in the region. In addition, it says that 35 percent of the region's waste stream should be recycled by 1993, 45 percent by 1996 and 50 percent by the year 2000. Achieving these goals will provide more balance between waste processing and recycling.

The Council will encourage development of waste incineration and refuse-derived fuel facilities currently planned, but not approve additional incineration or RDF facilities before 1995. The Council and the counties will use the time to evaluate the role of these facilities.

Under state law, the counties are required to plan for managing household hazardous wastes. They are also dealing with "problem" wastes that can disrupt composting or incineration processes.

The guide specifies limits on how much waste can go to mixed-waste landfills. By the year 2000, the amount would drop nearly 70 percent from 1990 levels, then edge upward to the year 2010.

A comprehensive network of facilities is needed to effectively manage the region's solid waste to recover marketable materials and energy from it. It will become increasingly important to make sure that management of the region's waste stream is coordinated so materials are recovered and not landfilled.

The system plan outlines a proposed schedule for developing facilities so that 100 percent of mixed solid waste and special waste will be processed to recover materials or energy by the year 2000. The facilities the Council has proposed for development between 1990 and 2000 are:

- Two facilities to compost mixed solid waste;
- One facility to compost rejects from refuse-derived fuel plants and other residual materials;
- One (currently planned) facility for incinerating waste; and
- One or more landfills with capacity totaling 8,726 acre-feet on line by 1994, and an additional large one by 2000 (this schedule may be canceled if the metro counties agree on siting one mixed-waste landfill and one for ash).

By the year 2000, 50 percent of the managed waste stream will be processed to recover recyclable materials; 10 percent of mixed solid waste will be composted; more than a third will be burned; and only about 20 percent will be landfilled. (This totals more than 100 percent due to dual management requirements for some portions of the waste stream, such as wastes which are incinerated creating tons of ash which require additional management.)

The capital cost of the region's major waste-management facilities is estimated to be about $595 million between 1986 and 2000. This figure doesn't include the cost of upgrading or expanding existing facilities or the cost of numerous smaller, local facilities.

Debt service for these facilities will be more than $1.6 billion between 1986 and 2020. Annual debt-service costs were about $16.45 million in 1988, and are expected to rise to about $28.8 million by 1992 and peak at about $81.5 million by 2001.

# GOALS, ISSUES, POLICIES

## INTRODUCTION

Planning for and controlling solid waste generation, collection, processing and disposal in Minnesota are the responsibilities of counties, municipalities, regional governments and state agencies. These public entities have various responsibilities and statutory authorities largely under the state Waste Management Act. In the Metropolitan Area the Council, counties and cities have shared responsibilities for implementing a system for waste management that is governed by the Metropolitan Council through its solid waste policy plan.

Municipalities, townships and counties are responsible for regulating the collection and transportation of solid waste and certain aspects of processing and disposal facility location and operation. Counties are directed to prepare master plans that describe and govern existing and proposed solid waste activities, functions and facilities within the county and its municipalities (Minn. Stat., sec. 473.803). These master plans are required to be consistent with the Council's solid waste policy plan. Municipalities and counties are authorized to own and operate solid waste disposal facilities, and have various powers with respect to financing such facilities and executing contracts involving ownership and operation.

The Council will implement this policy plan in several ways including:

1. Reviewing county solid waste plans and reports;

2. Reviewing waste facility projects and proposals;

3. Monitoring and overseeing county activities;

4. Providing technical and financial assistance; and

5. Advising the MPCA, the Office of Waste Management and the Legislative Commission on Waste Management on issues affecting solid waste management in the region and state.

The Council believes that planning for solid waste management in the Twin Cities region must incorporate certain basic principles that address the philosophy and goals already adopted in the *Metropolitan Development and Investment Framework* and in other existing policy plans. In developing the goals and policies contained in this section the Council was guided by the considerations that follow.

Regional solid waste management must:

1. Protect the environment;

2. Promote cost-effective solutions;

3. Coordinate the system to:
   a. Minimize negative impacts on existing land uses,
   b. Protect metropolitan systems, and
   c. Recognize different urban and rural service needs; and

4. Achieve equity in allocating waste management costs and responsibilities among product manufacturers, distributors and consumers.

In order to protect the environment, the system should protect public health and safety and detoxify the waste stream to minimize degradation of the environment. To accomplish this, the state and the region should focus resources on detoxifying the waste stream throughout the system.

Solutions to the solid waste problem should be efficient in terms of dollars spent for effective waste management and should result in an integrated, cohesive metropolitan system addressing all regional solid waste needs. The economics of the system should be apparent to the waste generator so that the costs of each waste management option can be understood. Costs for landfilling wastes should reflect the value of the resources lost.

The siting of waste facilities should minimize the impact on existing land uses and not adversely affect other metropolitan systems. Waste management programs and facility locations should also recognize the greater service needs within the urbanizing area.

Metropolitan Council policy, including both legislative recommendations and requirements for implementing agencies, is based on the concept of a fair and balanced sharing of the responsibilities. This will require greater effort and financial involvement by product manufacturers, producers of consumer packaging, and consumers to reduce and recycle waste.

# WASTE MANAGEMENT HIERARCHY

In developing solid waste management solutions, the Council will, to the extent practicable, give preference to sustainable waste materials management programs in the following rank order:

1. Waste Reduction and Reuse

2. Materials Recovery
   Including source and mechanical separation of recyclables.

3. Yard Waste and Food Waste Composting

4. Resource Recovery
   Including refuse-derived fuel (RDF), MSW mass burn for energy production, or solid waste composting.

5. Landfilling
   Separate mixed municipal solid waste (MSW) and ash landfills; industrial and demolition/construction landfills.

The Council will consider this hierarchy as it reviews county solid waste plans, landfill abatement projects and landfill siting/expansion requests; administers abatement grants; and carries out all other solid waste management responsibilities as required by state and federal law.

In implementing this hierarchy, the Council recognizes that, although disposal of waste in landfills is the least desirable solution, land disposal will continue to be an essential waste management technique.

Since protection of the environment is a paramount concern, in implementing programs based on this hierarchy the counties will be required to consider the removal and/or treatment of problem materials from the waste stream at every opportunity. Problem materials consist of material that is difficult to dispose of due either to the effect it has on the operation of various types of processing equipment (mechanically difficult to manage), or to the toxic environmental problems it causes when burned or buried (the release of a hazardous substance, pollutant or contaminant). These wastes would include nonhazardous industrial wastes and household hazardous waste.

All waste cannot be managed by a single technology. Rather, waste management will require a system offering recycling, incineration, RDF production, MSW composting, landfilling, and possibly additional technologies that may be developed in the future. Since no county can plan to have facilities providing all of these present and potential future alternatives, nor is each county required to have its own landfill, facilities must be shared in order for the region to achieve

maximum landfill abatement. In keeping with current legislation, unprocessed or non-processible waste will be transferred to a landfill only after a county has certified that the waste cannot be handled by any facility located within the county and that no other agency-permitted facility in the region has sufficient capacity or ability to handle the waste. This legislative directive clearly requires the sharing of solid waste facilities. As this shared and integrated system is implemented, the Council will expect to see a progressively greater proportion of material removed from the waste stream by methods in the upper levels of the hierarchy.

Each of the following Metropolitan Council goals includes a discussion of the current status, issues and policies related to the goal, and a statement of how the Council intends to apply each policy.

# WASTE GENERATION

## CURRENT STATUS

Preliminary estimates indicate that the Metropolitan Area generated an estimated 3,555,000 tons of solid waste in 1990. The policy plan establishes policy for the management of this total solid waste stream. In contrast, the 1985 *Solid Waste Management Development Guide/Policy Plan* focused on the mixed municipal solid waste (MSW) portion of the total waste stream. The legal authority of the counties to implement designation and other waste management controls is limited to MSW. The residuals from processing, separately managed commercial and industrial wastes, and construction and demolition debris are specifically excluded from the definition of MSW. This emphasis on MSW management has resulted in significant progress in the effective management of MSW, but non-MSW wastes are also filling landfills. More efforts must be directed at abating these wastes as well.

The consumption of landfill space showed a slight drop between 1988 and 1989. During the period since the preparation of the 1985 plan, the mixed solid waste portion of the total solid waste stream has grown from an estimated 2,290,000 tons per year in 1985 to an estimate for 1990 generation of 2,756,000 tons. This increase in waste generation is equal to approximately 20 percent. The region has seen similar increases in the generation of other types of solid wastes.

Figure 1
FORECAST OF TOTAL SOLID WASTE GENERATION
1990-2010

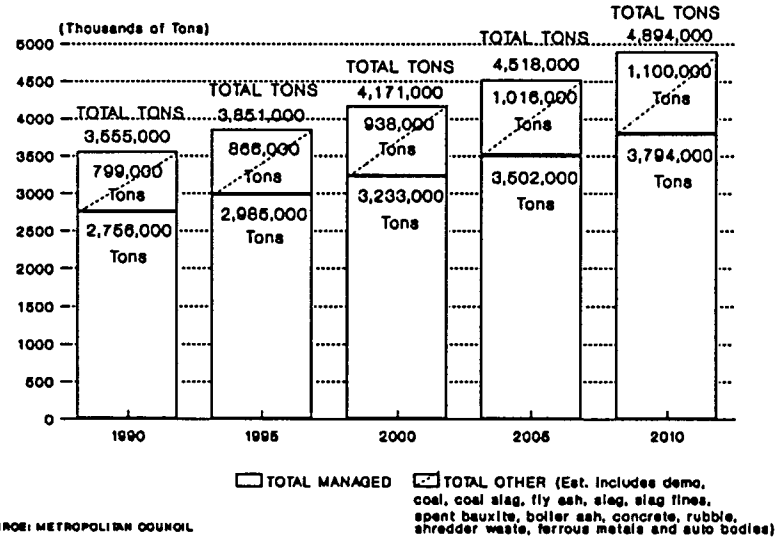



Figure 1 shows the projected increase in total solid waste generation in five-year increments from 1990 to 2010. It should be noted that the waste is projected to increase another 40 percent in the

next 20 years. That would mean that the region will need to plan for the management of an additional 1.3 million tons of waste per year in 2010 unless some action is taken to reduce the amount of waste that will be generated.

During that same period, the population of the region is projected to increase by only 15 percent and employment by 26 percent.

## ISSUES

### Wastes Managed

For management purposes, three classes of wastes can be identified in the region: mixed municipal solid waste (MSW); special wastes; and all other solid waste. The authority to manage each of these waste classifications varies. The counties can plan and develop facilities for MSW and, more important, direct its flow to a particular waste processing facility. The 1985 policy plan and related county solid waste master plans addressed MSW almost exclusively. Other solid wastes were not included in the 1985 policy plan and the corresponding county solid waste master plans, but are addressed in this plan.

The volume of non-MSW solid waste is a substantial portion of the total solid waste stream. When landfills for non-MSW wastes, such as industrial and construction wastes, reach capacity or encounter problems that result in closure, that waste has been disposed of in a land disposal facility along with the MSW for which these land disposal facilities are primarily planned. The gains made in reducing the landfilling of MSW could be negated by an increase in the disposal of other wastes in land disposal facilities.

The preservation of landfill capacity in the Metropolitan Area will depend on the management of all solid wastes according to the same criteria as MSW. The Council's policies, where appropriate, must address MSW, special wastes and all other solid waste. Currently the counties do not have the authority to manage all solid wastes, but legislation requires them to plan for the management of all solid wastes.

The industrial hazardous waste portion of the solid waste stream is managed through specific state and federal programs. This policy plan does not propose any changes in the industrial hazardous waste management system. However, consistent with state legislation, it does require that counties plan for household hazardous waste management.

### Per Capita Waste Generation

In recent years, the population in the Metropolitan Area has increased an average of approximately one percent per year. At the same time, the waste stream has grown at an annual average rate of 2.35 percent per year. This increase, while due in part to population growth, has also been influenced by growth in waste generated by increased commercial and industrial development. The generation of work related waste is expected to outpace the generation of waste due to population growth in the future.

Thus, while currently about half of the waste is generated by residential generators and half by the commercial and industrial sector, in the future the relative share of waste generated by the commercial and industrial sector is expected to increase.

It is projected that the continued growth of employment and population in the region will result in annual waste generation in 2010 that is twice that generated in 1980. The waste management system will need to manage both the increasing volume of waste and shifts in waste composition. One key aspect of this management evolution must be increased emphasis on achieving waste reduction. Waste reduction is the first element in the hierarchy for managing waste in the region, yet none of the policies in the 1985 policy plan targeted specific changes in the regional solid waste management system that would promote waste reduction. The current plan has identified measures to promote waste reduction, including volume- or weight-based fees and increased landfill tipping fees.

The increasing costs of waste management appear to be effective in reducing waste generation by the commercial and industrial sector. Thus, the commercial/industrial waste stream is not projected to increase at the same rate as growth in employment. Waste management costs are also beginning to impact institutions such as schools and medical facilities. Yet, little impact has been observed on residential waste generation. Projections of waste generation, which reflect current reduction efforts, indicate that much more effort will be required to have a significant impact on waste generation rates.

## Toxicity Management

The effective management of solid waste in the region also includes the reduction of the toxicity of the waste stream. The current waste management system does little to address the toxicity of materials disposed of by generators. While industrial hazardous waste management programs implemented by the counties in the Metropolitan Area have been very effective in preventing improper disposal of industrial hazardous materials, no such controls exist for residential generators or for materials in MSW that may pose an environmental threat if disposed of improperly. Environmental contamination emanating from landfills has forced their closure, reducing regional capacity and adding significantly to the cost of waste management in the region.

Goal 1

THE TOXICITY AND QUANTITY OF WASTE GENERATED MUST BE SIGNIFICANTLY REDUCED THROUGH INFLUENCING GENERATORS TO PRODUCE LESS WASTE AND SUBSTITUTE LESS TOXIC OR NONTOXIC PRODUCTS FOR TOXIC ONES.

Policies

1A. AN ENVIRONMENTAL PROTECTION FEE SHOULD BE ADDED TO TIPPING FEES AT ALL LAND DISPOSAL FACILITIES IN THE STATE. FUNDS ACCUMULATED FROM THE FEE SHOULD PAY FOR ALL ENVIRONMENTAL PROTECTION COSTS, INCLUDING THE REMOVAL OF TOXICS FROM THE WASTE STREAM, AND ENCOURAGE GENERATORS TO PARTICIPATE IN FURTHER WASTE REDUCTION EFFORTS.

1B. A TAX OR FEE SHOULD BE ASSESSED ON A LIST OF MATERIALS DETERMINED BY THE MINNESOTA POLLUTION CONTROL AGENCY TO CAUSE A NEGATIVE ENVIRONMENTAL IMPACT. MONIES ACCUMULATED SHOULD BE PLACED IN A DEDICATED FUND USED TO REDUCE THE TOXICITY OF THE WASTE STREAM.

1C. THE PRIMARY MESSAGES OF PUBLIC EDUCATION AND INFORMATION PROGRAMS SHOULD INCLUDE WASTE REDUCTION AND TOXICITY REDUCTION IN ADDITION TO RECYCLING.

In order to ensure that adequate funds are available for the proper long-term care of landfills, the Council will promote the establishment of a consistently applied environmental protection fee to be added to tipping fees at all disposal facilities in the state. Currently, the state lacks adequate funding to properly monitor, maintain and remediate landfills in Minnesota. Proper care beyond the 20-year post-closure period is of particular concern. The environmental protection fee would be set by the MPCA in cooperation with the Council, the Office of Waste Management and the Legislative Commission on Waste Management based on projections of future costs. The monies raised would be set aside to ensure that appropriate management occurs. Portions of the fund could be used for toxic management and public information programs. The fee would be assessed on all wastes disposed of at every solid waste land disposal facility in the state that accepts MSW. Consideration should also be given to setting fees for construction/demolition and ash landfills based on anticipated environmental impacts and costs.

This increased cost for landfilling waste will provide an economic incentive that supports the waste management hierarchy by encouraging waste reduction, recycling, composting and resource recovery while making landfilling the most expensive, and thus least preferred, alternative.

To encourage a reduction in the toxicity of the waste stream, the Council will seek a fee on a list of materials identified as causing a negative environmental impact. The fee would be charged at the point of most feasible collection. Options include a fee assessed at the point of purchase or a tax sticker purchased by the manufacturer or distributor similar to the stickers applied to cigarettes. The fee would be charged statewide. Monies raised by the fee would be placed in a dedicated fund to pay for efforts to reduce waste stream toxicity such as public information programs and household hazardous waste collections. Such a fee would make nonhazardous products more competitive and encourage product substitutions.

## COUNCIL APPLICATION OF POLICIES

Both the proposed increase in the landfill surcharge and a problem-materials tax will require action beyond the regional level. These policies will be considered as the Council develops concepts for future legislation.

In addition, the Council will continue to support public education efforts that promote waste reduction and appropriate household hazardous waste and problem-materials management.

As part of its reporting requirements to the Legislative Commission on Waste Management, the Council will continue to monitor receiving rates at landfills and resource recovery facilities to record any reductions in tonnages of waste delivered. Results of the region's household hazardous waste management programs will also be noted.

# WASTE COLLECTION

## CURRENT STATUS

Most MSW waste in the region is collected by a collection service. The majority of collection services are provided by private companies competing with one another for clients. Several cities have organized collection. Under organized collection a hauler or group of haulers bids for service areas within a city or negotiates with a city to provide service to a specified population. There is also some municipal collection in the region, with the cities of Minneapolis and Farmington providing this service. Most commercial and industrial waste is collected by private companies or hauled by the generator.

The provision of specialized collection services has developed and expanded since 1985. Currently most residents are provided with recycling and yard waste collection services. Appliance collection is provided to the generator upon request, generally for a fee. Other services being considered are: household hazardous waste management; tire, battery, and used oil management; tree waste management; and food waste management.

Many of the new services are being adapted to suit the changing requirements of the waste management system and the needs of generators. Due, at least in part, to the provision of this increased variety of services, the cost of collection has increased sharply. Other factors influencing collection fees include rising tipping fees at waste processing facilities and the implementation of a tax on collection and disposal charges. (Cost and finance issues are addressed in the "Finance" section of the policy plan.)

An informal Council survey of the region's haulers indicates that approximately half of them assess fees based on volume or weight in an effort to assess costs to waste generators equitably. This has become very popular for cities with organized collection. It is also common for haulers or cities to offer rebates in fees to generators who recycle some portion of their waste. However, despite these movements toward greater generator responsibility for the cost of waste management, many haulers continue to collect whatever is set out for a fixed fee regardless of the volume or weight of materials collected.

## ISSUES

### Illegal Dumping

As the cost of collection has increased, some residents and business have responded by reducing the amount of waste generated and recycling more material. However, an increasing number of generators are dropping collection services and relying instead on carrying waste to commercial dumpsters, or worse, dumping the waste illegally on the side of roads or in parks and vacant lots. This problem is especially acute for large, seldom-disposed-of materials such as appliances, tires, mattresses, and carpeting. Some counties have noted a sharp increase in the disposal of waste along roadsides and in parks and vacant lots. Newspaper articles and recycling managers have discussed the problem. In response, many communities plan periodic community cleanup days, assuming responsibility for such inappropriately managed wastes.

## Recycling Participation

Another concern is the overall participation rate for recycling among commercial, industrial, institutional, and residential generators. The success of different programs varies. Some factors that help to encourage recycling participation by residential generators are: provision of bins; weekly collection; same-day collection as waste; and haulers' promotion of recycling services in conjunction with waste collection programs. Another factor influencing recycling participation is the amount of neighbors' participation in programs. Residents are much more likely to recycle if it is the norm in an area.

An analysis of several annual surveys conducted by the Center for Urban and Regional Affairs indicates that many residents believe that recycling is an important activity. Yet the current recovery of recyclable residential wastes is low relative to the potential recovery of recyclable materials. More residents must be encouraged to participate and participants must recycle an increasing volume and number of materials. To ensure that residents view recycling as a critical component of the waste management system, the value and cost of the service should be clear.

## Commingled Collection

Recyclable materials need to be collected and managed in a manner that will allow for the economic reuse of the resources they embody. Collection and management may take a variety of forms, but, as pressure to recycle more materials from the waste stream grows, it is likely that some form of commingled recyclables collection will become necessary. The region should have capacity to process commingled recyclables as it begins to collect recyclable materials in aggregate. Capacity may be developed by the private sector or the public sector. The provision of this capacity is discussed in the facility development schedule.

Some haulers have collected loads of materials in a manner that causes the wastes to be declared unprocessible at resource recovery facilities. For example, bulky, stringy, or very wet materials are difficult to process in refuse-derived fuel facilities. However, bulky and stringy materials can be burned in a mass-burn facility and wet materials can be composted. The collection and management of materials in a manner that allows maximum processing and recovery of resources are necessary. An environmental protection fee that increases the costs of landfilling (Policy 1A) would encourage collection of wastes in a manner that would offer a financial incentive to haulers to use processing facilities rather than avoid them.

## Marketing

The viability of recycling as a waste management strategy depends upon the availability of markets to purchase secondary materials. Most market development efforts at the regional and state level have focused on increasing materials supply rather than on creating demand. Increasing supplies of recyclable materials through growing numbers of recycling programs will be counterproductive without more aggressive efforts to build and expand demand for these materials. The current status of secondary materials markets varies by material. Markets for aluminum, glass, newsprint, corrugated and high-grade paper are well established and the demand outlook for these categories of materials appears positive. Markets for other materials, such as post-consumer plastics and

compost, are weak and fragmented due in large part to the lack of uniform specifications for these materials in commercial applications and to the lack of reliable collection methods. State, multistate or federal initiatives will be needed to develop the incentives necessary to stimulate demand for secondary materials and remove legal and regulatory barriers to widespread use of these materials. One of the most effective ways to increase demand is for government agencies to use their substantial purchasing power to procure products that are recyclable and incorporate recycled materials.

Goal 2

ALL SOLID WASTE GENERATED IN THE METROPOLITAN AREA SHOULD BE COLLECTED AND MARKETED IN A MANNER THAT PROVIDES THE GREATEST POSSIBLE REUSE AND RECYCLING OF THE MATERIALS.

Policies

2A. THE AUTHORITY RESPONSIBLE FOR THE MANAGEMENT OF WASTE COLLECTION SHOULD:
ENSURE THAT EACH WASTE GENERATOR HAS A WASTE COLLECTION SERVICE;
ENSURE THAT VOLUME- OR WEIGHT-BASED FEES ARE ESTABLISHED FOR EACH WASTE GENERATOR; AND
ENCOURAGE MAXIMUM RECYCLING PARTICIPATION AND RECOVERY RATES BY ENSURING THAT ALL GENERATORS HAVE RECYCLABLES-COLLECTION SERVICE AVAILABLE.

2B. MARKETING EFFORTS SHOULD CONCENTRATE ON IDENTIFYING AND EXPANDING END MARKETS TO PURCHASE RECYCLABLE AND RECYCLED MATERIALS.

Making generators aware of the fees they are paying for various services will establish for the generators the need for and value of those services. The Council believes that all generators should pay for waste service and all generators, including apartment dwellers, should benefit from recycling incentives offered by municipalities. Requiring each generator to have a waste collection service (a requirement made law by the 1991 legislature) is one tool to ensure that appropriate waste management occurs and that incidents of illegal dumping are reduced. A requirement for waste collection service could be satisfied in a variety of ways, including joining with others to contract for service, or providing verification that waste is self-hauled to an appropriate facility.

The implementation of volume- or weight-based fees will reinforce the need to reduce wastes and participate in recycling programs, provided that sufficient collection fee increments exist. For example, the provision of unlimited service for a set fee should be discouraged.

The provision of recycling services to segments of the generator community currently not served would be most readily implemented through a requirement that all haulers for unserved generators, such as residents of multifamily dwellings, provide the recycling collection service.

## COUNCIL APPLICATION OF POLICIES

Council review of county master plan revisions and other policy documents will provide an opportunity to assess the plans' timeframes for the provision of recycling services for all generators and the establishment of volume- or weight-based fees. Council staff will provide technical assistance to ensure consistency with the regional system plan. In addition, the Council will consider these policies when providing abatement fund grants.

If, by 1993, providing the opportunity to recycle to all generators and the enhancement of existing programs is not sufficient to achieve the Council's overall landfill abatement objectives as contained in the system plan, legislation mandating participation may be necessary. The Council would work closely with the counties and the LCWM to develop appropriate legislation.

The Council will participate with state agencies, local governments and private industry to develop strategies and financial incentives to increase the demand for recyclable and recycled materials. Efforts to encourage the development of state and local markets must occur with the awareness of national and international market conditions. The Council will work jointly with the Office of Waste Management to maintain and distribute current data on supply/demand characteristics on the major categories of recyclable materials. Council grant programs and public information programs will continue to encourage market development as well.

In addition, the Council will expand its current recycling efforts by implementing procurement procedures that comply with Minnesota Statute 16B.122, Subd. 2 prescribing the purchase of recycled materials.

# WASTE PROCESSING AND DISPOSAL

## CURRENT STATUS

### Waste Processing

The solid waste produced by the region includes mixed municipal solid waste, special wastes, construction and demolition waste, non-hazardous industrial waste and hazardous waste. With the exception of hazardous wastes which are managed under separate and specific state and federal programs, the counties are required by state law to plan for the management of all solid waste generated. However, under state law only mixed municipal solid waste (MSW) can be designated (required to go) to resource recovery facilities for processing. Although much of the waste that does not fit the definition of MSW may potentially be processible, counties are only required to develop processing capacity for mixed municipal solid waste and are not currently required to manage other solid waste, much of which is consuming landfill capacity. Private facilities have been developed to process or otherwise manage some non-MSW wastes.

Private firms continue to evaluate how to recycle or process various components of the solid waste stream and are considering development of facilities to manage specific solid waste components. While the counties are not legally required to develop programs or facilities to manage non-MSW solid wastes, they are required to plan for the management of all solid waste. The counties' current master plans, consistent with the Council's 1985 policy plan, do not include management plans for non-MSW solid wastes.

In 1985 only one 80-ton-per-day mixed municipal solid waste processing facility was operating in the region. In 1990 the region had five operating resource recovery facilities capable of processing a total of 3,855 tons of waste per day. These facilities are designed to manage different portions of the mixed municipal waste stream. They cannot process wastes that are too wet or otherwise too difficult to process. They were not designed to process non-MSW portions of the waste stream.

Based on the 1985 policy plan directives, the region has developed or planned for future development a number of different types of centralized processing facilities. Existing facilities and their average daily throughput capacity in tons per day (TPD) include: the Hennepin County mass-burn facility (1,000 TPD), the Ramsey and Washington County refuse-derived fuel (RDF) facility (1,000 TPD), the NSP Elk River RDF facility (1,300 TPD), the Reuter densified-RDF facility (475 TPD) and the Richards Asphalt modular mass-burn facility (80 TPD). Planned facilities include the Dakota County mass-burn facility (640 TPD), the Carver and Scott Counties MSW composting facility (200 TPD), a Reuter MSW composting facility (300 TPD) and a RECOMP food-waste composting facility (400 TPD). A map of these facilities can be found on page 53. The proposed Reuter composting facility will be linked to the company's RDF facility. It will further process materials sent to it from the RDF facility.

By 1995, if all of these facilities are operating as planned, the region will have a total processing capacity of approximately 5,400 TPD. The capacity could manage about 55 percent of the

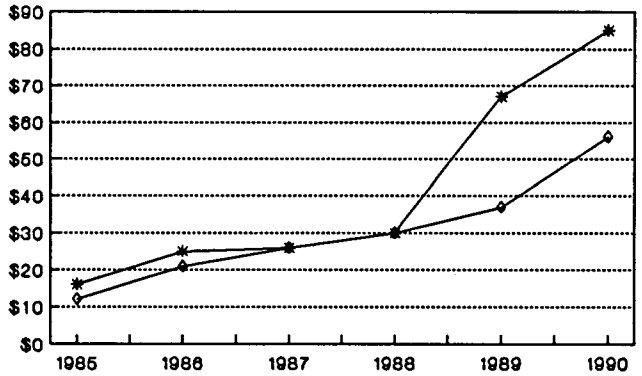
region's mixed MSW. Of that, about 39 percent would represent actual conversion of waste to fuel. These percentages are lower when taking into account the entire solid waste stream.

Mixed municipal solid waste that cannot be processed in a county's waste processing facility is generally taken to a landfill. In addition, rejects and residuals resulting from the processing of waste are delivered to landfills. In either case a significant portion of the waste stream is landfilled. In addition, wastes that do not meet the legislative or contractual definition of mixed municipal solid waste are hauled directly to a landfill regardless of whether they could be processed at an MSW processing facility.

Currently two regional facilities are shared by more than one county. They are: the Newport facility shared by Ramsey and Washington Counties; and, the Elk River facility shared by Hennepin, Anoka and three non-Metropolitan Area counties. An executive at Newport and a joint operations committee at Elk River manage much of the day-to-day operations of the facilities. Most of the decisions requiring policy-setting must be approved by a majority of the county boards whose counties share the facility.

The implementation of "designation," discussed more fully on page 24, appears to work under the cooperative arrangements. The use of designation to get waste to facilities helps to ensure that sufficient waste is processed to significantly abate the use of landfills.

Figure 2
AVERAGE YEARLY TIP FEES
AT METRO AREA LANDFILLS AND FACILITIES




NOTE: The tipping fee at some processing facilities includes other solid wastes expenses, such as recycling.

SOURCE: METROPOLITAN COUNCIL

During the period between 1985 and 1990, the cost of waste disposal has increased sharply. Figure 2 shows the average charge per ton for delivering waste to landfills and processing facilities between 1985 and 1990.

The increases have had a significant impact on the development of facilities to recover recyclables from mixed wastes prior to transporting those wastes to resource recovery facilities. The tipping fees at processing facilities often include other solid waste expenses such as recycling and/or transfer costs.

From 1987 to 1990, all of the privately owned and operated transfer stations in the region have shifted their focus from transporting wastes to maximizing recovery of recyclable materials from the waste stream prior to taking waste to a resource recovery facility.

The recovery of various recyclable materials from collected waste at materials recovery facilities is a trend that will likely continue as haulers seek less-expensive waste management techniques. The more materials that can successfully be diverted from the collected waste before delivery to a designated resource recovery facility, the lower the tipping fee cost to the hauler for management of that waste.

Another type of materials recovery facility (MRF) accepts mixed recyclables. The MRF separates and processes recyclables for specific markets. Two MRF facilities are currently being built by private firms in the region. The trend nationally is toward mixed recyclables collection to improve the collection efficiency of recyclables, particularly plastics.

## Residuals Management

Materials that are processed in the region either at resource recovery facilities or MRF facilities leave a residue that must be managed. Currently the counties have begun arrangements for additional processing of residuals to further reduce the amount of waste being landfilled.

Various studies have been undertaken to assess the potential to reuse, recycle, or further process the residuals that are being landfilled. To date, the studies have indicated that the cost of processing the residuals is higher than the cost of landfilling them as waste.

Further complicating the problem of residual management is the fact that relatively small quantities of residuals are produced at each facility. The economics of residual processing favor the collection of the materials from similar facilities to be managed at one secondary resource recovery facility. The trend toward seeking alternate management techniques for residuals would be encouraged by Policy 1A, which makes land disposal a less attractive option by raising tipping fee costs.

Currently most residuals and rejects from regional processing facilities are being landfilled in the Metropolitan Area. The exceptions to this are residuals from the Reuter facility and the NSP Elk River facility which are transported to landfills outside the Metropolitan Area. Likewise, MSW waste from counties that have not enacted designation is often transported out of the Metropolitan Area due to lower tipping fees. In previous years this equaled about five percent of the MSW waste. Currently as much as 10 percent of the MSW waste stream is landfilled outside of the Metropolitan Area. This figure does not include incinerator ash tonnage, all of which is landfilled outside the region.

# ISSUES

## Waste Processing

Resource recovery facilities currently accept waste from within a defined designation area. All of the MSW waste within the designation area is required to go to the designated facility, even though a different type of technology might manage the waste more effectively. For example, some of the wastes sent to a mass-burn facility may be better processed in a RDF or composting facility. The current contracts for operation of facilities in the region require a specified amount of waste to be delivered to pay for the cost of facilities. The challenge is for the counties collectively to assure that each facility receives the contracted tonnage of waste while arranging for waste that cannot be processed at a particular facility to be sent to another processing facility in the region rather than directly to a landfill.

Because the resource recovery facilities have tipping fees higher than landfills, there is a tendency among waste collectors to avoid the county facilities by collecting waste from commercial and industrial generators as separate non-MSW waste streams. To the extent that the haulers recover materials for reuse from the waste stream, this is a positive trend. However, in some instances the wastes are collected separately simply to avoid designation or to have the wastes declared unprocessible so that they may be delivered to a landfill at a lower tipping fee. Clearly, costs impact these collection decisions and Policy 1A will help to address this problem by making the costs for landfilling more expensive than the cost for processing.

If, due to a shift in the levels of tipping fees, processing became a more attractive alternative for managing waste than landfilling, non-MSW wastes might be delivered to resource recovery facilities. The operating agencies are required to plan for the management of all the waste types that collectors might be delivering. This again suggests that the planning effort for the counties will require consideration of the management issues related to all of the waste generated in the county in order to maximize landfill abatement and protect the environment.

Management issues frequently arise for wastes that are produced in insufficient volumes for an individual county to deal with effectively. Options for appropriate management of such wastes include pooling the efforts of several counties to find common solutions and plan common public programs, or looking to the private sector for management services. While the goal is effective and efficient management of waste, regardless of whether the service is provided publicly or privately, the management of these specific components of the waste stream could provide an opportunity for the private sector involvement encouraged by the Waste Management Act. However, as in any instance of private sector involvement, the region must be assured that private facilities are achieving the waste management objectives stated in their facility permit applications. If a private operator does not appropriately manage a particular waste, it is the counties upon whom responsibility for its management will fall. The counties have already accepted this concept in the organization of a Solid Waste Management Coordinating Board. The movement toward joint action will need to increase if the counties are to succeed in planning for the management of all the solid waste generated in the region.

In its 1988-89 session, the legislature passed the "Restriction on Disposal" amendment to the Solid Waste Act, which was directed at increasing the amount of waste being processed at processing facilities to reduce landfilling. The law requires resource recovery facilities receiving waste from counties to certify waste loads that are unprocessible and for metropolitan counties to report semiannually to the Council on the status of waste processing. Counties must indicate the amount of waste that was not processed, why it was not processed, and the strategies being pursued to assure that all waste is processed prior to landfilling. The Council must review the reports and inform the legislature on solid waste processing progress. The Council may approve or disapprove county reports. If the Council does not approve three consecutive reports for a county, the Council has the authority to develop specific reduction techniques that are designed for the particular needs of the county. The county must implement these techniques by specific dates to be determined by the Council.

One issue that the counties have in common is land disposal capacity for wastes generated in each county. The long-held legislative solution for the potential land disposal problem involved requiring that selected counties develop landfill space for the region. This places a regional burden upon individual counties. Disposal is a regional problem that requires a regionally coordinated development program.

In the future, landfills will manage a decreasing portion of the solid waste management stream (and thus take in less revenue), even as the costs of building and operating such facilities rises. As this trend continues, the region must be aware of the needs of adjacent counties to ensure land disposal facility viability. To this end, specific regional landfill development plans must consider the potential financial effect on other Minnesota landfills and the potential need of those facilities to receive Metropolitan Area waste to remain economically viable.

Under an ideal system only those materials that were best managed by a particular facility would be delivered there. Currently, the use of facilities is solely dictated by where the waste was generated. The counties are finding that they cannot minimize the negative impacts of waste management or landfill use through the current implementation of designation within individual counties. Also, the individual counties cannot afford to build all the types of facilities they may need to effectively process waste. To manage all wastes effectively, the counties must depend on a mix of private facilities and publicly sponsored, shared facilities. Accordingly, the counties are working to develop agreements that will allow for improved cooperative waste management among counties and accommodate the development and operation of private facilities. Implementors must be encouraged to continue and sustain this progress toward minimizing the quantity of materials disposed of in landfills.

## Land Disposal

Increased efforts to reduce the amount of waste bypassed from facilities and the application of alternate methods to manage residuals will have a significant impact on the region's need for landfill capacity. If too little waste is disposed of in a lined landfill meeting current environmental standards for waste disposal, the facility will not receive sufficient revenue from tipping fees to pay its costs. It will experience financial difficulties and, if it defaults on its debts, may become a public burden. This is true in the state as a whole and is not simply a problem faced by the Metropolitan Area.

The disposal of Metropolitan Area waste is not exclusively a metropolitan problem. Decreasing dependence on landfills is a statewide policy. The older landfills that are contaminating groundwater will be closed and replaced by newer facilities with liners and leachate collection systems. According to a 1990 MPCA report, *Solid Waste Processing and Disposal: Capacity, Competition, Fees and Progress*, the state will only be able to support about a dozen or so of the newer, more environmentally sound landfills with liners and leachate collection systems. The region currently shares landfills with several surrounding counties, even though there is no formal recognition of this arrangement. The Council considers the potential impact of nonmetropolitan facilities on the metropolitan solid waste management system when it reviews proposed facilities. Conversely, the Council is aware of the potential impact of the metropolitan system on non-Metropolitan Area facilities.

Landfill space, which will continue to be needed, must be provided on time in order to maintain overall system coordination within the region. Recognizing this, the 1991 legislature enacted legislation that discontinues the current landfill siting process, replacing it with a new process to be developed by the counties in consultation with the Council and the Office of Waste Management. The counties must report to the Legislative Commission on Waste Management (LCWM) with a workable plan by Dec. 1, 1991. The process must describe how two facilities, one for ash and one for MSW, will be sited and developed in the Metropolitan Area. At the same time, the legislature banned the disposal of metropolitan waste in unlined landfills after Jan. 1, 1992. The Council will review the counties' report and provide comments to the LCWM. In addition, the Council will consider and approve the revised county solid waste master plans within the framework of this regional plan.

The lack of a deadline for county completion of the regional landfill siting process makes it impossible for the Council to assure that adequate solid waste landfill space will be available for the region throughout the 20-year planning period. The LCWM will not evaluate the counties' plan for siting needed landfill capacity until December, 1991. Capacity through a new siting process or a continuation of the 1980 candidate siting process is not likely to be developed by the mid-1990s when the Council's schedule says it will be needed.

Disposal of waste outside the Metropolitan Area is acceptable to the Council, provided that the landfills used meet legislative and MPCA requirements for environmental protection and the sites are located within a distance that makes the combined cost of disposal and transportation acceptable to the counties that are likely to use them. In evaluating the need for new waste processing or disposal capacity the Council will encourage utilization of excess capacities at existing facilities outside the Metropolitan Area when economically and environmentally feasible.

The Council is sensitive to concerns of potential host communities outside the Metropolitan Area that they not be exploited to accept unacceptable environmental risks or deplete disposal capacity that could appropriately be restricted to serve their local needs for longer time periods. The increasing dependence of the Metro Area on rural areas that have undeveloped space of suitable size for land disposal facilities will be balanced by the Metro Area's provision of more industrial services like metals reclamation from metal refiners and battery recovery operations. State-of-the-art landfills require substantial intake rates and fees to offset development and operating expenses. Thus, urban waste volumes may be essential to support cost-effective disposal businesses in non-urban areas. The inequitable application of fees should not be allowed because it

promotes waste exportation. The Council will support dedication of the state landfill surcharge to contingency action and grant abatement purposes throughout the state instead of just in the Metro Area. This would eliminate an economic incentive to export local waste to avoid the Metro surcharge.

Goal 3

SOLID WASTE RESOURCE RECOVERY AND DISPOSAL FACILITIES MUST OPERATE ECONOMICALLY AND EFFICIENTLY, MINIMIZING NEGATIVE ENVIRONMENTAL EFFECTS AND LANDFILL DISPOSAL; AND MAXIMIZING THE RECOVERY OF ENERGY AND RESOURCES FROM WASTE.

Policies

3A. WASTE MANAGEMENT FACILITIES AND PROGRAMS SHOULD ENSURE FLEXIBILITY, INNOVATION AND COMPETITIVENESS WHILE PROTECTING THE ENVIRONMENT.

3B. COUNTY MASTER PLANS MUST ADDRESS THE DEVELOPMENT OF JOINT WASTE PROCESSING AGREEMENTS AND COMMON PROGRAMS FOR ADDRESSING SOLID WASTE MANAGEMENT ISSUES.

3C. A FACILITY SITING PROCESS MUST BE ESTABLISHED THAT WILL ENSURE THE DEVELOPMENT OF NEEDED SOLID WASTE MANAGEMENT FACILITIES.

3D. THE METROPOLITAN COUNCIL WILL CONSIDER AVAILABLE CAPACITIES AT SOLID WASTE MANAGEMENT FACILITIES ACCESSIBLE TO THE REGION WHEN ESTIMATING THE NEED FOR THE SITING AND CONSTRUCTION OF NEW SOLID WASTE PROCESSING OR DISPOSAL FACILITIES WITHIN THE SEVEN-COUNTY METROPOLITAN REGION.

A regional approach to solid waste management will more effectively achieve landfill abatement by ensuring that a mix of technologies is available and efficiently used. It will promote the most appropriate and cost effective management of all waste generated by providing financial incentives consistent with the waste management hierarchy, i.e. making the least desirable alternatives the most expensive.

**COUNCIL APPLICATION OF POLICIES**

These policies will be applied most directly during the Council's policy reviews for regional facilities and programs, and in the preparation of environmental review documents to assess the impacts of regional solid waste management facilities. As the Council reviews the region's plans for additional waste management facilities, it will encourage the private sector to provide the necessary capacity. However, the Council will not delay environmentally sound and cost effective public sector projects in favor of uncertain private sector efforts.

Council research efforts and technical assistance can help with the transition to a regional system. Council grant funds will be used to develop regional programs. The Council will work with the counties and the Office of Waste Management to develop a viable landfill siting process.

Solid waste disposal sites require extensive land area that is only available in the Rural Service Area within the region. A landfill siting process that primarily involves the selection of environmentally suitable site(s) is detailed in the appendix of this plan. The landfill siting process should minimize impacts on the regional park system as well as on agricultural activities. However, if no other land is determined by the counties or the Council to be environmentally suitable for development at an affordable cost, neither park lands nor agricultural lands should be automatically excluded from the siting process. In addition, landfills should be accessible via at least a 9-ton vehicle load capacity roadway. As part of the site selection criteria the proximity to such highway access and/or the costs of providing access to the nearest roadway should be considered.

# GOVERNANCE OF THE SOLID WASTE SYSTEM

## CURRENT STATUS

Under current law the Metropolitan Council is responsible for preparing the 20-year system plan for managing all the region's solid waste. The Council's plan also lays out the methodology for integrating the overall solid waste management system. Under both the Waste Management Act of 1980 and the Metropolitan Governance Act, counties are responsible for implementing the regional solid waste system plan and are required to prepare and adopt solid waste master plans that provide specific local direction on how the Council's policy plan will be carried out.

As the primary implementors of the policy plan, each of the counties has acted independently to determine the mix of programs and facilities it will provide, the cooperative arrangements it will enter and financial arrangements it will make to pay for solid waste management. This system of autonomous county activity has produced significant changes to solid waste management in the region and resulted in programs and facilities which have been acclaimed as national models.

Mutual processing agreements have also been established. For example, Ramsey and Washington Counties have combined with Northern States Power (NSP) on the Newport refuse-derived fuel plant. In addition, the waste management system has expanded beyond the seven-county Metropolitan Area with the Anoka and Hennepin County waste processing agreements with the NSP Elk River RDF facility. However, to develop a system in compliance with the 1985 policy plan, county efforts have been directed at fulfilling that plan's individual county goals rather than at planning for regional waste management needs.

While the Waste Management Act of 1980 encourages provision of services by the private sector, increased public control, particularly through county waste flow designation, has resulted in a guaranteed supply of waste to some private businesses while, conversely, making it difficult for other private businesses to gain entree to the system. The outcome has been an emerging system of individual recycling programs, independent county contracts for waste processing and rapidly dwindling metropolitan landfill capacity. The flow of waste out of the region to landfills in adjacent counties (with lower tipping fees) continues at fluctuating rates, adding to the Council's difficulty with forecasting landfill needs. Currently, not every county in the region has or is required to have a solid waste landfill.

Both the counties and the Council have recognized that increasing landfill abatement beyond current levels in a cost effective and environmentally sound manner will require a shift to a regional system. The counties have already begun to explore options for a regional management model. They formed the Solid Waste Management Coordinating Board, a joint powers agreement structure, that is planning the collective implementation of waste management strategies and the development of agreements to share waste among facilities in the region.

Although the Council and the counties share the primary responsibility for the solid waste management system in the Metropolitan Area, the state, the cities and the private sector play important roles as well. Under current law solid waste management responsibilities are assigned as follows:

| | |
|---|---|
| State: | -Pass and enforce legislation governing and regulating the management of solid waste.<br>-Review and approve solid waste master plans for nonmetropolitan counties.<br>-Issue and monitor permits for solid waste management facilities.<br>-Develop markets for recycled and recyclable materials.<br>-Develop a solid waste curriculum for schools and public information materials and programs for citizens.<br>-Conduct environmental reviews.<br>-Administer grants programs to encourage system implementation.<br>-Monitor the solid waste management system.<br>-Report periodically to the legislature. |
| Metropolitan Council: | -Prepare a policy plan including a 20-year system plan for managing all of region's waste.<br>-Review and approve solid waste master plans for metropolitan counties.<br>-Review solid waste facility permits for consistency with county and Council plans.<br>-Monitor progress toward system implementation.<br>-Administer an abatement grants program to promote system implementation.<br>-Conduct environmental reviews.<br>-Report periodically to the legislature.<br>-Participate in the counties' development of a workable landfill siting process. |
| Counties: | -Implement the Council's policy plan.<br>-Prepare and adopt solid waste master plans that provide specific local direction on how the Council's policy plan will be carried out.<br>-Develop a workable landfill siting process and a plan for sharing the costs and liabilities of new and existing waste facilities.<br>-Adopt and enforce solid waste designation ordinances to ensure the delivery of waste to resource recovery facilities.<br>-Ensure that needed waste management facilities are constructed/operated and that waste management goals are met.<br>-Monitor the solid waste management system.<br>-Report periodically to the Metropolitan Council and/or the legislature. |
| Cities: | -Regulate the collection of solid waste.<br>-Opt to provide solid waste collection services.<br>-Report periodically to the county. |
| Private Sector: | -Provide waste management services.<br>-Comply with public regulations and reporting requirements.<br>-Construct, own and/or operate landfills.<br>-Construct, own and/or operate resource recovery facilities, often jointly with the public sector. |

## ISSUES

### Separate County Waste Systems

County-by-county goals contained in the 1985 policy plan resulted in a waste management system that is fractional and largely single-county oriented. No county has or is planning all the waste facilities needed to manage the diverse solid waste stream in an optimum manner. As a result, solid waste which has not been processed to the greatest extent possible is still being landfilled. Maximizing landfill abatement is expensive. By working cooperatively the counties could plan, finance and share facilities that complement the existing waste management system and further process wastes.

Individual county control of waste flow works against this cooperative utilization of facilities by requiring that waste generated within the county be delivered to that county's waste processing facility regardless of what type of waste it is or what the "natural" wasteshed might be. Also, existing facilities have in place financial and debt service contracts which have been negotiated with one or a limited number of counties. Shifting the waste management infrastructure from a county-by-county system to a regional system will require that these issues of designation, financing and authority be addressed.

The 1991 legislature endorsed the shift to a regional approach and recognized that these issues must be considered. Its 1991 Waste Management Act amendments required the metropolitan counties to report by December 1, 1991, how they "will share the costs and liabilities of new and existing waste facilities and how they intend to share the waste stream to ensure that each portion of the waste is most appropriately managed." The Solid Waste Management Coordinating Board has resolved to develop the required plan and serve as the regional planning entity.

### Waste Management Planning

Solid waste management planning needs to be expanded to address the total solid waste stream. Some industrial, demolition, construction and other non-MSW waste management sites are reaching capacity and/or could become environmental risks. As a result, increasing amounts of these wastes may end up at MSW management facilities. County master plans will be expected to include methods for operating facilities in a cooperative manner to address such issues as waste hauling distance, waste processing during facility maintenance and optimal management of each type of waste generated regionwide.

Goal 4

WASTE MANAGEMENT FACILITIES MUST BE PLANNED, ESTABLISHED AND OPERATED AS PART OF AN INTEGRATED REGIONAL SOLID WASTE MANAGEMENT SYSTEM IN ORDER TO MANAGE ALL OF THE REGION'S SOLID WASTE IN AN ENVIRONMENTALLY SAFE AND ECONOMIC MANNER.

Policies

4A. THE COUNCIL WILL PLAN FOR AND OVERSEE THE DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED REGIONAL SOLID WASTE MANAGEMENT SYSTEM.

4B. THE METROPOLITAN COUNTIES SHOULD DEVELOP A REGIONAL SYSTEM OPERATIONS PLAN THAT INTEGRATES THE OPERATIONS OF FACILITIES AND PROGRAMS.

The orderly transition from a system primarily dependent on land disposal to a system that emphasizes waste reduction and resource recovery requires that public and private solid waste management services continue to be provided efficiently and economically throughout the region. Waste materials, volumes and supply areas should also be coordinated to assure effective management.

## COUNCIL APPLICATION OF POLICIES

The Council will report to the legislature on the cumulative progress toward these goals. The Council will participate in the development of the plan for the regional development and operation of solid waste management facilities as directed by the legislature. If regional waste-sharing agreements are not developed and implemented, and the counties are unable to achieve the landfill abatement goals, the Council will request action by the legislature to establish a regional solid waste management entity.

To assist the counties in planning for the management of all solid waste, the Council will study the current management of non-MSW solid wastes (particularly privately managed waste, such as demolition/construction and industrial materials) to determine how the waste management needs of the region should be met. This study will be completed within two years of the adoption of the policy plan.

Under the Waste Management Act of 1980 (Minn. Stat. 473.803), the Council sets the time requirements for county revision and submission of the solid waste master plan. In keeping with the time requirements set in legislation for other county and local government plan elements prepared for review, the Council believes that nine months is a reasonable period for county revision of the solid waste master plan. Each metropolitan county must prepare and submit to the Council a revised solid waste master plan nine months after the Council adopts its revised solid waste policy plan. The Council will use these policies as it reviews the county master plans, and monitors the counties' progress toward solid waste system goals and the costs incurred in establishing the overall system. The Council will also apply these policies when it performs other tasks such as the review of environmental assessment worksheets or environmental impact statements.

# FISCAL MANAGEMENT

The Council's *Metropolitan Development and Investment Framework* guide (MDIF) contains policies and goals that provide financial direction and the objectives of a long-range financial plan to the solid waste management system. They are summarized as follows:

1. Maintain and upgrade existing systems before expanding;

2. Make efficient use of public resources;

3. Promote cost-effective solutions;

4. Achieve equity in allocating solid waste management costs and responsibilities among product manufacturers, distributors and consumers;

5. Ensure that solutions are efficient in terms of providing incentives to reduce waste, to manage waste streams effectively, and to move toward a cohesive metropolitan system addressing all regional solid waste needs;

6. Pay for operating and debt service costs from user fees, expansion of existing revenue sources (such as sales of energy and recycled materials), or new benefit-related excise taxes;

7. Cost-effectively share existing and future facilities for solid waste resource recovery and disposal; and

8. Increase tipping fees for land disposal of all solid wastes to reflect all related costs and to encourage generators to participate in further waste reduction efforts.

Financing the solid waste management system is not an issue. Needed facilities and programs have been identified and their costs have been paid. Rather, the issue has been fiscal management of the system as identified in the MDIF. These policies are intended to achieve the equitable, cost-effective solutions and efficient use of public resources called for in that document.

## CURRENT STATUS

The total operating cost for solid waste collection, processing and disposal for the Metropolitan Area was estimated to be $343 million in 1990. This includes mixed municipal solid waste, commercial and industrial waste and special waste, and excludes demolition debris and industrial hazardous wastes. Collection, processing and disposal costs can be broken down as follows:

| | |
|---|---|
| Collection | $ 213,630,000 |
| Processing | 96,390,000 |
| Disposal | 33,270,000 |
| Total Gross Costs | $ 343,290,000 |

Sales of recyclables and energy derived from processing waste were estimated to be $43.7 million in 1990. These revenues offset system costs so that the net cost of waste management operations was approximately $300 million in 1990.

The cost of waste management has increased substantially since 1985. In 1985, household annual disposal costs averaged about $105 and have increased to about $235 in 1990, which includes $210 for basic residential collection and $25 for yard waste collection. This does not include separate charges for recycling that occur in some communities. Costs for commercial and industrial waste generators will differ from the estimated costs for households.

The major source of the cost increase for the 1985-1990 period was additional processing costs introduced as a number of major energy recovery and RDF plants were brought on line. Collection costs have also risen due to separate collection of recyclables, yard wastes and household hazardous wastes.

There will be significant cost increases throughout the decade due to the construction of new facilities. Debt service costs for new facilities to be brought on line during the period 1990-2000 will add an average $37.3 million a year to the annual total gross system costs over the period 1990 to 2020.

## ISSUES

### Allocation of Costs

Solid waste management is and should continue to be largely financed by user fees. User fees pay operating expenses and capital costs. General tax revenues have been used by at least one county for planning and regulatory purposes but do not generally support waste processing and disposal. Operating revenues are available from the sale of energy or energy products, recyclables, and compost. In 1990 revenues from these sources are estimated at over $40 million. Maximizing these revenues reduces user fees.

Generators should pay the complete costs of waste management to maintain incentives for waste reduction and recycling, and to promote equity in allocating waste management costs. Disposal and processing should not be funded by broad-based taxes. Benefit-related excise taxes on identified problem materials (Policy 1B) will encourage waste reduction and provide funds for management of those materials. The fiscal emphasis of all system implementors should be cost-effective management.

While the Council believes that the solid waste management system should be self-funding and, to the extent possible, operated on a "user pay" basis, it is aware that there are a variety of funding methods currently in operation in the region that would be difficult to change. However, a shift to the "user pay" concept will be an important component of cost-effective management as current programs and facilities are modified and new ones established.

## Competitive Operation

A diversified system is developing that matches appropriate waste management technology with components of the waste stream. This requires building and operating a number of different processing facilities using different technologies (for example; composting, recycling, energy recovery, etc.). Facilities should be sized for optimal efficiency and protection of the environment. New facilities should be designed to complement those already in operation. It is not necessary or cost-effective for each county to house a complete range of processing options. Certain types of waste are produced in insufficient volumes for an individual county to deal with effectively. In order to manage these variations in an economic manner, waste facilities should be operated as part of an integrated and interdependent regional system. Also, there is considerable variation in waste flows. Processing facilities have occasional periods when they are not operating or when they are operating at full capacity. In those periods, waste may bypass the processing facility and be landfilled. At the same time, another facility in the region may have excess capacity. Agreements between counties must be developed to share processing capacity. This could prevent waste from bypassing processing and maximize efficient use of existing facilities. New facilities could be constructed and operated by either the public or the private sector, with the emphasis on the need for the facility and the ability of the proposer to operate it in a cost effective and environmentally sound manner.

The operation of facilities in a regional system raises the question of cost and liability sharing. Currently the county or counties sponsoring the facility or within whose boundaries the facility is located are liable for and finance its operation. If facilities are to be considered regional facilities, liability and costs sharing must be regional as well. The Council will work with the counties to determine how regional liability and costs should be managed.

## Pricing and the Waste Management Hierarchy

This plan contains a number of policies which attempt to provide financial incentives to promote the management of solid waste in a manner consistent with the waste management hierarchy, i.e. making the least desirable management options the most expensive. Policy 1A increases the cost of landfilling by calling for the assessment of an environmental protection fee on all waste disposed of in landfills. The Council believes that covering all costs associated with landfills in their tipping fees will make landfilling the most expensive alternative. Similarly, charging generators collection fees based on the volume or weight of the waste they generate (Policy 2B) will encourage them to reduce the amount of waste they produce.

Financing mechanisms should be developed within the context of the waste management hierarchy. Those which provide financial incentives which are contrary to the hierarchy, such as making waste processing more expensive than landfilling, should be avoided.

Goal 5

THE SOLID WASTE MANAGEMENT SYSTEM MUST MAKE EFFECTIVE USE OF PUBLIC RESOURCES AND ALLOCATE COSTS EQUITABLY TO WASTE GENERATORS.

Policies

5A. IN GENERAL, MANAGEMENT OF THE WASTE STREAM SHOULD BE PAID FOR BY GENERATORS AND FROM REVENUES DERIVED FROM THE SALE OF ENERGY, RECYCLABLES AND COMPOST.

5B. THE MANAGEMENT OF HOUSEHOLD HAZARDOUS WASTES AND IDENTIFIED PROBLEM MATERIALS, AND THE DETOXIFICATION OF THE WASTE STREAM SHOULD BE FINANCED IN ACCORDANCE WITH POLICIES 1A. AND 1B.

## COUNCIL APPLICATION OF POLICIES

The Council will use these policies in its review and approval of the regional operations plan and the county master plans. These policies will be applied during the Council's policy reviews for regional facilities and programs, and in the preparation of environmental review documents.

# SYSTEM PLAN

## INTRODUCTION

The waste management system plan identifies the programs and strategies the Council believes will be necessary to accomplish the solid waste policies and system goals it has established for the period 1990-2010. The system plan also identifies the actions that state, regional and local agencies, and the private sector should take to carry out these programs and strategies.

The Council has set some parameters within which it expects the diverse solid waste system to evolve. First, it assumes that recycling in the Metropolitan Area will continue to increase beyond the 35 percent level in 1993 and 45 percent level (excluding yard waste) in 1996 set for the Metropolitan Area in legislation. Recycling is anticipated at 50 percent by 2000. Second, the Council will not approve planning for and implementing any additional incineration capacity beyond that already indicated by current county plans until after 1995.

Portions of the system plan refer to specific numeric objectives that have been set for the region. These objectives are a response to legislation that requires that counties reach percentage "goals" for tonnages recycled. The legislation also refers to "measurable objectives" that the Council must set for the counties as they work to achieve increasing levels of landfill abatement. The word "objective" is used in the policy plan, rather than the word "goal" used in legislation, to distinguish it from the Council's use of the term "goal" in the "Goals, Issues, and Policies" section. The Council uses the word "goal" to refer to a long range purpose toward which the Council will direct its policies.

# UNDERLYING PRINCIPLES OF THE SYSTEM PLAN

The basic underlying principles that have guided the development of this policy system plan include:

1. The solid waste management system should be regional, comprehensive, and contain a variety of public and private management options;

2. The various waste management options will be considered in a hierarchy based on their environmental and land use impacts;

3. Implementation of the Council's solid waste management policies will require decision-making at several levels of government; and

4. Implementation of the Council's solid waste management system plan will require a shift to multi-county or regional strategies.

The basic concept of the waste management system plan is that the best approach to solid waste management is to develop a comprehensive regional system that is not dependent on any one management option. It recognizes the diversity of the waste stream and the need to consider the most appropriate management strategy for each type of waste resource.

The Council sees the relationship of the various management options in terms of a hierarchy based on their environmental and land use impacts. The most preferred option is waste reduction and the least, landfilling (see page 7). The system plan also responds to legislation directing that a much larger portion of the waste stream be recycled and that, after 1990, land disposal facilities be used only for the residuals from other waste management methods identified in the hierarchy.

The strategies to implement the Council's solid waste management policies require decision-making at several levels of government. The Council assumes the overall planning and coordinating role, while the counties are responsible for ensuring that the regional system is implemented. In addition, the participation of cities, townships and the private sector will be critical to the successful implementation of the plan.

The region's solid waste management system will continue to develop and mature during the 20-year timeframe encompassed in this plan. New institutional structures and relationships will be necessary to successfully implement the regional solid waste policies. The system plan requires that the next 20 years produce a shift from an emphasis on individual county efforts to multi-county or regional strategies. As waste processing facilities come on line, multicounty or regional arrangements will be needed to ensure that each component of the waste stream is managed in the most environmentally sound and cost-effective manner, and that waste is redirected to other regional facilities when a specific facility is not operating. The balance between the need to provide for the economic development of a variety of facilities to maximize processing and the need to protect public sector investments and minimize risk will require continued attention. Because sharing of services within the region will be a more efficient alternative, each county will not have to initiate the entire range of needed management activities.

# FORECASTS

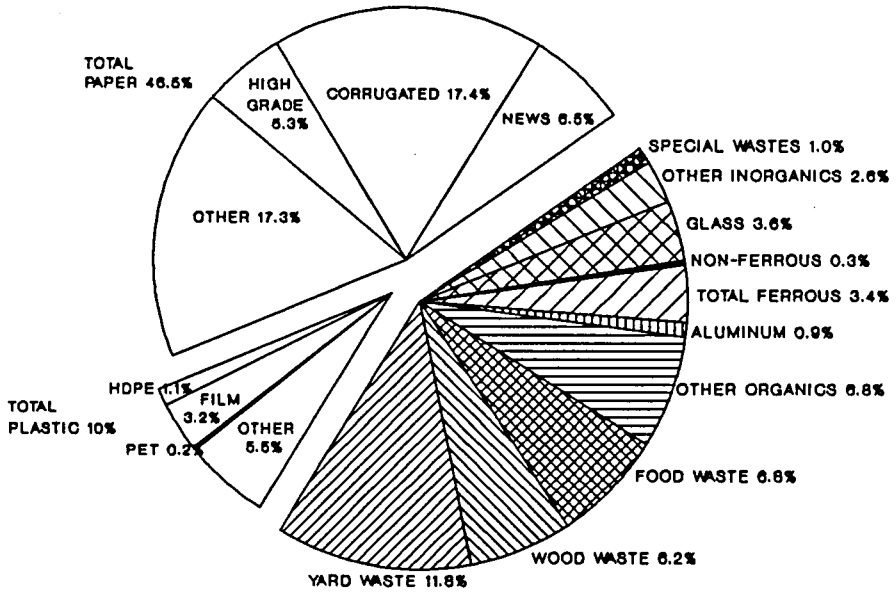
## WASTE COMPOSITION

As the Metropolitan Area's waste management system has developed to include a wide variety of technologies to manage waste, it has become increasingly important to know not only the amount of waste generated, but also the characteristics of that waste. Factors such as toxicity, combustibility, and recyclability are directly relevant to the planning and effective operation of waste management programs and facilities.

A 1984 Hennepin County analysis of the composition of mixed municipal solid waste (MSW) served as the basis for much of the Council's early policy planning and abatement program development. To get current information about the characteristics of the region's MSW waste stream and to expand the categories of materials studied (particularly recyclables), the Council contracted with Cal Recovery Systems to perform a waste analysis in a Metropolitan Area processing facility in the summer of 1988.

Figure 3 summarizes the findings of the waste composition analysis for the 22 categories of waste sampled. This composition data reflects only MSW materials disposed of at a waste processing facility.

Figure 3
1988 WASTE COMPOSITION BY WEIGHT
CAL RECOVERY RAMSEY/WASHINGTON DATA




SOURCE: CRS Report 1187-88-2 Dec. 1988

## Forecasted Waste Composition

Recent trends in waste composition point to a continued increase in paper products, plastics and aluminum containers. By the year 2000, 90 percent of the MSW waste stream is likely to consist of organic materials--compostable or burnable.

Further analysis of waste stream composition will be an important component of the Council's research efforts during the next few years. Waste sorts may be necessary at landfills and waste processing facilities during all four seasons in order to determine the most appropriate management options for the many types of waste generated.

The future generation and composition of solid waste in this region, as elsewhere, could be substantially changed by a number of factors that can't be predicted: changes in consumer and producer behavior; fluctuations in the economy; technological advances; or legislation.

Table 1 shows projected composition changes in the MSW waste stream over the next 20 years.

**Table 1**
**MIXED MUNICIPAL SOLID WASTE COMPOSITION PROJECTIONS**
**Based on Cal Recovery's Research at the Ramsey/Washington Resource Recovery Project**

| Component | Percentage 1987 | Percentage 1990 | Percentage 2000 |
|---|---|---|---|
| High Grade Paper | 5.3 | 5.6 | 6.3 |
| Newspaper | 6.5 | 6.8 | 7.4 |
| Corrugated | 17.4 | 17.8 | 18.1 |
| Other Paper | 17.3 | 18.1 | 19.7 |
| HDPE Containers | 1.1 | 1.3 | 2.2 |
| Film Plastics | 3.2 | 3.5 | 4.5 |
| PET Beverage | 0.2 | 0.3 | 1.3 |
| Other Plastics | 5.5 | 6.1 | 7.8 |
| Yard Waste | 11.8 | 11.0 | 8.8 |
| Food Waste | 6.8 | 6.4 | 5.1 |
| Wood Waste | 6.2 | 5.8 | 4.7 |
| Other Organics | 6.8 | 6.4 | 5.1 |
| Ferrous Metals | 2.9 | 2.7 | 1.9 |
| Aluminum Beverage | 0.6 | 0.7 | 1.1 |
| Other Aluminum | 0.3 | 0.3 | 0.2 |
| Bi-Metal Beverage | 0.5 | 0.3 | 0.1 |
| Other Non-Ferrous Metals | 0.3 | 0.3 | 0.2 |
| Food Glass | 0.7 | 0.7 | 0.6 |
| Beverage Glass | 2.2 | 2.1 | 1.7 |
| Other Glass | 0.7 | 0.7 | 0.5 |
| Other Inorganics | 2.6 | 2.4 | 1.9 |
| Special Waste | 1.0 | 2.4 | 1.9 |
| TOTAL | 100.0 | 100.0 | 100.0 |

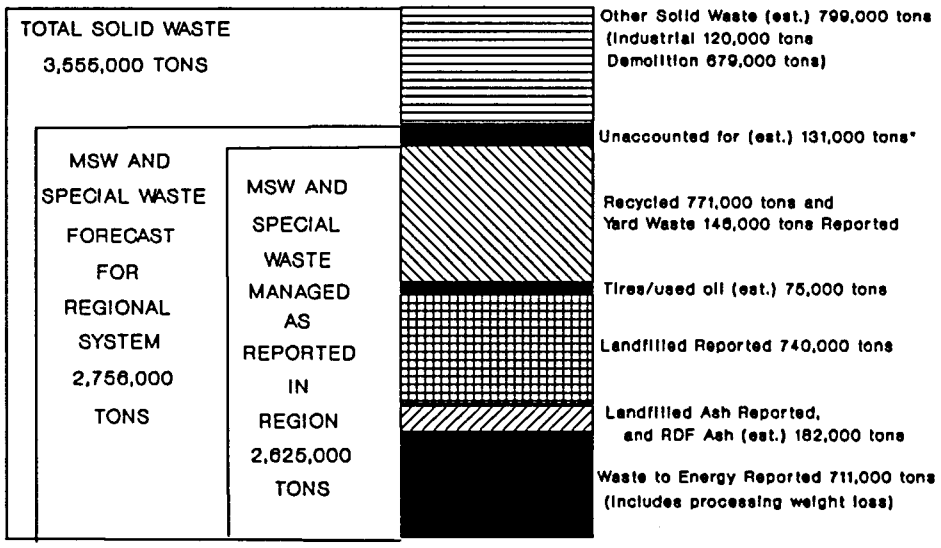
Source: CRS Report 11-87-88-2 Dec. 1988

## WASTE GENERATION

The term waste generation was used in the 1985 policy plan to refer to the generation of mixed municipal solid waste, which is defined in legislation as garbage, refuse and other solid waste from residential, commercial, industrial and community activities that is collected in aggregate. The plan's focus was the abatement of MSW land disposal. The MSW generation figures did not include existing recycled materials, special wastes (such as tires, used oil and batteries that continue to be prohibited from being handled as MSW), nonhazardous industrial wastes and demolition debris.

During the five years since the 1985 policy plan was written, the Council's responsibility for ensuring that adequate landfill capacity exists has indicated a need to consider a broader definition of waste generation to include at least special wastes, the ultimate management of which will fall to the counties. The need to include generation estimates of these materials in waste generation totals has increased with each legislative decision to ban another material from the MSW stream. These decisions absolve counties of immediate management responsibility but often make no other entity responsible in the counties' place.

Figure 4
METROPOLITAN AREA TOTAL WASTE MANAGEMENT
1990




*Includes litter, undocumented management and disposal.

Source: Metropolitan Council

Figure 4, presents the Council's assessment of the amount of solid waste generated in the region in fiscal year 1990. This graph illustrates that MSW generation is only a portion of the total

wastes that are filling the region's landfills. Increased attention to the wide variety of materials and resources in the total solid waste stream will be necessary in order to abate landfilling to the greatest extent possible. This is essential for several reasons: industrial and demolition materials could be more frequently disposed as MSW in the future; special wastes must continue to be monitored; and the waste generation base used to evaluate abatement progress must be kept clear.

The difference between estimated waste generation and total waste managed by counties through recycling, resource recovery and landfilling is indicated in Figure 4 as "unaccounted for." Some of this material may be unreported recycling--particularly commercial and industrial materials, and small residentially oriented programs such as those run by schools, scouts and other nonprofit organizations. Other material may be unreported disposal activities, including illegal dumping (tires, for example), and landfilling in nonmetro landfills (other than those identified by the Council and counties); increases in compaction rates of materials delivered to the landfills (many landfills collect data on a volume rather than a weight basis); or normal annual variations in solid waste generation (variations of 10 percent or more from year to year have been common in past years). The unaccounted for amount is counted as being land-disposed for purposes of the system plan. Additional generation studies are planned in 1991 that will provide more reliable estimates.

## Forecasted Waste Generation

Using MSW waste generation figures, Cal Recovery Systems Inc. developed estimates on the average amount of MSW waste generated per capita and per employee in the region. Each county's contribution to the total regional waste stream was also estimated. Council staff used the Cal Recovery data together with updated Metropolitan Council population and employment projections done in 1989 to estimate the amount of municipal and special solid waste generated on an annual basis through the year 2010 (Table 2). The Council will use these estimates, together with estimates of other types of waste generated, to plan the solid waste management system. However, these numbers will be evaluated and updated periodically and the most current numbers will be used in Council plan reviews and policy decisions.

Table 2 includes estimates of annual municipal waste generation through the year 2010. Figures presented differ from estimates in the 1985 policy plan for several reasons:

- The 1985 plan did not count existing recycling: it only dealt with waste being landfilled in 1985.

- The 1985 figure included only mixed MSW, so wastes excluded by law from mixed MSW (tires, oil, lead acid batteries, etc.) were not included.

- The annual rate of growth in the waste stream was expected to be about 1%. The rate of growth experienced, through 1990, was 2.3%.

The generation of municipal waste is expected to increase at an average annual rate of 1.6 percent from 1990 through 2000. This rate of increase is more than 50 percent less than the 3.3 percent average annual rate of increase experienced in the Metropolitan Area between 1973 and 1986, and about one-third less than the 2.3 percent average annual rate of increase experienced between 1986 and 1990. However, it is higher than the average annual 0.9 percent rate of increase based on forecasted growth in population and employment during the decade. Consequently, the forecasts of waste generation assume that waste reduction efforts and increasing costs will successfully slow the historic rate of increase in waste generation, but will not succeed in reducing total waste generation during the decade.

**Table 2**
**FORECASTS OF MUNICIPAL WASTE GENERATION**
**1990-2010**
(Based on Population and Employment)

| County | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|---|
| Anoka | 224,000 | 228,000 | 233,000 | 238,000 | 243,000 | 248,000 | 253,000 |
| Carver | 41,000 | 42,000 | 43,000 | 44,000 | 45,000 | 46,000 | 47,000 |
| Dakota | 271,000 | 280,000 | 289,000 | 298,000 | 308,000 | 318,000 | 328,000 |
| Hennepin | 1,430,000 | 1,449,000 | 1,468,000 | 1,488,000 | 1,508,000 | 1,528,000 | 1,548,000 |
| Ramsey | 617,000 | 624,000 | 631,000 | 638,000 | 645,000 | 652,000 | 659,000 |
| Scott | 52,000 | 53,000 | 54,000 | 55,000 | 56,000 | 57,000 | 59,000 |
| Washington | 121,000 | 124,000 | 127,000 | 130,000 | 133,000 | 136,000 | 139,000 |
| Total | 2,756,000 | 2,800,000 | 2,845,000 | 2,891,000 | 2,938,000 | 2,985,000 | 3,033,000 |

| County | 1997 | 1998 | 1999 | 2000 | 2005 | 2010 |
|---|---|---|---|---|---|---|
| Anoka | 258,000 | 263,000 | 268,000 | 273,000 | 302,000 | 334,000 |
| Carver | 48,000 | 49,000 | 50,000 | 51,000 | 57,000 | 64,000 |
| Dakota | 338,000 | 349,000 | 360,000 | 371,000 | 412,000 | 458,000 |
| Hennepin | 1,569,000 | 1,590,000 | 1,611,000 | 1,632,000 | 1,755,000 | 1,887,000 |
| Ramsey | 666,000 | 673,000 | 680,000 | 687,000 | 731,000 | 777,000 |
| Scott | 61,000 | 63,000 | 65,000 | 68,000 | 76,000 | 86,000 |
| Washington | 142,000 | 145,000 | 148,000 | 151,000 | 168,000 | 188,000 |
| Total | 3,082,000 | 3,132,000 | 3,182,000 | 3,233,000 | 3,501,000 | 3,794,000 |

Average Annual % Increase (87-90) = 2.34%
Average Annual % Increase (90-00) = 1.61%
Average Annual % Increase (00-10) = 1.61%

Note: Table shows mixed municipal waste plus special wastes.

## LANDFILL CAPACITY

In November 1988, the remaining capacity at regional landfills was estimated at 7,437 acre feet. This estimate is based upon aerial photographs and Council staff analysis. (An acre-foot is the space occupied by waste that would cover an acre to a depth of one foot.) Freeway Landfill closed in 1989 and Louisville Landfill closed in 1990. Currently only Burnsville, Pine Bend, Woodlake and Anoka Landfills are open. None of these landfills are prepared to dispose of ash from processing facilities. Historically the Council has maintained that at least three mixed waste landfills should be operational at all times until ash disposal options are less uncertain and a large waste disposal facility with an emergency back-up cell is available to serve the region.

The rate at which the Metropolitan Area is consuming regional landfill capacity appears to have decreased significantly as more processing facilities have come on line and additional waste tonnages have been disposed of in landfills located outside the region. This trend is expected to continue as additional processing facilities are constructed. However, the 1991 legislature limited the disposal of metropolitan waste to lined landfills only after Jan. 1, 1992, which will effectively limit the export of waste to a single nonmetro landfill located at Elk River. Further, the legislature directed the metropolitan counties to devise a process for siting and developing sufficient metro landfill capacity to meet the region's needs for solid waste and ash disposal.

The facility implementation schedule contained in this document meets the legislative requirement that the Council ensure that a minimum amount of necessary landfill capacity is available assuming that the policy plan is implemented. The landfill capacity needs, therefore, reflect the optimal implementation of the system. Landfill capacity could be depleted prior to 2000 if system implementation is not optimal. Optimal conditions would require that processing facilities must be operational when scheduled; they must perform as projected; and the materials recovery recycling goals must be achieved and maintained.

Only two types of leeway are built into the development schedule prior to 2000. First, to the extent possible, landfills are scheduled for development a few years before remaining capacity serving the region is completely exhausted. This is essential to avoid dependence on a single facility that may not have the operational capability to handle the entire region's land disposal volume. Second, an assumption is made that 10 percent of the waste stream scheduled for alternative management will be landfilled. This assumption is conservative because experience demonstrates that landfilling may be allowed or cannot be prevented for non-MSW materials such as industrial waste and demolition debris; separated materials that cannot be marketed; materials that are difficult to manage; designation "slippage" where haulers may evade tipping their loads at designated facilities; and disruptions at resource recovery facilities. Since the 1985 policy plan was adopted, the region has consistently used significantly more landfill space than the Council projected.

Figure 5
IMPLICATION OF PROJECTED LANDFILL USE ON
EXISTING CAPACITY

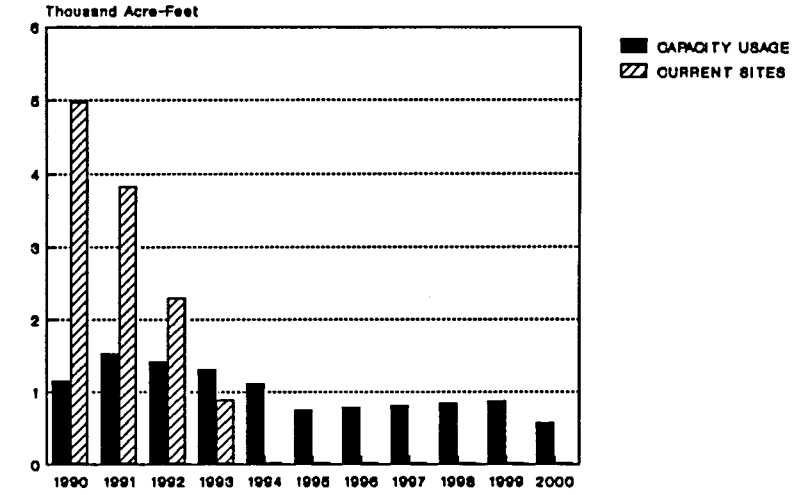



Figure 5 indicates actual and projected landfill space consumption compared to the amount of capacity currently available in the region's landfills. After 2000, the growth in the portion of the waste stream that is not recycled is projected for land disposal because specific resource recovery projects cannot be predicted.

## Forecasted Landfill Capacity and Use

Table 3 identifies landfill needs based on current projections. Table 4 identifies the amount of regional landfill capacity available for each type of waste disposal in 1990. Figure 5 portrays the implications of the projected disposal on existing Metropolitan Area landfills. Landfill capacity estimates will be revised regularly as new data is obtained from aerial flyovers of landfills, facility reports, county annual reports, and other sources. Capacity estimates must consider the disposal of all solid waste generated (Table 3). The MSW land disposal projections in Table 3 reflect a declining disposal rate through 2000 as materials and energy recovery programs are implemented. The subsequent higher volumes projected for disposal after 2000 can be reduced if new abatement initiatives are implemented in response to waste stream growth. The total capacity in existing cells for all types of land disposal in and near the Metropolitan Area is slightly more than 12,000 acre-feet.

**Table 3**
**PROJECTED METROPOLITAN AREA LANDFILL CAPACITY DEMAND**
**(ACRE-FEET)**

| | 1990 | 1991-1995 | 1996-2000 | 2001-2005 | 2006-2010 |
|---|---|---|---|---|---|
| MSW Landfill | 1,450 | 5,600 | 3,300 | 2,700 | 3,500 |
| Ash Landfill | 90 | 530 | 580 | 580 | 580 |
| Demo Landfill | 770 | 3,850 | 3,850 | 3,850 | 3,850 |
| Industrial Waste Landfill | 170 | 900 | 970 | 1,050 | 1,140 |
| TOTAL | 2,480 | 10,880 | 8,700 | 8,180 | 9,070 |

NOTE: Capacity projections are based upon the following density assumptions for land-disposed waste:

| | |
|---|---|
| MSW | - 1,200 lbs./cu.yd. |
| Processing residuals & rejects | - 1,400 lbs./cu.yd. |
| Incineration ash | - 2,400 lbs./cu.yd. |
| Demolition debris | - 1,500 lbs./cu.yd. |
| Industrial waste | - 1,500 lbs./cu.yd. |

**Table 4**
**LAND DISPOSAL CAPACITY AVAILABLE TO THE METROPOLITAN AREA IN 1990**

| TYPE OF CAPACITY | ACRE-FEET |
|---|---|
| MSW Landfills | 5,620 |
| Landfill Export (within 30 miles) | 1,550 (MPCA estimates) |
| Ash Export | Unknown |
| Demo Landfills | 5,000 |
| Industrial Waste Landfills | Unknown |

The Council will require that counties obtain adequate landfill capacity to meet the needs identified in current Council landfill schedules. (Table 7) The Council will expect that any capacity obtained outside the Metropolitan Area will be assured by contract and meet the environmental standards for new landfills required by the MPCA that include liners and leacheate collection systems.

A 1990 MPCA report, *Solid Waste Processing and Disposal: Capacity, Competition, Fees and Progress*, indicates that the state is moving toward a smaller number of landfills serving larger regional wastesheds. The Metropolitan Area, as the major waste generating region in the state, must behave responsibly in ensuring capacity to meet the needs of the state landfill system.

Although the candidate landfill siting process in place during the 1980s is currently suspended, legislation requiring the counties to replace it with a viable process for siting both an MSW and an ash landfill in the region before the candidate siting process can be repealed ensures that a siting process will be completed. The impact of Metropolitan Area facility decisions on disposal and processing facilities located outside the region must be considered as siting and development proceed.

# REGIONAL OBJECTIVES TO 2010

The region's experience with managing solid waste indicates that uninterrupted recycling and processing of 100 percent of the mixed solid waste stream cannot be guaranteed. In 1989, the legislature changed the law to allow unprocessed waste to be landfilled, but only after a county has certified that it is unprocessible and that no resource recovery facility in the Metropolitan Area is capable of processing it. Objectives set in this plan are based on a materials management approach to solid waste management that acknowledges that some MSW may not be processible with current technologies and must be landfilled. Conversely, wastes outside the MSW waste stream, such as industrial and demolition wastes, should be studied to determine whether they can be better managed by a technology other than landfilling.

For purposes of measuring whether the region as a whole is meeting its abatement objectives, the waste generation figure should include not only existing mixed MSW, but also those materials historically collected as MSW that are no longer collected in aggregate. These materials include those source-separated for recycling and/or separate processing such as: tree wastes; yard wastes; tires; batteries; household hazardous wastes; used motor oil; and major appliances (white goods). They are all materials for which the counties are ultimately responsible. Several of them, when recycled, will count toward the counties' recycling objective attainment. For purposes of ensuring that all waste is managed appropriately, rather than for the measurement of goal attainment, an even larger waste stream including all solid waste generated must be planned for and monitored.

The objectives set in this plan are different from those set in 1985 for several reasons:

1. The recognition of the complexity of the waste stream and the need to manage each component in the most environmentally sound and cost-effective manner.

2. The recognition of the key role that markets for both recyclables and recycled-content products play in the success of the system.

3. The legislative removal of requirements that measurable objectives be set for cities of the first, second and third class.

4. The legislative requirement that the Metropolitan Area set a recycling/yard waste composting objective of at least 35 percent by 1993 and 45 percent (excluding yard waste) by 1996.

5. The Council's decision that growth in the waste stream through 1995 will be addressed through recycling, yard waste composting, MSW composting and preprocessing (for recyclables, compostables and problem wastes), rather than through the expansion or development of additional incineration facilities beyond those currently planned by the counties.

6. The Council's efforts to address the entire waste stream rather than a limited focus on MSW.

## INDIVIDUAL COUNTY OBJECTIVES

With the Metropolitan Area moving toward a regional system, objectives for solid waste management are most appropriately set for the region as a whole, rather than for individual counties. While setting regional objectives does not explicitly implement current legislation, it is necessary in order to shift the focus to the Council's goals and policies for a regional approach to waste management. Individual county goals have actually tended to work against a regional approach by fostering artificial barriers between waste management facilities.

The counties will be expected to improve the efficiency of resource recovery facilities, plan for the sharing of both facility costs and liabilities and the waste stream, and document the success of such efforts as household hazardous waste programs. Each type of waste generated will be expected to be managed at as high a level in the waste management hierarchy as possible. However, the specific incremental county-by-county targets for recycling and waste processing set in the 1985 policy plan are eliminated. Instead, the success of the system will be determined by comparing progress in implementation with Council policies emphasizing waste reduction, increased recycling, processing of MSW as well as rejects and residuals from processing facilities, development of a cost-effective and environmentally sound regional approach to solid waste management, and achievement of as much waste processing as possible (the further processing of rejects and residuals, for example) before landfilling is allowed as a last resort.

The measurement of landfill abatement has been a subject of considerable controversy under the 1985 plan. The poor quality of data has been generally acknowledged. Much of the information reported has been based on partial surveys and estimates rather than actual tonnages. The use of solid waste being landfilled in 1985 as the base upon which abatement initiatives would be measured has resulted in efforts to estimate how much recycling was occurring prior to that year and confusing requirements that counties (and generators) determine whether recycling is pre- or post-1985. As the waste management system matures and ever-increasing numbers of facilities and vehicles are equipped with scales, it is expected that the quality of data will improve. Percentages reported will be expected to be tonnage based and commercial/industrial recycling reported will require documentation. The accuracy of the waste generation data base used to evaluate abatement performance will be more easily verified.

## WASTE REDUCTION OBJECTIVES

While the Council and the counties view waste reduction as the optimal waste management strategy, it has not been an area of consistent and focused effort at either the regional or local level. It has not been possible to measure many of the waste reduction efforts that have occurred. Approaches to waste reduction generally fall into five categories:

1. Reducing the amount of material or toxicity of material used in each product unit;

2. Increasing the useful life of products, particularly durable goods;

3. Substituting reusable products for single-use disposable products;

4. Changing behaviors to reduce consumption; and

5. Purchasing only quantities that are likely to be used.

The strategies most often proposed to implement these approaches include:

1. Regulation of product design, manufacture and packaging;

2. Financial incentives/disincentives;

3. Consumer information; and

4. Education.

Most of these strategies require action at the federal and/or state level, and, with the exception of consumer education, are difficult at the regional level. A major part of consumer education efforts at the local and regional level has been the encouragement of backyard composting of yard waste and mulching of grass clippings.

The Council strongly supports the concepts of waste reduction and reuse, and will support with its education efforts and grants programs the strategies identified to accomplish abatement through reduction and reuse. Efforts that give priority to reduction and reuse before considering recycling will be encouraged. In addition, counties will be required to present information on their waste reduction efforts in their biannual reports to the Council. However, because of the inherent difficulties in measuring reduction results, no specific percentage objective for waste reduction will be set for the region.

## MATERIALS RECOVERY OBJECTIVES

The 1985 policy plan set objectives for source separated recycling (including yard waste composting) in order to involve the generator to the greatest extent possible and thus promote greater awareness of the problem of solid waste. The target of an additional 16 percent in source separation by 1990, which was established in that plan, appears to have been a reasonable objective. Five years later, the region has dramatically increased the number of source separation programs available to residents, institutions and the commercial/industrial sector, and the region has achieved the source separation goal.

However, it has become clear that even greater efforts at recycling will be necessary in order to more fully abate landfill use. Legislation now requires that the Metropolitan Area achieve 35 percent total recycling (including yard waste composting) by 1993 and 45 percent by 1996 (excluding yard waste composting). In order to avoid landfilling unprocessed waste, the Council expects that the 45 percent goal will have to rise to approximately 50 percent of the waste stream recycled and composted by the turn of the century.

A legislative ban, effective Jan. 1, 1990, prohibits disposing of yard waste in MSW, in a disposal facility, or in a resource recovery facility except for the purposes of composting or co-composting. The metropolitan counties have determined that their primary emphasis on yard waste

management will be waste reduction. Extensive publicity has urged the public to mulch grass clippings and compost other yard waste at home. However, several large composting sites exist in the seven-county area and many haulers offer yard waste collection service. To handle the demand for compost sites, the Council estimates that at least one facility per county is needed to provide relative convenience for those using the sites. Tonnage measured from yard waste composted at community/county sites will be included in the counties' recycling figures as required by Minn. Stat. 115A.551, with the exception of the goal to recycle 45 percent of the waste stream by 1996. That exception, added to the statute by the 1991 legislature, specifically excludes yard waste.

It appears that curbside collection programs requiring the separate collection of each type of material identified for recycling may have limits. Current programs generally collect three or four materials and yard waste composting accounts for a significant proportion of source separation abatement goal achievement. To achieve higher recycling rates, additional materials will have to be added to collection programs. In order to manage this greater variety of materials, it is expected that collection programs will evolve to a "commingled" approach in which more than one type of material is placed in the collection container and in the bins on the collection vehicles. Such a system would require the construction and operation of materials recovery facilities (MRFs) to sort collected recyclables at a central location and process and/or aggregate them for markets. The Council will explore with the counties the need to add recyclables processing facilities to the region's waste management system in order to reach higher levels of recycling.

This concept is already being explored for the management of commercial and industrial wastes in the region and is in operation in other parts of the country for the processing of residential recyclables. Not only would it potentially increase the percentage of the waste stream recycled, but it would also improve the operation of resource recovery and MSW composting facilities by removing many of the materials that cause problems for those technologies. At least one facility in each county should serve as a drop-off collection site for county residents.

The following county objectives for recycling/yard waste composting reflect the need to continue increasing the amount of recycling in the region to 45 percent and beyond. The definition of recycling here is broader than the source separation focus of the 1985 plan, and includes yard waste composting, various types of source separation programs, mechanical separation, and the materials separated for recycling at central processing facilities. The base on which these percentages are measured will be consistent with the legislative definition of a "base" (MSW, plus materials separated for recycling and yard waste composting, plus yard waste, tires, lead acid batteries, used oil, major appliances, and residential waste materials that would be mixed municipal solid waste but for the fact that they are not collected as such).

**Recycling Objectives for the Metropolitan Area**

| 1990 | 1991 | 1992 | 1993 | 1995 | 2000 | 2010 |
|---|---|---|---|---|---|---|
| 20% | 25% | 30% | 35% | 40% | 50% | 50% |

## RESOURCE RECOVERY OBJECTIVES

The Council, in order to provide sufficient and varied processing capacity for the region's waste, will encourage the construction and efficient operation of waste combustion and RDF facilities currently operating or planned in the region. The Council will not approve the construction of additional RDF or mass burn facilities before 1995. The Council and counties will use the time until that date to evaluate the role of these facilities in an integrated waste management system. This decision will require that growth in the waste stream through that time period be managed through increased recycling or MSW composting.

One key component for improving the effectiveness of resource recovery facilities will be increasing intercounty cooperation in their use. For example, when one waste processing facility in the region is down, arrangements should exist for waste normally delivered to that facility to be sent to another resource recovery facility with spare capacity in the region rather than to a landfill. Facilities might also share waste across county boundaries to avoid transportation anomalies, produce more logical waste sheds, and/or further process the rejects and residuals prior to landfilling them.

The Council will expect to see an annual increase in the tonnage reported as processed by the counties as the Dakota, Farmington and Scott/Carver facilities are constructed and regional use of all metropolitan resource recovery facilities increases. The counties' ability to achieve these objectives will depend on a number of factors, such as the availability of markets, the processing efficiency of energy recovery facilities and the cooperative arrangements between processing facilities to provide backup support and fee discounts that may be appropriate for secondary processing.

The technologies necessary to manage the waste to avoid the landfilling of unprocessed waste are interrelated. If there is more waste than the region's resource recovery facilities can process, the alternative to avoid landfilling will be to increase the variety of materials recycled and composted, or further reduce the amount of waste being generated. On the other hand, if insufficient markets exist to absorb all the materials separated for recycling, MSW composting and energy recovery facilities would be the hierarchical next step to reduce the amount of waste being landfilled.

Current information suggests that additional MSW composting capacity for 165,000 tons is needed for residuals from RDF facilities. By 1995 an additional 110,000 tons of MSW composting capacity is needed to handle increases in waste generation. These facilities would be in addition to the MSW composting capacity already planned for Scott/Carver counties, and represent opportunities for private sector involvement.

Legislation (Minn. Stat. 473.149) gives the Council responsibility for providing criteria to protect existing facilities from displacement, unless displacement is necessary to achieve waste management objectives. Using such criteria in reviewing proposals for additional facilities will help ensure that the value of additional competitive facilities is balanced with the need to protect public investments in existing facilities. The Council will support private initiatives that do not threaten the viability of existing facilities and will encourage the restructuring of the waste management system to manage public risk at the regional level.

## HAZARDOUS WASTE/PROBLEM MATERIALS OBJECTIVES

Legislation requires that county master plan revisions include a plan for managing household hazardous waste. The Council's position that planning should address all the waste generated expands that focus to include problem materials--those materials that cause problems for incineration, composting or disposal facilities or for the environment. The removal of both household hazardous waste and problem materials from the mixed waste stream should occur at every feasible opportunity. The management of these wastes should be a component of each materials recovery facility. At least one drop-off facility for handling these wastes should be available in any county that does not have a MRF. Since the legislation requires that counties implement their household hazardous waste plans by 1993, facilities should be in place and operating by Jan. 1 of that year. The objective for hazardous waste will be the eventual management of at least one percent of the MSW waste stream accomplished in 0.1 percent annual increments.

## LAND DISPOSAL LIMITS

Since a major focus of planning efforts is the abatement of landfills, the Council will use landfill abatement as a key indicator of system progress. Rather than set specific targets for how much waste will be managed by each technological alternative to landfills, the Council will monitor annually the amount of Metropolitan Area waste entering landfills and compare each year's results with those of previous years. With the exception of recycling objectives, most of which are set by the legislature, the region will not be required to achieve specific percentage goals by technology. Rather, as a result of the implementation of an integrated waste management system, the maximum amount of MSW the region will be expected to landfill is listed below. (This does not include landfill tonnages for demolition/construction, industrial waste, and ash which may be set in the future as more information about the management of these wastes becomes available.) The increase in tonnages after the year 2000 reflects uncertainty that recycling will increase beyond 50 percent and that specific alternatives to landfills can prudently be projected more than 10 years into the future. The Council will begin assessing progress toward these limits in the 1991 abatement progress report to the legislature.

MSW Land Disposal Limits (in tons)

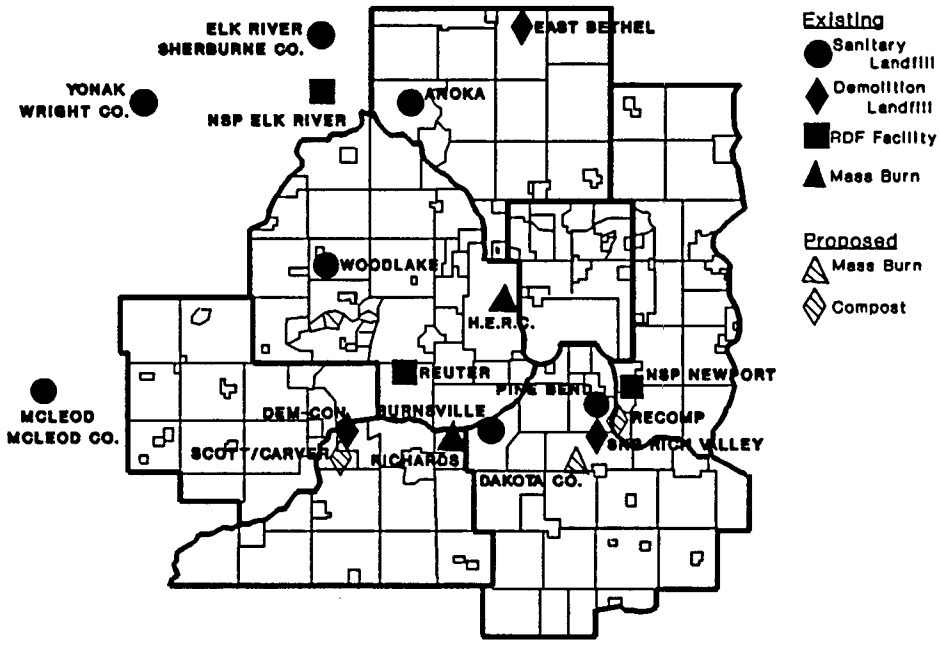
| 1990 | 1995 | 2000 | 2005 | 2010 |
|---|---|---|---|---|
| 1,437,000 | 606,000 | 459,000 | 621,000 | 796,000 |

Experience has shown that some waste generated in the Metropolitan Area is hauled from the area for disposal at landfills located in the next tier of counties. Costs to improve landfill management to comply with current MPCA landfill requirements encourage landfill operators to seek large volumes of waste to ensure the viability of their sites. Disposal of waste outside the Metropolitan Area is acceptable to the Council, provided that the landfills used meet legislative and MPCA requirements for environmental protection, and that sites are located within a distance that makes the combined cost of disposal and transportation acceptable to the counties that are likely to use them.

As proof of sufficient available landfill capacity to ensure the viability of the waste management system, the Council will require evidence of long-term (10 years or more) contracts with disposal facilities meeting MPCA and legislative standards. Further, the counties, in consultation with the Council and the Office of Waste Management, will be expected to design a workable process for siting and developing both an MSW landfill and an ash landfill in the region. The MSW landfill must be sited according to the Council's landfill capacity development schedule. The process must be reported to the LCWM by Dec. 1, 1991.

Figure 6 portrays the system of existing and proposed processing facilities and landfills.

Figure 6
EXISTING AND PROPOSED PROCESSING FACILITIES AND LANDFILL SITES




SOURCE: METROPOLITAN COUNCIL

# IMPLEMENTATION

A comprehensive network of facilities is needed to effectively manage the solid waste and recoverable materials generated or disposed of within the region. To understand the implementation challenge facing the counties, it is instructive to review current waste generation and planned facilities. Table 5 shows how the 1990 MSW and special waste stream was managed. Approximately 35 percent of the stream was recovered materials, 30 percent was recovered as energy and 35 percent was landfilled. The Council is committed to studying the industrial and demolition waste streams. Additional management requirements may be identified as a result of these studies.

**Table 5**

**CURRENT MANAGEMENT**

**1990 REPORTED REGIONAL MIXED MUNICIPAL SOLID WASTE AND SPECIAL WASTES (2,625,000 TONS)**

| MATERIALS RECOVERY | ENERGY RECOVERY | LANDFILLED |
|---|---|---|
| 35% | 30% | 35% |
| Recycling programs 716,000 tons | MSW incineration (excludes materials recovery & ash associated with waste-to-energy) 711,000 tons | Unprocessed waste 437,000 tons |
| Yard waste compost 146,000 tons | | Resource recovery rejects and residuals 303,000 tons |
| Resource recovery recycling 38,000 tons | Special waste incineration 75,000 tons | MSW incineration ash 182,000 tons |
| Special waste recycling 17,000 tons | | |

This picture of the current waste stream suggests that the primary focus of new management initiatives should address the 35 percent portion of the waste stream that is landfilled. Growth in the waste stream is an obvious factor that must also be taken into account. As basic system elements are added to increase the amount of processing, it will become increasingly important to ensure that the management of various portions of the stream is coordinated so that materials projected for recovery are not landfilled. Table 6 reiterates these management needs. All the management initiatives should reflect the hierarchical preference for reduction, recycling, composting and resource recovery, respectively.

The addition of the Dakota County mass-burn incinerator and the Scott and Carver Counties compost projects will add 287,850 tons of annual processing capacity by 1993. The amount of landfilled materials will decrease approximately 50 percent. At the same time, processing facility rejects and residuals will increase slightly. Ash will also increase.

**Table 6**

**FUTURE MANAGEMENT NEEDS**

1. DETERMINING HOW TO IMPROVE THE MANAGEMENT OF "UNDERMANAGED" WASTES
2. PLANNING HOW TO HANDLE WASTE STREAM GROWTH EXCEEDING THE CAPACITY OF EXISTING FACILITIES AND PROGRAMS.
3. DEVISING COMPLEMENTARY INITIATIVES TO MINIMIZE THE POTENTIAL THAT MATERIALS PROJECTED FOR RECOVERY WILL BE LANDFILLED.

## FACILITY DEVELOPMENT SCHEDULE TO 2010

The development schedule is designed to assure a management option other than landfilling for 100 percent of MSW and special waste generated by 2000 as well as secondary processing for a portion of the rejects and residuals from processing facilities. Additional secondary processing would be desirable, but is too dependent on performance capabilities of individual facilities to be scheduled now. Successful operation of scheduled facilities and the achievement of materials recovery goals should assure that the scheduled landfills will provide sufficient land disposal capacity to meet regional needs through 2010.

Specific facilities for industrial waste or demolition debris are not scheduled. When Council studies of these waste streams are completed, the development schedule may be amended to reflect management requirements for these substantial waste volumes.

Since this policy plan emphasizes regional cooperation with joint county implementation of programs and facilities, the development schedule does not prescribe specific locations for facilities other than the processing facilities planned as required by the 1985 policy plan but not yet implemented. The location decisions are most appropriately made by the counties, considering such factors as transportation, land use, and compatibility with existing system components.

After 2000, growth in the waste stream will require management choices among materials recovery, MSW composting capacity, incineration capacity, and/or additional landfilling. Projections and plans beyond 2000 are highly uncertain. No processing facilities are scheduled now for the waste that would exceed planned system capacity if generation continued at the forecasted rate between 2000 and 2010--a gap of 267,000 tons. Future revisions of the policy plan will revisit the issue of management alternatives and revise the development schedule based on more current information. The Council is required by statute to adopt procedures and criteria for making schedule revisions as well as standards and procedures for Council certification of need for land disposal capacity.

The schedule has two components: a listing of specific facility requirements for major facilities (Table 7) and capacity requirements for materials recovery (Table 8). Variations in waste generation, improvements in facility capabilities and other system changes will affect the actual facility capacity requirements needed in particular years. While the facility requirements indicate

capacities and dates, the implication of capacity requirements for materials recovery is just as critical for system development. This information provides flexibility for the counties to plan for the dramatic increase in materials recovery that is projected. Materials recovery volumes are projected to grow 82 percent from 1990 levels by 1995 and 147 percent by 2000. Current recycling programs will require fundamental changes to make the anticipated progress after 1990. With the information about capacity needs, counties can determine the mix of materials recovery programs to implement. The options should include the management of hazardous waste, special waste, yard waste, recyclables from fuel-producing plants and source separated recyclables (whether commingled or separated by type).

**Table 7**
**FACILITY DEVELOPMENT SCHEDULE**

MIXED MUNICIPAL SOLID WASTE COMPOST

| LOCATION | DATE | ANNUAL AMOUNT |
|---|---|---|
| Scott/Carver Counties | 1992 | 53,850 tons |
| Undetermined | 1995 | 110,150 tons |

RDF REJECT AND RESIDUAL COMPOST

| LOCATION | DATE | ANNUAL AMOUNT |
|---|---|---|
| Accessible to RDF Plants | 1995 | 165,000 tons |

INCINERATION

| LOCATION | DATE | ANNUAL AMOUNT |
|---|---|---|
| Dakota County | 1993 | 234,000 tons |

LANDFILL

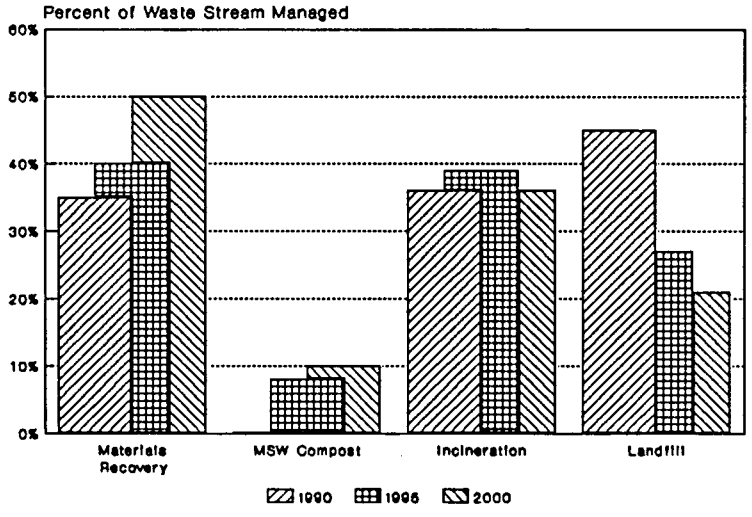
| LOCATION | DATE | TOTAL VOLUME |
|---|---|---|
| Undetermined | 1994 | 8,726 acre feet |
| Undetermined | 2000 | 10,000+ acre feet |

**Table 8**
**SCHEDULED CAPACITY FOR MATERIALS RECOVERY**

| YEAR | PERCENT OF GENERATION | CAPACITY |
|---|---|---|
| 1995 | 40% | 1,194,000 tons |
| 2000 | 50% | 1,617,000 tons |
| 2010 | 50% | 1,897,000 tons |

Figure 7 shows how the development schedule will influence waste management practices through 2000. Increased waste reduction and dramatic increases in materials recovery, coupled with the initiation of several MSW composting projects and an additional waste incinerator, will achieve substantial reductions in land disposal. Waste that is incinerated and becomes ash is reflected in both the incineration and the landfill strategies presented in this figure. Landfill management includes a 10 percent slippage through the system resulting from disposal of non-MSW materials, market problems for recovered materials, seasonal increases in waste volumes that exceed facility intake capacities, designation evasion and unanticipated processing facility difficulties. Together, these projections of dual or fallback management requirements add approximately 16 percent to the total amount of materials identified in this figure to be managed each year.

Figure 7
MANAGEMENT STRATEGIES




No MSW composting is projected during 1990.

SOURCE: METROPOLITAN COUNCIL

## Adjustment of the Facility Implementation Schedule

Although the facility development schedule will be revised every five years in conjunction with updates of the solid waste management policy plan, interim adjustments may be required. This is most likely to occur under the following conditions:

1. Waste generation varies substantially from forecasts;

2. Materials recovery goals are substantially exceeded or not achieved;

3. Significant amounts of processing or disposal capacity are decommissioned or added and the changes were not anticipated in the development schedule;

4. Scheduled facilities are not developed; or

5. Significant shifts occur between management of materials through MSW facilities or independently as demolition debris, industrial waste or reclamation programs.

When any of these occurrences cumulatively are determined by the Council to result in too little materials recovery or processing capacity to manage the volume of waste it projects in 2000, it will revise the schedule. If the cumulative implications indicate that surplus capacity is scheduled and the surplus exceeds by 50 percent the annual capacity of the scheduled facility with the least amount of capacity, the Council will also revise the schedule. The landfill development portion of the schedule will be revised whenever an unscheduled addition of capacity exceeding 3,000 acre-feet becomes available to the region. Revisions of the schedule will emphasize materials recovery to the maximum extent that is economically and technically conceivable within a period of up to five years. Processing for composting and energy recovery will be emphasized next in order, respectively. Land disposal will be scheduled for needs anticipated for a 20-year period.

When conditions are identified that may warrant a revision of the development schedule, Council staff will discuss the need and alternative management options with private and public entities that have relevant implementation capabilities or responsibilities. A staff report will be prepared that identifies both the indicators that a schedule revision is necessary and recommendations to revise the schedule consistent with the waste management hierarchy. A public hearing will be conducted by the Council to obtain input on the need to revise the schedule and the options for management that should be scheduled.

The likely outcome of these procedures and criteria for development schedule revision is that the schedule will be revised when facilities are approved that vary significantly from the types or capacities projected in the schedule. The Council's biannual aerial photo survey of landfill capacity will be used as an opportunity to evaluate whether schedule revisions are necessary. There may also be other occasions for adjustments such as in response to better strategies to manage hazardous or potentially hazardous materials.

## Landfill Closure Schedule

Landfill closure cannot be accurately predicted due to the need to achieve permit specified contours that are critical for groundwater protection purposes after closure. Disposal contracts, the success of recycling and recovery programs and shifts between MSW and non-MSW disposal options will significantly affect the rates of capacity exhaustion. Nevertheless, communities deserve to know how long they can expect a landfill land use to continue. Consequently, the Council projects the following closure schedule for landfills in the Metropolitan Area based on current or recent intake rates or agreements with local communities. The schedule is not intended as an enforcement measure to ensure the closure of any landfill by a particular year.

| | |
|---|---|
| Anoka | 1994 |
| Burnsville | 1994 |
| Pine Bend | 2001 |
| Wood Lake | 1996 |

At least two anomalies regarding this closure schedule should be noted. The Burnsville Landfill is currently planning a landfill expansion that it expects will extend its capacity beyond 2000. Council staff currently project that future disposal needs will exhaust all the capacity in the region by 1995. Actually, the landfills control their own intake rates through fees and contracts. Also, the addition of other scheduled or unscheduled disposal capacity combined with increased use of non-MSW disposal facilities or exportation outside the region may extend capacity for particular facilities.

## Post-Closure Management and Disposition

The Council supports the rules adopted by the Minnesota Pollution Control Agency governing closure and post-closure management. Landfills must demonstrate during a five-year closure period that conditions have stabilized so that the cover, monitoring and leachate collection systems are installed and operating properly. A 20-year post-closure period is specified during which breeches or settling of the cover must be repaired and the monitoring system maintained by the landfill owner. Subsequent to the post-closure period, inspections by the agency are required at five-year intervals with any necessary contingency action at public expense if the landfill is no longer owned by or subject to the financial responsibility of the entity that exercised control during operations. The post-closure period can be extended by the agency if conditions indicate that environmental quality is threatened by conditions at the landfill.

Land disposal facilities require periodic monitoring and attention for many years into the future. They can be used as open space or recreational facilities provided that the cover over the landfill and any monitoring and treatment structures that may be required are protected by erosion controls and fencing or shelters to prevent unauthorized access. Disposal facilities for MSW incinerator ash provide stable conditions to adequately support building foundations in the future.

# FINANCING THE SYSTEM PLAN

## NEW FACILITY COSTS

The management of solid waste has changed substantially since 1985. The region has shifted from landfilling as the primary option for solid waste management to a diversified system matching appropriate waste management technology with various components of the waste stream. A number of major processing facilities were built in the latter part of the last decade and a number of additional facilities will be needed in the first half of the 1990s to complete the system. Substantial capital costs have occurred in the last few years and will continue to occur until the mid-1990s.

A summary of the estimated capital cost of major facilities listed in the system plan for the period 1986-2000 is presented in Table 9. It shows that approximately $595 million will be spent on developing and constructing new solid waste management facilities in the 15-year period. During that time, the Metropolitan Area will implement an entirely different way of handling waste than was practiced previously. Within the last four years, over $195 million has been spent on major facilities. An estimated $400 million will be needed in the period 1990-2000.

**Table 9**
**ESTIMATED CAPITAL COST OF MAJOR FACILITIES**
**(1990 Dollars)**

| Year | | Estimated Cost of Facilities | Facilities |
|---|---|---|---|
| 1986-1989 | $ | 195,000,000 | RDF Plants, MSW Incinerator, Transfer Station |
| 1990 | | 11,750,000 | Materials Recovery, Transfer Station |
| 1991 | | 12,500,000 | Resource Recovery, Transfer Station |
| 1992 | | 63,604,000 | MSW Composting, Landfill |
| 1993 | | 150,885,000 | Materials Recovery, MSW Incinerator, Landfill |
| 1994 | | 32,133,000 | Materials Recovery, Landfill |
| 1995 | | 75,734,000 | Materials Recovery, MSW & Residual Composting |
| 1996 | | 0 | |
| 1997 | | 0 | |
| 1998 | | 0 | |
| 1999 | | 0 | |
| 2000 | | 53,210,000 | Materials Recovery, Landfill |
| Total 1986-2000 | $ | 594,816,000 | |

In addition to the $595 million for major facilities, there are numerous smaller local facilities that will be built, and upgrades and expansions will occur to existing facilities.

Cost estimates are for land, predesign, design, construction, equipment, and permitting and approvals. Costs do not include interest expense, operating expenses or funds for contingency, closure or post-closure reserves. The table does not include costs for industrial and demolition waste.

Some of the estimates are based on detailed project analyses and were obtained from published reports. An example is the estimate based on the draft environmental impact statement for the Dakota County MSW incinerator. A number of the estimates are based on cost data from similar local or nonlocal projects. In those instances, the cost estimate will be subject to a larger margin of error due to variations between sites, different service levels, and changing technology. A number of estimates are based on the average per unit cost of similar projects (from published surveys).

During the period 1986-1989, a number of major solid waste facilities were constructed. Approximately $260 million in bonds were issued by local governments to finance the facilities. Major facilities built in the 1986-1989 period include:

Elk River RDF facility (owned by Northern States Power)
Hennepin Energy Resource Corporation mass-burn facility (owned by Ogden-Martin)
Ramsey/Washington County RDF facility (owned by Northern States Power)
Hennepin County transfer station
Reuter resource recovery facility (owned Reuter, Inc.)

In addition, a number of smaller publicly and privately owned and operated facilities were built and began operation in the last five years. These include composting operations, recycling centers, and transfer stations.

Table 9 shows substantial expenditures for new facilities in the 1990-1995 period when materials recovery facilities, an incinerator, landfills and composting facilities are constructed. No major new facilities are needed during the middle part of the decade. At the end of the decade, a major expansion of capacity is needed for materials recovery of commingled recyclables and a large regional landfill is scheduled for site selection and development.

## FINANCING NEW FACILITIES - CAPITAL COSTS

Debt service costs for facilities built in the 1986-2000 period will exceed $1.6 billion and will be repaid over the period 1986-2020. Annual debt service was about $16.5 million in 1988. It will rise to about $28.8 million in 1992, and continue to increase to a peak of about $81.5 million in 2001. It will then gradually decrease for facilities built in 1986-2000. Debt service cost for facilities built after the year 2000 to accommodate growth in the waste stream will likely cause total system costs to increase in the period 2000-2010.

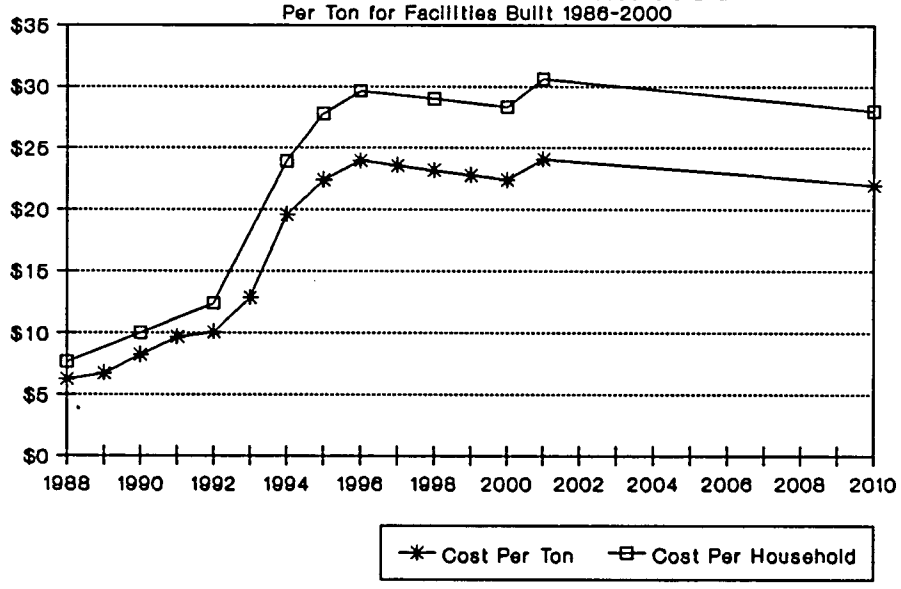
Annual capital cost for facilities increases steadily from about $8.23 per ton for MSW waste in 1990, to a high of $24.83 per ton in 2001. Debt service costs will decline and will be completely

paid off by approximately 2020 for projects listed in the system plan. Capital costs include principal and interest on facilities but do not include operating or collection costs for waste management.

In an effort to put the capital costs in perspective, estimates have been made of the average household annual cost for debt service on new facilities listed in Table 9. The per household annual cost is estimated to be $10 in 1990, increase to $30.33 in 1996, peak at $31.58 in 2001 and decline through the period 2002-2020. All costs and estimates are in 1990 dollars and it is assumed that households are charged for solid waste services based on weight and volume. It is estimated that households will pay approximately 39 percent of the cost of debt service for MSW processing facilities based on weight and volume pricing. The balance of the costs for processing is paid by commercial and industrial generators. The per household and per ton cost estimates are graphically presented in Figure 8.

There are a number of options for financing new facilities. The most common means of financing large facilities has been through revenue bonds (tax-exempt debt) issued by county governments. Smaller private facilities have commonly been financed through private placement of debt (taxable debt). In each case, user fees and revenues from the sale of energy, fuel products and recyclables are the primary sources of revenue for debt retirement. The pledge of revenues from the operating facility is the most common source of security for the bonds. Financing options should include tax-exempt debt to provide low interest cost for facilities.

Figure 8
SOLID WASTE FACILITY COSTS
Estimated Debt Service Cost Per Household and Per Ton for Facilities Built 1986-2000




Estimate for principal and interest expense and does not include processing or collection costs.

# APPENDICES

# APPENDIX A
# DEFINITIONS

Terms used in this plan are intended to have meanings consistent with state statutes. Any words not defined in this appendix should be understood to have a meaning consistent with state law.

| | |
|---|---|
| Acre-foot | A volume one foot in depth over an area of one acre. This volume is equal to 1,613 cubic yards. |
| Backyard composting | Composting of yard wastes, garden wastes and/or vegetative kitchen wastes from a single family or household, apartment building, or a single commercial office on the property where the waste is generated. |
| Buffer area | An area around a landfill site that separates it from surrounding land uses and is at least equal in size to the landfill site (an 80 to 250 acre range is specified). This area should provide visual and sound protection to existing and potential uses outside the buffer. Other potential impacts of landfills including leachate, landfill gas, odor, litter and dust impacts should be controlled within the landfill site. The buffer should provide access to the site and may contain berms, barriers and plantings desirable for screening surrounding land uses from unacceptable views and sounds associated with landfill operations. Existing private land uses may continue to occur within the buffer. New activities, including those ancillary to landfill operations such as storage of equipment and materials as well as excavation, should be allowed only if these land uses are consistent with local zoning and buffer effectiveness criteria regulating noise and visual impacts. |
| Collection | The aggregation of waste from the place at which it is generated and includes all activities up to the time the waste is delivered to a waste facility. (Minn. Stat., sec. 115A.03, subd. 5) |
| Commercial solid waste | Includes solid waste generated by stores, offices, businesses, restaurants, warehouses and other nonmanufacturing activities, and nonprocess wastes such as office and packing wastes generated at industrial facilities. |
| Commingled recycling | The process of mixing selected source separated recyclables such as glass containers, mixed cans and plastic in a common deposit container. |
| Co-composting | The composting of mixed municipal solid waste with a nutrient source or bulking agent. (Minn. Rules, sec. 7035.0300, subp. 15) |
| Composting | The controlled microbial degradation of organic waste to yield a humus-like product. (Minn. Rules, sec. 7035.0300, subp. 20) |

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| Curbside collection | Collection, at the point of generation, of recyclables or compostable materials. |
| Construction debris | Waste building materials, packaging and rubble resulting from construction, remodeling, repair and demolition of buildings and roads. (Minn. Stat., sec. 115A.03, subd. 7) -- Also referred to in the policy plan as construction and demolition waste. |
| Hazardous waste | Any refuse, sludge, or other waste material or combinations of refuse, sludge or other waste materials or discarded material, or a combination of refuse or discarded materials, in solid, semisolid, liquid, or contained gaseous form, which because of the quantity, concentration, or chemical, physical, or infectious characteristics may a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or that cannot be handled by routine waste management techniques because it b) poses a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Categories of hazardous waste materials include but are not limited to explosives, flammables, oxidizers, poisons, irritants and corrosives. Hazardous waste does not include source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended. (Minn. Stat., sec. 116.06, subd. 13) |
| Household hazardous waste | Waste generated from household activity that exhibits the characteristics of or that is listed as hazardous waste under agency rules, but does not include waste from commercial activities that is generated, stored, or present in a household. (Minn. Stat., sec. 115A.96, subd. 1b) |
| Industrial solid waste | Solid waste resulting from industrial processes and manufacturing. It does not include hazardous wastes. |
| Land disposal | Depositing of waste materials in a land disposal facility. |
| Land disposal facility | A waste facility permitted by the Minnesota Pollution Control Agency that is designed or operated for the purpose of disposing of waste on or in the land. |
| Land disposal site capacity | The volume of space at a land disposal facility that is permitted by the MPCA to be filled. |
| Leachate | Liquid that has percolated through solid waste and has extracted, dissolved, or suspended materials from it. (Minn. Rules, sec. 7035.0300, subp. 56) |
| Local governmental unit | Cities, towns and counties. (Minn. Stat., sec. 115A.03, subd. 17) |

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| Major appliances | Defined by statute as clothes washers and dryers, dishwashers, hot water heaters, residential furnaces, garbage disposals, trash compactors, conventional and microwave ovens, ranges and stoves, air conditioners, dehumidifiers, refrigerators and freezers. (Minn. Stat., sec. 115A.03, subd. 17a) |
| Mass-burn incinerator | A solid waste combustion facility that is designed to burn unprocessed mixed municipal waste. It might also burn certain other wastes such as rejects and residuals from other waste processing technologies. |
| Materials recovery facility (MRF) | Facility designed for centralized sorting, processing, and/or grading of collected recyclable materials for marketing. |
| Mixed municipal solid waste (MSW) | Garbage, refuse and other solid waste from residential, commercial, industrial and community activities that the generator of the waste aggregates for collection, but does not include auto hulks, street sweepings, ash, construction debris, mining waste, sludges, tree and agricultural wastes, tires, lead acid batteries, used oil and other materials collected, processed and disposed of as separate waste streams. (Minn. Stat., sec. 115A.03, subd. 21) |
| Organized collection | A system for collecting solid waste in which a specified collector or an organization of collectors is authorized to collect from a defined geographic service area or areas some or all of the solid waste that is released by generators for collection. (Minn. Stat., sec. 115A.94, subd. 1) |
| Other inorganics | Noncombustible, nonmetallic material such as rocks and ceramics not otherwise categorized. |
| Other nonferrous | Metals other than iron, such as copper, brass, zinc and lead. |
| Other organics | Combustible and compostable wastes not otherwise categorized. They include food waste, plastics, rubber, textiles, leather and paper that is not repulpable, as well as small quantities of other materials so mixed as to not be recyclable. |
| Participation rate | The percent of eligible waste generators who participate in a given abatement program within a specified time frame and within a specific geographic area. |
| Problem material | Material that, when it is processed or disposed of with mixed municipal solid waste, contributes to one of the following results: a) the release of a hazardous substance, or pollutant or contaminant; b) pollution of water; c) air pollution; or d) a significant threat to the safe or efficient operation of a solid waste processing facility. The four previously stated conditions are further defined in Minn. Stat., sec. 115A.03, subd. 24a. |

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| Processed waste | Waste that has been treated after collection and before disposal. Processing includes, but is not limited to, reduction,...separation,... resource recovery, physical, chemical, or biological modification.... (Minn. Stat., sec. 115A.03, subd. 25 and Minn. Stat., sec. 473.848, subd. 5) |
| Processible waste | Waste materials that can be recycled or otherwise reclaimed for their material or fuel value. Waste materials that cannot be recycled or reclaimed because of emergency situations will not be considered processible waste. |
| Recovery rate | The percent of material identified and available for recycling that is actually recovered through a specific abatement program. |
| Recyclable Materials | Materials that are separated from mixed municipal solid waste for the purpose of recycling, including paper, glass, plastics, metals, automobile oil, and batteries. Refuse derived fuel or other material that is destroyed by incineration is not a recyclable material. (Minn. Stat., sec. 115A.03, subd. 25a) |
| Refuse-derived fuel | The fraction of processed municipal waste that is shredded and can be used as fuel in a boiler; it consists of lighter weight materials such as paper products, with most metals, glass, and other non-combustible materials removed. |
| Residuals | Waste materials left after recovery of recyclables and/or the physical, chemical or biological processing of wastes. |
| Resource recovery | The reclamation for sale, use, or reuse of materials, substances, energy, or other products contained within or derived from waste. (Minn. Stat., sec. 115A.03, subd. 27) |
| Resource recovery facility | A waste facility established and used primarily for resource recovery, including related and appurtenant facilities such as transmission facilities and transfer stations primarily serving the resource recovery facility. (Minn. Stat., sec. 115A.03, subd. 28) |
| Secondary materials | The marketable or usable products derived from solid or hazardous waste through processing or separation. |
| Solid waste | Garbage, refuse and other discarded solid materials. It includes solid waste materials resulting from industrial, commercial and agricultural operations, and from community activities. Solid waste does not include animal waste used as fertilizer; earthen fill, boulders, rock and other materials normally handled in construction operations; solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents; dissolved materials in irrigation return flows; or other common water pollutants. (Minn. Stat., sec. 116.06, subd. 10) |

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| Solid waste management | The systematic administration of activities that provide for the collection, separation, storage, transportation, transfer, processing, treatment and disposal of solid waste. |
| Source separation | Separation of recyclable or compostable materials by the waste generator prior to collection. |
| Special wastes | Nonhazardous wastes that have been prohibited from disposal with mixed municipal solid waste or have had other specific management requirements prescribed by statute. They include, but may not limited to, tires, lead acid batteries, major appliances, used oil and yard waste. |
| Storage | Containment of solid or hazardous waste, in an approved manner, after generation and before collection, for ultimate recovery or disposal. |
| Transfer station | An intermediate waste facility in which waste collected from any source is temporarily deposited to await transportation to another waste facility. (Minn. Stat., sec. 115A.03, subd. 33) |
| Unprocessed mixed municipal solid waste | Mixed municipal solid waste which has not been treated (processed) after collection and before disposal. |
| Unprocessible waste | Waste materials that cannot be recycled or otherwise reclaimed for their material or fuel value in an economically feasible and environmentally sound manner. |
| Waste flow designation | A requirement by a waste management district or county that all or any portion of the mixed municipal solid waste that is generated within its boundaries or any service area thereof be delivered to a processing or disposal facility identified by the district or county. (Minn. Stat., sec. 115A.81, subd. 2) |
| Waste district | A geographic area extending into two or more counties in which the management of solid waste is vested in a special district established pursuant to provisions of Minn. Stat., sec. 115A.62 to Minn. Stat., sec. 115A.72. |
| Waste facility | All property real or personal, including negative and positive easements and water and air rights, which is or may be needed or useful for the processing or disposal of waste, except property used for the collection of the waste and property used primarily for the manufacture of scrap metal or paper. Waste facility includes, but is not limited to, transfer stations, processing facilities, and disposal sites and facilities. (Minn. Stat., sec. 115A.03, subd. 35) |

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| Waste management | Activities that are intended to affect or control the generation of waste and activities which provide for or control the collection, processing and disposal of wastes. (Minn. Stat., sec. 115A.03, subd. 36) |
| Waste reduction | An activity that prevents generation of waste including reusing a product in its original form, increasing the life span of a product, reducing material used in production or packaging, or changing procurement, consumption, or waste generation habits to result in smaller quantities of waste generated. (Minn. Stat., sec. 115A.03, subd. 36a) |
| Yard waste | The garden wastes, leaves, lawn cuttings, weeds, and prunings generated at residential or commercial properties. (Minn. Rules, sec. 7035.0300, subp. 121) |

# APPENDIX B
# MONITORING

The Waste Management Act requires the metropolitan counties to prepare solid waste management master plans that implement the Council's policy plan. The master plans must describe specific projects and activities as well as information on specific financial commitments and implementation schedules. The counties are also required to submit annual reports to the Council on their solid waste management activities and on the sharing of wastes among facilities. The reports must describe the progress being made with implementation activities and provide the Council with information to update regional system data bases. The Council has the authority to establish content requirements for the master plans and annual reports and to review them for consistency with the Council's policies and programs. In turn, any solid waste management activity undertaken by a city or township must be consistent with the county's and Council's solid waste plans. Cities are expected to report their progress to the counties at regularly scheduled intervals determined by the counties.

The Waste Management Act also requires the Council to review various waste facility projects and proposals. The reviews serve as important devices to implement the policy plan and resolve potential policy conflicts. The Council must review:

1. Waste facility permit applications;

2. Waste supply and processing contracts;

3. Waste district proposals;

4. Waste flow designation proposals; and

5. Certificate of Need requests.

Appendix C describes specific requirements and criteria that will be used for the reviews.

# REVIEW PROCEDURES

The Council will review plans or proposals submitted for consistency with the policies and criteria contained in this policy plan. The following procedures will generally be followed when plans or proposals are received for review:

1. All known affected and interested parties will be notified.

2. If necessary, a public hearing on the proposal or document will be held.

3. Not less than 30 days before a public hearing, the Council will publish in a newspaper(s) having general circulation in the Metropolitan Area a notice stating the date, time and place of the hearing, and the place where the project information or document may be examined by interested people.

4. The hearing will be conducted according to Council procedures. All interested people will be permitted to present their views on the proposal or project.

5. The Council's Metropolitan Waste Management Advisory Committee will review the proposal and make recommendations to the Council.

6. The advisory committee will conclude its review in sufficient time to allow the recommendations to be discussed and considered by the appropriate commissions and standing committees of the Council.

7. To the extent appropriate, the Council will conduct its review concurrent with and complementary to reviews by other governmental jurisdictions.

In addition to these general procedures, other procedures and guidelines will be followed by the Council as required by the Waste Management Act.

# COUNTY PLAN REVIEWS AND PLAN CONTENT REQUIREMENTS

## COUNTY MASTER PLANS

Each metropolitan county must prepare and submit to the Council a revised solid waste master plan within nine months after the Council adopts its revised solid waste policy plan. If the Council disapproves a master plan, the county must submit a revised plan within 90 days for Council approval.

The Council will review county master plans in accordance with the requirements of Minn. Stat., sec. 473.175 and 473.823. Master plans must:

1. Conform to and implement the Council's solid waste policy plan;

2. Be consistent with other adopted chapters of the Council's *Metropolitan Development Investment Framework* and metropolitan system plans; and

3. Be compatible with each other.

The Council recognizes that in order to further develop a system that manages solid waste in an environmentally safe and cost efficient manner, intercounty cooperation is necessary. County plans must indicate how the county will proceed to develop, along with other counties, an increasingly regional approach to waste management.

### Plan Content Requirements

County master plans must be comprehensive and clearly describe county policies, plans and implementation strategies. The plans must describe specific projects and activities the county, cities and townships within the county, the private sector, and other counties will implement and the financial and other resource commitments to those projects and activities.

Minn. Stat. 473.803, subd. 1, requires that each county's solid waste master plan must include a household hazardous waste management plan that:

1. Includes a broad based public education component;

2. Includes a strategy for reduction of household hazardous waste; and

3. Addresses separation of household hazardous waste from mixed municipal solid waste and the collection, storage, and disposal of that waste.

The household hazardous waste management plan must be implemented by June 30, 1992.
Minn. Stat. 115A.551, subd. 6, requires that each county's solid waste management plan must include a plan for implementing the recycling goals established in legislation, along with mechanisms for providing financial incentives to solid waste generators to reduce the amount of waste generated and to separate recyclable materials from the waste stream.

At a minimum, the plans must provide the following information:

## Plan Preparation

1. A description of the plan preparation process, including the role of county advisory committees, the number of public meetings and hearings, and the role of other counties.

2. Evidence that other counties and all municipalities and townships within the county were consulted in the preparation of the plan.

3. A schedule for plan revisions.

## Description of Existing System

1. Solid waste generation characteristics, including the quantity and composition of waste by class of generator and patterns of waste generation (seasonal, geographic area).

2. The solid waste collection system in the county, including the type of services provided, hauling arrangements, and documentation that services provided include or will include waste, recycling, and yard waste collection services within the county charged by weight or volume.

3. Existing private, local, and county programs, functions, facilities and activities for solid waste reduction, recycling, household hazardous waste management, processing and land disposal in the county, including locations, use rates, operating characteristics and user charges for all waste management facilities. Remaining capacity estimates should be included for land disposal facilities.

4. A description of how the county will work jointly with other counties to plan regional facilities, assure delivery of waste to facilities in the regional system, and protect host communities and counties against environmental liability.

5. County and municipal enforcement authorities, including licensing requirements, ordinances, and permit requirements.

## Statement of Solid Waste Management Policies and Objectives

1. County policies for waste reduction, recycling, household hazardous waste management, waste processing and land disposal for 1990 through 2010.

2. Quantifiable county objectives (stated in tons annually through 1995 and in five-year increments thereafter through 2010) for recycling, waste processing and land disposal plus county plans for implementing waste reduction efforts.

## Description of Plans, Programs and Facilities for 1990 to 2010

1. Management alternatives (waste reduction, recycling, household hazardous waste management, processing, transfer stations, waste combustion and composting, and land disposal) from 1990 through 2010 including:

    a. The facility or program activity, including potential locations, volumes and types of wastes involved, service areas, estimated capital costs, rates and charges, annual operating and maintenance costs and annual gross revenues;
    b. Implementation procedures, including planning, operating, ownership, financing arrangements and marketing approach. For facilities that will be acquired by the county, provide the estimated cost, methods and time of acquisition, procedures for operation and maintenance, and a capital improvements program. For land disposal facilities, provide a description of how the county will evaluate and select sites to be developed and a schedule for when the disposal facility will be operational;
    c. The relationship of the facility or program activity to other management alternatives within the region;
    d. How existing facilities and services will or may be used to implement the regional plan;
    e. The economic effects of the program activity or facility on residential, commercial and industrial waste generators; and
    f. Contingency procedures for situations when the management technology or program cannot be implemented or is temporarily out of service, and when contingency procedures would be undertaken.

2. Public, private and intergovernmental coordination and support activities, including:

    a. Program for data collection and analysis of waste generation and characterization;
    b. Process for public comment and participation during planning and project development;
    c. Criteria and standards to protect comparable existing and planned private and public facilities from unwarranted displacement;
    d. Efforts to encourage private operation and/or ownership of facilities;
    e. Role of local governments in county programs;
    f. Intercounty project efforts; and
    g. Use of Council and county technical and financial assistance programs.

3. Public education and information programs.

4. Role of waste flow designations and how waste flow will be shifted from a county to a regional basis.

5. County and municipal enforcement activities, including monitoring programs, and licensing and permitting requirements and ordinances.

# IMPLEMENTATION MONITORING

## COUNTY ANNUAL REPORTS

The metropolitan counties are required to submit annual solid waste reports to the Council for approval (Minn. Stat., sec. 473.803, subd. 3). The reports must provide information on waste generation and management activities, as well as progress in achieving the waste management policies and objectives in the Council's policy plan. Information on progress in achieving the legislative requirements for a 35 percent recycling rate by 1993 and a 45 percent recycling rate by 1996 should also be included. To facilitate data collection and accommodate differences between county and Council fiscal years, the reports must be submitted biannually on March 15 (covering the previous July 1 through December 31) and August 15 (covering the previous January 1 through June 30). Each report must also contain data on the amount of waste generated in the county that was unprocessed, including an explanation of why it was unprocessed and strategies for reducing the amount unprocessed. (Minn. Stat. 473.848, subd. 2 and subd. 3). The Council will combine data from the two biannual reports into one annual report for submission to the LCWM.

The biannual reports must include information on the following:

1. Progress in implementing the Council's solid waste policy plan.

2. Current and proposed waste reduction, recycling, household hazardous waste, waste combustion and composting programs in the county, including facilities and services provided, reduction and recovery levels currently achieved, the types and tonnages of materials handled, and the implementing agencies or private companies involved.

3. Rates and charges in effect or proposed for solid waste facilities and collection services in the county, including a statement of the basis for such charges for county-owned or -operated facilities.

4. Current receiving rates at all solid waste facilities in the county (reported in tons).

5. General characteristics of solid waste received at waste facilities in the county.

6. Remaining capacity and estimated life of land disposal facilities in the county reported in acre feet or cubic yards.

7. Progress in meeting the landfilled tonnage limits set by the Council's policy plan.

8. Quantity of waste generated within the county that was not processed during the previous six months, the reasons why it was not processed, and strategies for reducing the amount of unprocessed MSW.

9. Staff and budget committed to implementing the county's solid waste program.

## LEGISLATIVE COMMISSION ON WASTE MANAGEMENT

The state Legislative Commission on Waste Management (LCWM) oversees implementation of the Waste Management Act, including the Metropolitan Area solid waste planning process. The Council will report to the LCWM (and other appropriate legislative committees designated by law) on November 1 of each year on progress in implementing the Council's policies and programs. The Council may recommend changes to the Waste Management Act based on experiences in policy plan implementation.

Three Metropolitan Council reports are due to the LCWM on November 1. They are:

1. Abatement progress report (due annually);

2. Landfill abatement fund expenditures and activities report (due annually); and

3. Recycling progress report (due annually on November 15).

A fourth report, the cost and finance report (part of the abatement progress report), is due biennially in even numbered years.

### Abatement Progress Report

The LCWM receives this report, which "must include an assessment of whether the objectives of the metropolitan abatement plan have been met and whether each county and each class of city within each county have achieved the objectives set for it in the Council's plan. The report must recommend any legislation that may be required to implement the plan. If in any year the Council reports that the objectives of the Council's abatement plan have not been met, the Council shall evaluate and report on the need to reassign governmental responsibilities among cities, counties, and metropolitan agencies to assure implementation and achievement of the metropolitan and local abatement plans and objectives." (Minn. Stat. 473.149, subd. 6)

Additional legislation passed in 1989 requires that the Council include in the abatement progress report "an accounting of the quantity of unprocessed waste transferred to disposal facilities, the reasons the waste was not processed, a strategy for reducing the amount of unprocessed waste, and progress made by counties to reduce the amount of unprocessed waste. The Council may adopt standards for determining when waste is unprocessible and procedures for expediting certification and reporting of unprocessed waste." (Minn. Stat. 473.848, subd.4)

### Landfill Abatement Fund Expenditures and Activities Report

This report is due to the LCWM, the Senate Finance Committee, and the House Appropriations Committee. It is required to describe "the activities for which money from the landfill abatement and contingency action funds has been spent during the previous fiscal year." (Minn. Stat. 473.846)

## Recycling Progress Report

For counties within the Metropolitan Area, the Council "shall monitor the progress of each county toward meeting the recycling goal...." (Minn. Stat. 115a.551, subd. 4) "If...the metropolitan council finds that a county will be unable to meet the recycling goal established...the council shall, after consideration of the reasons for the county's inability to meet the goal, recommend legislation for consideration by the LCWM to establish mandatory recycling standards and to authorize the Council to mandate appropriate solid waste management techniques designed to meet the standards in those counties that are unable to meet the goal." (Minn. Stat. 115A.551, subd. 5b)

This report is to be completed jointly with the Office of Waste Management.

## Cost and Finance Report

In each even numbered year, the abatement progress report must include a cost and finance report "on the operating, capital, and debt service costs of solid waste facilities in the Metropolitan Area; changes in the costs; the methods used to pay the costs; and the resultant allocation of costs among users of the facilities and the general public. The facility costs report must present the cost and financing analysis in the aggregate and broken down by county and by major facility." (Minn. Stat. 473.149, subd. 6)

## CONTINGENCY PROCEDURES

The Waste Management Act places implementation responsibility for solid waste management in the Metropolitan Area primarily on the metropolitan counties. In order to ensure that implementation occurs, the act includes a number of contingency measures that change county responsibilities if certain features of the law or the Council's policy plan are not implemented.

Assigned counties are responsible for selecting and acquiring land disposal sites within their boundaries. They must establish site selection authorities to choose the sites. If the site selection authority does not proceed in selecting the sites in accordance with the Council's land disposal development schedule and within the time frame allowed under the Waste Management Act, the Council is required to select the sites. If the counties fail to acquire the selected sites, the Council must act to site the landfills. (This process was suspended by the 1991 legislature and may be repealed on August 1, 1992, if a viable alternative siting process is developed by the counties by December 1, 1991.)

The counties must achieve, at a minimum, the recycling and processing objectives that have been set in legislation and the Council's policy plan. If the Council determines that the counties are not meeting these objectives, the Council will report to the legislature and submit legislation that reassigns waste management responsibilities to ensure implementation of Council and county solid waste plans and objectives.

The Council will determine if adequate progress on policy implementation is being made by periodically evaluating county and regional waste management activities. In determining whether sufficient progress has been made, the Council will evaluate:

1. Levels of landfill abatement achieved in the region as a whole;

2. Levels of recycling achieved in each county and within the region as a whole;

3. Adequacy of county and county-cooperative authorities, financial resources, and technical capabilities; and

4. Whether county financial and technical resources have been applied in a substantial effort to meet Council objectives.

# LANDFILL CERTIFICATION REPORTS

The Waste Management Act amendments of 1989 removed the restriction stating that Metropolitan Area landfills could no longer accept mixed municipal solid waste after January 1, 1990. Although the counties and the Council had worked to stop landfilling unprocessed waste, it is not possible to entirely preclude its disposal. Therefore, land disposal was allowed under two conditions. First, the waste could be certified as unprocessible by a metropolitan county that had not yet designated its waste to a resource recovery facility. Or, second, in counties with designation authority, land disposed waste could be certified as unprocessible by the operator of the resource recovery facility from which it was transferred. The operator must also certify that no other processing facility in the metropolitan area was capable of processing it.

Minn. Stat., sec. 473.848 requires the counties to submit a semi-annual certification report to the Council detailing the quantity of waste generated and not processed prior to disposal in the county during a six-month period; the reasons the waste was not processed; a strategy for development of techniques to ensure that the waste would be processed, including a timeline for implementation; and any progress the county has made in reducing the amount of unprocessed waste. If the Council does not approve of a county's report it is directed to negotiate with the county to develop and implement specific techniques to reduce the amount of unprocessed waste. If it disapproves three or more consecutive reports, the Council itself is directed to develop specific reduction techniques which the county would be required to implement by dates specified by the Council.

The law specifically identifies certain wastes as exempt from certification. The exempt wastes include: street sweepings, construction debris, foundry sand, and, mining wastes. Under this section of the law only those materials and others identified by the Council as unprocessible are exempt from certification. The statute enabled the Council to develop standards for determining when waste is unprocessible and procedures for expediting certification and reporting of unprocessed waste.

There were two major problems with implementation of this legislation as it was originally written. First, only those counties which had not implemented designation (Carver, Dakota and Scott) were required to negotiate techniques with the Council to reduce the amount of unprocessed waste and to implement them. Second, the definition of what constituted "processing" of waste included the storage or transfer of materials. Counties with facilities were claiming waste which they transferred directly to disposal facilities without running it through their processing lines as "processed by definition", which appeared to be counter to the purpose of the law.

The 1991 legislature revised the legislation to include all metropolitan counties in the negotiation/implementation process and it changed the definition of processing to require at least one process other than storage, exchange or transfer.

To evaluate certification reports the Council needs sufficient technical information concerning operations within a county to determine if the spirit of the law is being followed. To this end the Council has developed report requirements for the certification reports. The Council has also developed criteria for the evaluation of the reports. The following sections provide the report requirements and evaluation criteria for county certification reports.

## REPORT REQUIREMENTS

The counties are required to provide a report every six months to certify that wastes landfilled could not be processed. The dates that the Council is requiring the certification reports are March 15 and August 15 annually.

For the purpose of this report, in accordance with Minn. Stat. 473.848, subd. 1b, mixed municipal solid waste does not include street sweepings, construction debris, mining wastes, and foundry sand. The discussion of waste disposal within the county waste management system requires a definition of waste processing. To qualify as processing under Minn. Stat. 473.848, more than storage, exchange or transfer of the waste must occur.

The definition of processed that the Council will use for the collection and analysis of data for the certification reports will be as follows:

> "Processing" means the treatment of waste after collection and before disposal. Processing includes reduction, separation, resource recovery, and physical, chemical, or biological modification.

The reports must contain:

1. Data on monthly:
    a. Quantity of waste received at resource recovery facilities;
    b. Quantities of waste that are transferred from resource recovery facilities to landfills;
    c. Quantities of reject waste produced by processing wastes;
    d. Quantities of ash generated;
    e. Description of the wastes transferred to landfills. (e.g. paper sludge, unprocessible content at some percentage, etc.); and,
    f. Quantities of waste denied access to the resource recovery facilities and a description of the waste.
2. Assessment on a monthly basis of other regionally sponsored processing facilities' ability to process county waste that was landfilled.
3. Discussion of county plans to manage the wastes that are not processed and a time table for implementing those plans.
4. Actions taken by the county to reduce the waste landfilled and the improved landfill abatement achieved by those efforts compared to the previous report.

## CERTIFICATION EVALUATION AND APPROVAL

Monitoring progress toward abating the landfilling of wastes is a complex task. The Council must be assured that the waste landfilled is being monitored by the counties within which the waste is produced.

The Council will use the following criteria to evaluate the efforts of the counties to abate the disposal of wastes from landfills:

1. The quantity of waste disposed in landfills compared to the quantity disposed in the corresponding previous reporting periods.

2. Demonstrated efforts by the county to seek alternate processing capacity for waste that would otherwise be landfilled.

3. Commitment of the county to reduce the quantity of waste landfilled as demonstrated in county approved implementation plans to manage, by other methods, the wastes landfilled.

4. Demonstrated commitment of the counties to achieve the Council's landfill use limits as noted in the policy plan.

## COUNCIL APPROVAL/DISAPPROVAL

The Council will review the certification reports submitted by the counties and prepare a staff review of the reports. The staff review of the reports will evaluate the completeness of the reports and the degree to which the results describe the achievement of the counties with respect to the review criteria.

If the Council finds that the reports indicate that the counties are achieving the landfill abatement results required under law the reports will be approved. Any reports that do not demonstrate compliance with the criteria will be disapproved.

If a report is disapproved by the Council, the Council will instruct staff to work with the county(ies) to develop specific methods within specific time frames to achieve the landfill abatement objective. The Council's action shall direct staff to pursue specific programs that will allow the county to achieve the Council's landfill abatement objective.

# APPENDIX C
# REVIEW CRITERIA

The Waste Management Act (WMA) authorizes the Metropolitan Council to review and approve the following:

1. Waste Facility Permit Applications;

2. Waste Supply and Processing Contracts;

3. Waste District Proposals;

4. Waste Flow Designation Proposals; and

5. Certificates of Need

The WMA, which may be modified in 1992 to include a new siting plan, stipulates that the Council may be required to select scheduled candidate landfill sites if counties do not select them within 90 days of an adequacy determination on the corresponding environmental impact statements. The review criteria for the original siting process are included in this appendix. If necessary, review criteria will be modified to address changes in the siting process.

The WMA conveys authority to the Council to approve needed facility implementation without complying with local ordinances and requires it to consider buffer effectiveness criteria in its review of solid waste facility permits. These topics are addressed as waste facility permit criteria. They will be modified if changes in legislation occur.

The Council is designated in Environmental Review Program rules of the Minnesota Environmental Quality Board as the responsible governmental unit for environmental review of a variety of solid waste management facilities in the Metropolitan Area. Review criteria for this process are also included in this appendix.

The Council will use its review mechanisms as one method to implement its solid waste management policies. Prospective applicants are encouraged to contact the Council before preparing and submitting review requests. Advance discussion of the information necessary for a review can avoid unanticipated delays.

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# SOLID WASTE FACILITY PERMIT APPLICATIONS

Waste facilities include transfer stations, storage facilities, land disposal sites and waste processing facilities such as resource recovery facilities and materials recovery facilities that accept waste. They do not include facilities used exclusively to process scrap metal, paper, glass, or other materials separated from the mixed waste stream. A solid waste management facility consists of all property and easements that may be needed or useful for the processing or disposal of solid waste (Minn. Stat. 115A.03 Subd. 35).

Council approval is required before a solid waste facility in the Metropolitan Area can be issued a permit to operate by the MPCA. The Council has 60 days to reach its decision, unless a time extension is granted by the MPCA. In its review the Council can specify conditions to be incorporated by the agency's permit.

To obtain Council approval, permit applications for proposed solid waste facilities must be consistent with the criteria in this section of the guide chapter. The WMA requires the Council's plan for solid waste management to include criteria that address the following aspects of proposed waste facilities:

1. Waste management service impacts;
2. Capacity;
3. Processing techniques;
4. Location;
5. Environmental impacts;
6. Operations;
7. Competitive operation; and
8. Economic viability

Council approval may establish conditions necessary to satisfy the criteria (Minn. Stat., sec. 473.811, subd. 4a). Some criteria may be met in accordance with authority granted local units of government to establish ordinances affecting waste management. Local government conditions for waste disposal facilities must be reasonable and are subject to the approval of the Council. Barriers, buffer zones, operating time limitations, land use restrictions and closure timetables may be appropriate to address issues of appearance, operating hours, visual compatibility with adjacent property or development, general screening of operational areas, and capability to return sites to planned reuse after closure.

Counties may acquire and establish waste disposal or processing facilities without complying with local ordinances with Council approval according to statutory requirements (Minn. Stat., sec. 473.811, subd. 4a and Minn. Stat., sec. 473.823, subd. 5). Override of local ordinances is addressed in conjunction with the "location" criteria.

The Council is required to include in its plan a definition of and standards and criteria for buffer areas in relation to the inventory of candidate landfill sites. Buffer effectiveness criteria are included in the "environmental impacts" criteria.

## WASTE MANAGEMENT SERVICE IMPACTS

In the Metropolitan Area, waste management services are often provided by the private sector. Solid waste is collected primarily by private licensed haulers who have contracts with individuals, municipalities and industries. Landfills are operated by large national waste management companies and by small local businesses. The WMA encourages provision of services by the private sector.

The orderly transition from land disposal to waste reduction and resource recovery requires that solid waste services continue to be provided efficiently and economically throughout the region. To assure consistency with the regional solid waste management policy plan it may be necessary to develop solid waste services in phases. Waste materials, volumes and supply areas may have to be coordinated to assure effective and efficient management. The WMA provides the Council authority to place: (1) conditions or restrictions regarding the type, character and quantities of waste to be processed at a waste facility that is used primarily for resource recovery; and (2) restrictions on the geographic territory from which a waste facility used primarily for resource recovery may draw its waste (Minn. Stat., sec. 473.823, subd. 3).

### *Objectives*

1a. Ensure the efficient and orderly transition from land disposal to waste reduction and resource recovery.

1b. Ensure that adequate solid waste supplies are available for development of solid waste facilities.

1c. Ensure that solid waste supply expectations do not stifle private initiative to manage materials separated from the mixed solid waste streams.

### *Criteria*

1a. Proposed waste facility service areas shall be consistent with the materials recovery, resource recovery and land disposal facility development schedules of the solid waste management policy plan. Waste supply projections for facility service areas shall be based on estimates that reflect the potential combined effects of existing and proposed facilities approved by the Council or other facilities identified in a Council development schedule. Facility operation may be delayed and/or phased in to reflect the development schedule. Restrictions may be placed on the type, character, quantities and geographic territory of waste supplies for resource recovery facilities.

1b. The quantity and composition of solid waste within the proposed waste facility's service area shall be sufficient to enable economically viable operation of the facility.

1c. Consideration must be given, in estimating waste flows to publicly supported facilities, to the right of generators to privately manage recoverable materials separately from the mixed waste stream.

## CAPACITY

Waste facility capacity impacts waste management service conditions in the region. Service costs, site operations and alternative management methods are affected by the amount and type of operating system capacity.

Facility capacities that exceed the requirements of the materials recovery, resource recovery and land disposal facility development schedules may prevent or constrain the development of other preferred waste management methods. For instance, excess land disposal capacity may perpetuate commitment to a less preferred management practice. Limitations on maximum capacity will, therefore, be necessary.

Waste facility capacity must ensure continuous, efficient service. Some degree of redundancy is needed to ensure the facility can handle seasonal and other variations in waste flow. In addition, waste processing facilities must have sufficient capacity to meet the requirements of energy and/or materials market.

### *Objectives*

2a. Ensure that waste facility capacities meet efficient, economical service requirements.

2b. Ensure that waste facility capacities promote adaptable systems of waste management and orderly transition to waste reduction and resource recovery.

### *Criteria*

2a. Proposed waste facility capacities shall be consistent with the materials recovery, resource recovery and land disposal facility development schedules. Limits may be placed on facility capacities in accordance with the timing and location requirements of the development schedules. (For purpose of this criterion, "capacities" refers to facility operating design capacity.)

2b. Proposed waste facility capacities should not exceed the projected market demand for secondary materials and/or energy, nor should they exceed the projected waste supply from the areas they serve. Limits may be placed on capacities in order to coordinate facility development with projected market demand and/or supplies.

## PROCESSING TECHNIQUES

Major waste facilities should provide routine management of continually generated solid waste. These facilities must be reliable. They must operate with minimum risk to energy and recovered materials markets and to solid waste generators and haulers. Some waste processing techniques have had recurring problems that have led to increased costs and inconsistent service.

These include:

- Damage to system components or unscheduled shutdowns resulting from adaption of equipment designed for materials other than solid waste;
- Unpredicted wear resulting in frequent replacement and maintenance of system components; and
- Failure to attain the same efficiency and reliability at a commercial scale that was achieved on a pilot scale.

Risk and reliability may be evaluated by considering the demonstrated commercial success of proposed solid waste processing techniques. Proposed projects should document successful precedents in terms of facility scale, waste composition and volume, proximity to waste supplies, and product market. Over time, experimental waste technologies may develop which could complement more familiar technologies. Initial experimental development should focus on small-scale or demonstration-type projects.

### *Objectives*

3a. Promote the use of technically reliable and efficient processing techniques. Identify and resolve problems that may reduce processing efficiency and reliability.

3b. Allow for the development of new and/or experimental waste processing techniques to recover energy or materials.

### *Criteria*

3a. Proposed processing facilities shall use materials handling and processing techniques that are known to provide continuous, reliable and effective service, while recovering energy and/or materials that consistently meet market specifications.

3b. Facilities using new or experimental waste processing techniques shall be tested on a small-scale basis only. (A processing facility will be considered experimental if its history of commercial effectiveness and workability is undocumented.)

## LOCATION

The location of solid waste management facilities will be influenced by several factors, including availability of suitable land, proximity to markets for energy or secondary materials, proximity to major highways and sources of waste, and availability of adequate public utilities such as electric power, water supply and wastewater treatment services. Proposed sites should not create adverse social, economic or aesthetic impacts on nearby areas. Existing technology and transportation costs will restrict some waste facilities to locations near potential markets and waste generators.

Proposed waste facility locations will have certain land use limitations. One measure of a location's acceptability is its degree of consistency with public land use policy and values. Metropolitan Development Guide policy and local comprehensive plans represent a consensus of public attitudes and values, since they have been developed with citizen participation and adopted through the public hearing process. To the extent practical, conflicts with planned land uses like agricultural preserves and parks will be avoided. In some cases, it may be desirable to locate waste facilities adjacent to or

as part of the operation of other metropolitan facilities, such as wastewater treatment plants. Once closed, waste sites may be appropriate locations for other planned uses. For example, park development may be possible at closed waste facilities.

Integrating facility site development with locally planned land uses, however, may be difficult. Recent Metropolitan Area siting efforts have demonstrated the difficulty in finding locally acceptable locations for waste facilities. Waste facilities rarely meet local land use planning requirements. Override of local vetoes may be necessary in some circumstances. The Waste Management Act gives counties the authority to override local vetoes to establish waste processing and land disposal facilities (Minn. Stat., sec. 473.811, subd. 4a and sec. 473.823, subd. 5). The Council must approve the override.

Landfills arouse particularly strong local opposition because their potential size, height, and contamination risks could affect many people. Legislation and court decisions across the country since 1980 have established a balancing doctrine that state or regional needs may preempt host community controls provided that state regulation is comprehensive and policy intent is clear. Thus state regulation and regional oversight should set the context for allowable activities in sites and buffer areas in conjunction with appropriate local regulation, zoning, conditional use permits and fees to reimburse direct costs of local governments . Buffer area property owners currently retain their rights to maintain existing land uses even though their rights to "develop" are limited by a requirement for Council and county approval. An appeals process of zoning override should discourage local communities from using zoning authority to unreasonably delay, discourage or decline controversial waste management projects.

### *Objectives*

4a. Assure that proposed waste facilities are located in areas compatible, to the extent possible, with local land use plans, and existing and planned metropolitan systems and utilities.

4b. Assure that local land use concerns are considered in reviewing facility proposals.

4c. Assure that land disposal facilities do not visually dominate the surrounding community to an unacceptable degree.

4d. Allow implementation of needed waste management system components that comply with reasonable local ordinances.

4e. Ensure that necessary waste management system components are not prohibited by unreasonable local ordinances and land use controls.

### *Criteria*

4a. Solid waste facilities should be compatible, to the extent possible, with Council land use policies and county and local comprehensive land use plans. Lack of compatibility with land use policies and plans shall not preclude Council approval of a waste facility, if waste management policy considerations must take precedence.

4b. Waste facility sites should be compatible with existing and planned metropolitan systems.

4c. Waste facilities shall maintain proper site appearance and reasonable times of operation. To the extent possible, waste facility sites should be visually compatible with adjacent property or development. Operational areas of solid waste facilities should generally be screened from public view. Barriers, buffer zones and operating time limitations may be required to reduce nuisance problems.

4d. Waste facility sites shall be accessible, during periods waste will be accepted, by roadways with weight bearing and vehicle carrying capacity adequate to accommodate facility generated traffic. Adequate weight bearing capacity for large trucks is nine-ton or better. Adequate traffic flow capacity is defined as service level D or better. This level must be achievable at the site entrance intersection and for through traffic in the immediate vicinity of the site entrance during the peak traffic period for waste disposal activity. Access to the site must not depend on the use of local and collector streets through residential areas.

4e. A proposed waste facility site should be capable, to the extent possible, of being returned to a use anticipated in the plan of a metropolitan agency, county or local unit of government after closure of the facility. Land-use restrictions and closure dates may be placed on the facility compatible with the development of future uses for the site.

4f. The large size and potential height of land disposal facilities should be evaluated to determine whether they would excessively dominate the surrounding landscape. The percentage of residences that would have direct line of sight exposure within five kilometers of major facilities will be predicted by using the Minnesota Land Management Information System, if possible.

4g. Standards for local landfill zoning and landfill related fees:

a. The Metropolitan Council will only approve the override of local zoning if it determines that the following conditions have been met and that based on thorough study and public hearing, the need for a facility should take precedence over unrestricted local controls:

1) A facility permit has been or will be issued by the MPCA;
2) The facility is consistent with the Council and county solid waste management plans; and
3) A local government has denied the establishment or operation of the facility.

b. Denial, for purposes of override consideration, will have the following meaning:

a local land use determination (occurring after a potential landfill site has been identified, or in response to a formal application or plan requesting local governmental authorization to develop a solid waste

facility) which directly prohibits the use of identified property for the proposed facility (e.g. conditional or special use permit denial) or through indirect measures (fees, excessive or unreasonable conditions and restrictions, comprehensive plan amendments, excavation plan restrictions etc.) effectively prevents the economically feasible development and operation of the facility.

Examples of indirect measures that, if deemed excessive, constitute a denial include the following:

1) Fees required by the site community that will not reimburse direct costs appropriate to the local jurisdiction and exceed any specific statutory authorization; and
2) Restrictions placed on the site or applicable buffer area that do not apply to other properties in the same zoning classification.

c. In a decision to override local zoning, the Council shall conduct at least one public hearing in the affected community and consider at least the following matters:

1) The risk and effect of the proposed facility on local residents, units of government, and local public health, safety, and welfare, and the degree to which the risk or effect may be mitigated;
2) The consistency of the proposed facility with, and its effect on, existing and planned local land use and development; local laws, ordinances, and permits; and local public facilities and services;
3) The adverse effects of the facility on agriculture and natural resources and opportunities to mitigate or eliminate such adverse effects by additional stipulations, conditions and requirements respecting the design and operation of the proposed facility at the proposed site;
4) The need for the proposed facility and the availability of alternative sites;
5) The consistency of the proposed facility with the county master plan adopted pursuant to Minn. Stat. 473.803 and the Council's policy plan adopted pursuant to Minn. Stat. 473.149; and
6) Transportation facilities and distance to points of waste generation.

d. The public hearing will focus attention on the review considerations listed above and seek public comment on appropriate conditions and restrictions governing the operation of the facility to minimize adverse impacts.

e. A decision to override will specify the conditions approved for local imposition or enforcement respecting the construction, inspection, monitoring and maintenance of the facility. These conditions may be added to or modified in the future at the Council's discretion.

## ENVIRONMENTAL IMPACTS

Proposed solid waste facilities must be reviewed according to criteria that provide for protection of public health and environmental resources. This protection requires care in selecting a waste facility's location, design, types of materials accepted, methods of operation and post-closure care.

Shifting to more waste reduction and resource recovery and less land disposal should result in a net improvement to the region's environment as potentially harmful and space consuming wastes are captured for productive use or more appropriate management. For example: 1) the volume reductions achieved by recycling and waste processing could reduce the disposal capacity needed in the region to a fraction of that currently consumed, 2) the more homogeneous, stable character of processed waste could lower the potential for adverse environmental impacts, 3) the organic content in the waste could be minimized, reducing the potential for methane production and acid decomposition that captures metals in leachate and 4) nuisance impacts--odor, noise, dust, litter and traffic--could be reduced for properties adjacent to disposal facilities.

Environmental concerns and protection strategies will differ depending on the type of facility and the waste material received. Land disposal facilities will require greater levels of protection for ground water resources compared to processing facilities. If waste combustion is involved, air quality will likely be the primary concern. As the region's solid waste management system evolves towards more complete reduction and recovery, the residual materials ultimately requiring land disposal will be less in volume and more homogeneous in composition, helping to assure fewer environmental impacts. Hazardous materials can be better identified, aggregated and managed. Where applicable, health risk standards established by the Minnesota Dept. of Health will be used to evaluate risks associated with proposed facilities.

### Land Disposal Facilities

Solid waste land disposal has often led to surface and/or groundwater contamination from leachate. The degree of reported contamination has ranged from a slight degradation to severe contamination with substances such as heavy metals, organic compounds and disease-producing organisms. Groundwater is usually very slow moving and it can be years or decades before contaminated water reaches those who use water supplies. Moreover, after the source of contamination has been removed it may take decades for groundwater to purge itself. The costs of remedial action to actively improve the groundwater supplies can be enormous. Surface water and groundwater can be protected by establishing land disposal materials screening standards and then minimizing leachate formation and capturing it for treatment through proper site selection, design, operation and maintenance. There is growing evidence to indicate that the groundwater systems in the region are interconnected, implying a greater need for protection. Several of the hydrogeologic units are bisected by bedrock valleys buried with glacial drift or alluvial soil deposits characterized by high groundwater flow rates. These bedrock valleys provide a hydraulic connection between deeper sedimentary bedrock formations and the major river systems. These and other geologic features cause vertical movement between aquifers. All of the aquifers are used for drinking water to some extent.

The Metropolitan Council recognized the importance of groundwater protection in its Water Resources Policy Plan Guide Chapter adopted in 1986. Policy 3-1 of this plan states that "facilities and projects dealing with or generating wastes must be sited, designed, constructed & operated to

prevent contamination of water. Existing facilities found to be contaminating groundwater shall implement remedial and contingency measures to meet this requirement."

It is now widely recognized that engineering controls such as liners and leachate collection systems must be used in new or expanded land disposal facilities to more adequately protect groundwater. Liners are intended to retard leachate seepage and provide containment for collection. Liners are usually made of recompacted clay soils or synthetic fabrics. A leachate collection system is a series of perforated pipes underlying the waste but overlying the liner to allow removal of accumulated leachate. Once collected and removed, leachate must be treated at the site or at a sewage treatment plant. Discharged leachate must meet the same effluent quality standards as other sources of industrial sewage waste. Compacted, low-permeable soils covering the top of the disposal facility will limit infiltration of water into the waste material. Installation of monitoring and a regular sampling program can determine the extent of any leachate migration from the site.

Land disposal facilities containing unprocessed waste high in organic materials can produce other environmental impacts including explosive, toxic and asphyxiating gases. Methane, a principal component of landfill gas, has been known to accumulate in explosive concentrations and result in damage to persons and property. Landfill gas can be controlled by one or more of the following techniques: 1) lining the site with materials that block the subsurface flow of gas to adjacent land; 2) selectively placing material to promote venting and gas collection; and 3) pumping wells to evacuate and vent, burn or process the gas for sale.

Engineering controls alone are not adequate protection. A fundamental means of protecting surface and groundwater resources should be the selection of locations that have hydrogeologic characteristics and soils that enhance prospects for detecting and treating any potential leachate leakage and minimize the potential that leakage could affect usable water supplies. Favorable land disposal locations include: 1) areas with permeable soils where groundwater and potential leachate flows are predictable and 2) areas with thick deposits of low permeable soils and few connections with usable water supplies.

## Processing Facilities

Solid waste processing facilities include combustion units that recover energy, facilities that prepare the solid waste into a fuel that can be shipped (RDF), composting facilities and transfer stations. The potential environmental impacts will vary depending on the type of facility, waste feedstock and output products.

Combustion facilities emit a wide array of substances into the air. The type and quantity of these emissions depends on the furnace type, fuel composition, and operation factors. Federal and state air quality standards have been developed for municipal waste combustion facilities. Federal new source performance standards are expected to establish emission limits by 1991 for metals (measured as particulate matter) organics (measured as dioxins and furans) and acid gas (measured as SO2, HCL and NOx). Best demonstrated technology regarding pre-combustion (fuel cleaning through materials separation), combustion and post-combustion is proposed. MPCA rules to implement these standards are likely to be adopted before the federal standards take effect. Continuous progress is being made to improve the methodology of health risk assessments for pollutants that do not have either emission or ambient standards. These health risk analyses are conducted on a case by case basis for all types

of solid waste combustion and MSW compost facilities. Several strategies can be used to bring emissions within acceptable levels including installation of pollution control devises, adjusting the charging rate and mixture of solid waste fuel supply, controlling air supply, and regular facility maintenance.

## Aesthetic and Nuisance Impacts

Aesthetic and other environmental impacts that can be associated with mixed waste facilities are litter, dust, noise and odors. Facilities that handle highly processed waste should have fewer nuisance problems. Litter can be controlled by using fences, properly designing access routes and enclosing tipping areas when possible. Paving or watering access roads minimizes blowing dust from truck traffic. Noise from waste facilities can be reduced by barriers, berms, vegetation and buffer space. Where building walls are of lightweight construction, heavier or secondary walls can be used to reduce noise. Odors can be minimized by regularly covering the waste with soil at land disposal facilities receiving unprocessed or mixed waste. At mixed waste processing facilities, odors can be avoided by controlling air flow and preventing anaerobic conditions from developing in holding areas by minimizing storage time. Facility design and operating practice should provide for adequate protection of employee health and safely.

Buffer surrounding landfill operations is important to minimize nuisance impacts that may not be controlled within the landfill site. Buffer should specifically protect occupants of nearby residential and business structures that exist at the time a landfill proposal is subjected to environmental review. Occasional visitors to a site vicinity and people who develop property near a site that has been selected for landfill development have more choice in their exposure to the site than do people who are neighbors due to residence or employment originating before a facility is sited. Two types of criteria will be used to determine whether buffer provides sufficient protection for existing and discretionary land uses. 1) Performance criteria will be used to evaluate impacts on existing habitable residential and business structures to assure that visual and noise exposure does not exceed specified standards. 2) A general analysis of facility design, active fill area setbacks from property outside the buffer, and facility operations will be conducted to determine whether anyone in the immediate proximity of a landfill is adequately protected. Farm homes will be considered residential while farm operations will be considered as agricultural land uses if the property zoning is for this use.

Proposers of MSW landfills including MSW incinerator ash landfills must submit, in conjunction with facility permit applications to the MPCA, buffer effectiveness plans to implement buffer effectiveness criteria 5i - 5m below. The plans must show: modeled estimates of noise and visual impacts addressed by the Council's buffer effectiveness criteria; buffer depths; site access; screening protections; any planned uses of buffer for activities ancillary to landfill operations; and plans to offer mitigation assistance for occupants of existing residences and businesses that cannot be effectively protected from exposure to unacceptable views and noise through measures implemented entirely within the buffer area.

Buffer will not be evaluated as a means for managing leachate, landfill gas, litter, odor and dust problems because these should be controlled primarily through measures planned within the regulatory compliance boundary of each landfill site.

In assessing the potential for proposed landfill operations to impact nearby land uses, the Council will rely on the local comprehensive plan discussion of adjacent land use. The standards for assessing the impact of the landfill on adjacent land use will be based on the activities within the active landfill area and any support activities conducted adjacent to the active fill area. Visual impacts will be based on sight distances for a given structure to landfill activities. Residential structures have the most rigorous buffer standards due to the sensitivity of that land use.

### *Objectives*

5a. To design, operate, and maintain solid waste facilities so as to minimize risk to public health and the environment.

5b. To reduce nuisance impacts at solid waste facilities to the greatest extent possible.

5c. Assure that new land disposal facilities are buffered sufficiently to effectively mitigate visual and noise impacts on existing structures and potential discretionary uses in close proximity to landfills.

### *Criteria*

5a. Waste management facilities shall be designed and operated to prevent, to the greatest extent possible, discharge of leachate under or beyond the site boundaries. Sites with a significant risk of ground or surface water contamination will not be approved. The following factors will be considered in determining consistency with this criterion:

a. The characteristics of the wastes that will be accepted;
b. Ability to prevent violations of state water quality standards;
c. Ability to control unregulated substances adequately;
d. The nature of the water resources including their existing uses and potential for use (potential for use exists if a withdrawal rate of one gallon/minute can be sustained);
e. The underlying soils and hydrogeologic conditions (including depth to bedrock, soil texture, permeability of underlying materials and ground water flow patterns); and
f. Whether the applicant's proposed engineering control and management technologies provide the levels of protection afforded by other reasonably available technologies.

5b. Sites that would adversely impact environmentally sensitive areas should not be approved. The characteristics of the specific area under consideration, as well as the characteristics of the wastes the proposed site would accept, will be reviewed in assessing the potential for adverse impacts.

5c. Facility design and operating procedures must be sufficient to prevent adverse off-site nuisance impacts. Litter, odor and noise are the primary nuisance concerns that should be evaluated to permit a facility. Rodent and insect implications require

evaluation in situations where waste materials may regularly be stored for multi-day periods in a fashion that may not prevent the feeding and breeding conditions that precipitate infestations.

5d. Solid waste facilities shall provide for appropriate handling and treatment of surface water runoff, wastewater and collected leachate.

5e. Solid waste facility applicants shall develop environmental monitoring programs and contingency plans. These plans shall address:

a. Protection of surface and groundwater resources;
b. Protection of air quality;
c. Protection against odors, safety and nuisance impacts; and
d. Conditions under which the contingency plans would be implemented.

5f. Proposed land disposal facilities shall be designed primarily to accept processing facility reject and residual materials in accordance with the land disposal development schedule. The characteristics of processed and special wastes will be evaluated on a case-by-case basis before they will be allowed to be land disposed. Permits will be conditioned to require reports to the Council regarding compliance with Council processing standards and fee reimbursements, penalties or surcharges.

5g. Municipal solid waste processing facilities shall be located, designed and operated so as to minimize emissions to the atmosphere. The following factors will be considered in determining consistency with this criterion:

a. Ability to prevent violations of state or federal air quality standards;
b. Ability to control emissions for which neither ambient nor emissions standards exist;
c. The potential impact on environmentally sensitive ecosystems; and
d. Whether the applicant's proposed engineering control and management technologies provide the levels of protection afforded by other reasonably available technologies.

5h. Solid waste processing and disposal facilities will be evaluated with applicable health risk assessment criteria established by the Minnesota Department of Health. Attention will be given to pollutant identification, exposure levels and pathways that contribute to human health risk. The department has established a guideline minimum acceptable risk level of 10 chances in a million to contract cancer from exposure to individual pollutants via all pathways.

5i. Landfill operations may not exceed the following noise standards 100 feet from the outer edge of the buffer after mitigating measures are applied or at the minimum property line setback established under local zoning controls for adjoining land uses, whichever is less:

| | | |
|---|---|---|
| a. | Residential and Institutional | L(50) of 60 dBA |
| b. | Commercial and Recreational | L(50) of 65 dBA |
| d. | Industrial, Mining and Agricultural | L(50) of 75 dBA |

(The 100-foot set-back from the buffer corresponds to the closest point that a structure is likely to be constructed adjacent to the property line. Noise impacts are measured at the receptor rather than a property boundary.)

5j. The buffer must screen existing structures associated with the land uses indicated below from the visual impacts of landfill operations related to disposal of waste:

| | | |
|---|---|---|
| a. | Road way right-of-way | no protection |
| b. | Industrial, Mining and Agricultural | no protection |
| c. | Commercial and Recreational | 500 feet |
| d. | Residential and Institutional | 1300 feet |

5k. The following are the minimum distances between the active fill area to the outer edge of the buffer for the indicated land uses:

| | | |
|---|---|---|
| a. | Road way right-of-way | 25 feet |
| b. | Industrial, Mining and Agricultural | 50 feet |
| c. | Commercial and Recreational | 100 feet |
| d. | Residential and Institutional | 300 feet |

5l. The following are the minimum distances between any landfill activities (other than facility construction or site preparation) and the outer edge of the buffer for the indicated land uses:

| | | |
|---|---|---|
| a. | Road way right-of-way | 25 feet |
| b. | Industrial, Mining and Agricultural | 50 feet |
| c. | Commercial and Recreational | 100 feet |
| d. | Residential and Institutional | 200 feet |

5m. Construction of barriers, planting of vegetation, and/or compensation to property owners may be substituted for the protection level required in the buffer effectiveness criteria if adequate mitigating measures or compensation is specified in the buffer effectiveness plan.

## OPERATIONS

Solid waste management facilities must operate safely and meet the needs of waste generators. Resource recovery facilities must provide a consistent and dependable supply of secondary materials and/or energy. Failure to ensure such operations results in inconvenience, additional costs and public health and safety risks. Facility operators, waste haulers, waste generators, surrounding properties and markets for recovered products can be affected by poor operations. For example:

- Poor equipment and improper site maintenance and safety precautions can result in injury to facility personnel, waste disposers and nearby residents; and

- Poor operations can shut down facilities, often resulting in service disruptions to waste haulers and generators and service burdens on other waste facilities.

The adverse effects of such operating problems may be alleviated by:

- Providing facility personnel training in proper site and equipment operation and maintenance;

- Providing backup systems or alternative facilities to assure continued operations during scheduled and unscheduled maintenance periods; and

- Providing storage capacity and/or supplementary fuel to ensure a continuous supply of energy or recovered materials during periods of no collections.

***Objectives***

6a. Ensure that facility operations result in safe, regular and efficient waste management services.

6b. Ensure adequate and continued waste management services during nonoperating periods.

***Criteria***

6a. Proposed waste facility applicants shall demonstrate ability to properly operate and maintain the facility. The Council will take into account personnel training and previous operating experience in determining ability to meet this criteria. Federal and state agencies and local governmental units responsible for waste facility enforcement and public health and safety will be consulted.

6b. Proposed waste facilities shall have controlled access to prevent unauthorized entry and provisions for handling wastes left at the facility illegally.

6c. Proposed waste processing facilities shall ensure regular service to generators during nonoperating periods by demonstrating the availability of backup processing or disposal services. Standby procedures should be established for emergencies and periods when the facility is shut down.

## COMPETITIVE OPERATION

Public concern about environmental protection has resulted in greater public sector involvement in the waste management field. Public sector involvement should not, however, unnecessarily intrude upon existing, economically viable waste management activities unless necessary to achieve the objectives of waste reduction and resource recovery. New publicly supported facilities should not create an unfair advantage or restraint of trade in relation to comparable private or public facilities

already in operation. Situations in which comparable waste facilities may compete include: public land disposal versus private land disposal and public waste processing vs. private or public waste processing. Lower disposal fees at new public facilities could lure waste collection firms away from existing, viable facilities, already consistent with regional solid waste system objectives.

The criteria in this section do not apply to waste flow designation proposals.

### *Objectives*

7a. Ensure that publicly supported waste facilities do not jeopardize viable, comparable waste facilities currently in operation.

### *Criteria*

7a. Public waste facility proposals shall not create an unfair or unreasonable advantage or restraint of trade in relation to viable, comparable waste facilities currently in operation unless the displacement is necessary to achieve the objectives of the materials recovery, resource recovery and landfill development schedules. Restrictions may be placed on facility design and operating capacities. For a resource recovery facility or transfer station serving a resource recovery facility, restrictions may be placed on facility design and operating capacities and/or on the composition, quantity and geographic territory of the waste supplies. For purposes of this criterion, "publicly supported" facilities includes proposed facilities that would be owned and/or operated by public agencies, and facilities that would be owned and operated by others and supported primarily by public funds or obligations. The Council will consider the following factors to determine whether waste facilities are comparable and have the potential to compete:

a. Consistency with the processing facility and land disposal development schedules;
b. The design and operating capacities of the waste facilities;
c. The "tipping fees" charged at the facilities;
d. The geographic area from which the waste facilities draw their waste;
e. The facilities' sources of funding for capital and operating expenditures;
f. The facilities' waste supply and refuse-derived product market contracts or commitments; and
g. The economic requirements and viability of the facilities.

## ECONOMIC EFFECTS

The economic effects of solid waste management are far reaching. Jobs, collection and disposal fees, local and regional land use, and public service burdens can be affected by waste management decisions. Shifting from present disposal practices to new methods will inevitably result in higher waste management service costs. Large, centralized resource recovery plants and environmentally improved land disposal facilities are expensive to build and operate. Some new waste management initiatives may require public subsidies. Ultimately these costs will be passed on to the waste generator.

The transition to environmentally sound waste management services, however, requires that management costs not greatly exceed the benefits of environmental protection and resource conservation. The benefits include the avoided costs of land disposing of less waste, less risk to the public health and environment, fewer adverse social consequences, and materials and energy resource savings. Determining the net improvement to the regional solid waste system is difficult because benefits can not easily be measured. To some extent these factors are unknown and beyond quantifying. Since the Solid Waste Management Plan represents public consensus on the risks and benefits of various waste management methods and preferred alternatives, it can be used as one measure of a facility's benefit-cost to the region.

Solid waste facilities secured by public funds or obligations may increase the public economic risk. If the acquisition or betterment of a facility or site is secured by public funds or obligations pledging the full faith and credit or taxing powers of a government unit, the facility and site costs should be covered by reasonable rates and charges for use of the facility. If property tax revenues are pledged, the public should be assured, to the extent possible, that property taxes will not be spent for an inefficient operation. Since methods of financing facilities can vary considerably, the Council will need to examine carefully the financial circumstances of facility proposals to determine the extent of public debt obligation. When costs are paid, in part, from sources other than property taxes, such as corporate earnings, private stock or bond sales, and state or federal grants, property tax risks are not as great.

Solid waste facilities can influence local development conditions. Resource recovery facilities may increase industrial and/or commercial development around them. Energy intensive industries and/or waste related recycling or processing facilities may be encouraged to locate close by. Such development increases tax revenues to local units of government and provides employment opportunities. There are, however, many factors involved with such development and its potential around resource recovery facilities is speculative at this time.

Land disposal facilities generally do not encourage surrounding development and provide few jobs. Moreover, once closed, land disposal facilities have limited use for subsequent development. Land disposal facilities may also depress surrounding property values.

Solid waste facilities may require a number of public services. Such services include water and sewer hookups, fire and police services, litter control, traffic signals, road upgrading and maintenance, buffer zone amenities, environmental protection, monitoring and inspection, and end use planning and preparation. The costs of these services are generally borne by state, county and local governments.

Disposal charges and permit and license fees can offset some costs. Counties and cities in the Metropolitan Area that have operating land disposal facilities within their jurisdictions may charge a fee on the waste received at these facilities. This authority was first granted in the 1984 amendments to the WMA to help offset local public service costs. The Council has made recommendations to the state legislature on mitigating methods and compensation measures that should be used to offset waste facility impacts on local jurisdictions.

### *Objectives*

8a. Minimize the costs of implementing waste reduction and resource recovery.

8b. Ensure that publicly owned, operated or funded waste facilities, or waste facilities having contractual obligations with governmental units, minimize public economic risk.

8c. Minimize adverse economic effects on local communities affected by waste facilities.

*Criteria*

8a. A proposed waste facility's impact on regional solid waste service costs shall be reasonable. This criterion recognizes that there may be service cost differences to generators in sectors of the Metropolitan Area as a result of particular facilities. The Council will consider the following factors in determining consistency with this criterion:

a. The proposed facility's cost compared with the cost of similar facilities.
b. Rates and charges for use of the facility, and their reasonableness compared with other charges within the Metropolitan Area including, but not limited to, facilities for resource recovery, recycling, land disposal and transfer stations; and
c. The reasonableness of any governmental charges to waste generators through property taxes and other service charge mechanisms.

8b. Public waste facility proposals should, to the extent possible, be financially self-sufficient and minimize local tax payment risk. Projected operating revenues, including those from the sale of recovered products and tipping fees or user fees, should be adequate to pay capital and operating costs associated with a facility underwritten by a governmental unit over the life of the facility. Among the other elements, the Council will consider the following in determining the extent of public obligation and consistency with this criterion:

a. Total capital costs and the projected annual operation, administration, maintenance and debt service costs of the facility;
b. Amount, level and nature of projected revenues available for the payment of facility cost over the life of the facility;
c. Proposed methods of financing the facility; the amount, type and provisions made for the security of any public indebtedness incurred to finance the facility; size of the tax base and other financial resources backing any bonds to be issued to finance the facility; and
d. Any facts about the facility that could affect its continued operation and realization of revenues necessary for financial self-sufficiency, including supply contracts and by-product markets.

8c. A proposed waste facility should minimally impact surrounding land use development and property values. Buffer zones, facility end use plans and closure dates compatible with local comprehensive plans may be used to mitigate such impacts.

8d. A proposed waste facility should not place burdens on the use of local public services without compensation. Services available from other governments and compensation may be used to meet facility service requirements as provided for under state law.

# SOLID WASTE SUPPLY AND PROCESSING CONTRACTS

The Waste Management Act (WMA) authorizes cities, counties and towns in the region to enter into long-term contracts for the delivery of solid waste to waste facilities and the processing of solid waste (Minn. Stat., sec. 473.813, subd. 1). The success of waste facility proposals often depends on long-term commitments for waste supplies and processing. With such commitments, a proposed facility could demonstrate economic viability, and thereby secure capital financing. It is anticipated that long-term supply and processing contracts will be entered into as facilities identified in approved county master plans proceed toward development.

The WMA authorizes Council review and approval of local government supply and processing contracts longer than five years in duration (Minn. Stat. sec. 473.813, subd. 2). Such reviews may be consolidated with Council waste facility permit application reviews. Processing contracts will only be reviewed if there are proposed long-term waste supply commitments. Local governmental supply and processing contracts that are less than five years in duration may be reviewed as part of waste facility permit reviews. The criteria in this section will be used for all contract reviews. Waste facility permit review criteria will also be used if applicable. An approved contract will remain in effect unless the contract is substantially amended or revised to the extent that additional Council review is necessary.

The shift to a regional system based on waste reduction and resource recovery will increase costs. Some sectors of the region initially may pay more for waste management service than others. As more of the region implements waste reduction and resource recovery, these cost inequities should decrease. For this reason, review of supply and processing contractors should focus on the long term effects on waste management services. Maintaining waste management service costs within a competitive range region-wide should not be a prerequisite for contract approval.

Supply and processing contracts should incorporate flexible payment mechanisms to respond to changing facility service conditions. If waste supply volumes or recovered energy and materials market prices rise or fall, this can affect contract terms. Contracts should contain appropriate performance guarantees, equitable compensation formulas, tonnage guarantees and risk-sharing provisions.

### *Objectives*

9a. Ensure that waste supply and processing contracts facilitate implementation of the processing facility development schedule.

9b. Ensure that supply and processing contracts can respond to changing facility service requirements and market conditions.

### *Criteria*

9a. Waste supply and processing contracts shall be consistent with the processing facility development schedule. Waste supply and processing contracts should not prevent or adversely affect the operation or development of other waste facilities and waste management activities unless necessary to achieve the objectives of the processing

facility development schedule. The following factors will be considered in determining ability to meet this criterion:

a. Probable effect of the contract payment structure on waste facilities and activities;
b. Effect on service areas and collection rates and charges; and
c. Effect on projects and activities required by the processing facility development schedule.

9b. Increases in long-term waste management service costs as a result of waste supply and processing contracts should be reasonable with respect to the amount of processing and waste reduction/resource recovery achieved. The Council will emphasize the post five-year effects on service costs. This criterion recognizes there may be immediate increases in collection rates and charges and service cost differences as a result of particular waste facilities and activities.

9c. Waste supply and processing contracts should minimize public economic risk. Contracts will be examined for the following factors:

a. Quantity and duration of waste supplies and the required service area to meet minimum facility operating requirements and debt service amortization;
b. Method of ensuring that the waste can be provided to the facility;
c. Provisions to adjust drop charges and the price of energy and secondary materials produced by the facility to reflect changes in the cost for operations, maintenance, and value of materials or energy recovered; and
d. The facility's performance guarantees and contract contingencies.

# WASTE MANAGEMENT DISTRICTS

Under the state WMA, metropolitan counties can form waste management districts. This authority is granted to enable counties to implement waste management practices they would not be able to conduct independently. The Metropolitan Council has the authority to approve proposals for districts. Specific operating conditions can be a part of the Council's approval.

Solid waste management districts are public corporations and political subdivisions of the state. Two or more counties can form waste districts. Districts are officially established by the state Office of Waste Management. The Office cannot establish a district wholly within or extending into the Metropolitan Area without the approval of the Council. The Council cannot approve a district unless its articles of incorporation have the same procedural and substantive responsibilities, duties and relationship to the metropolitan agencies as a metropolitan county.

The Office cannot establish a district unless the counties demonstrate that they are unable to fulfill the purposes of a district through joint action. The counties must have completed a solid waste management plan before a district can be formed. The governing body of a district is made up of persons appointed by the counties. At least one person appointed by each county shall be an elected official from a governmental unit within the district.

Districts have various powers including: the acquisition of property by purchase, lease, condemnation and gift; the right of entry; the right to accept gifts, grants and loans; the construction and operation of solid waste facilities and services; the setting of rates and charges for waste facilities and services of the district; the right to dispose of property; the employment of persons; and review by the district of other waste facilities within a district. Property owned, used or occupied by the district is exempt from taxation by the state or any political subdivision of the state. Districts have the same rights as municipalities to issue revenue bonds.

Waste districts have the power to designate the flow of waste to specific resource recovery facilities, if the designation authority is in its articles of incorporation. The WMA sets up a specific process that must be followed by the Office to establish, alter and terminate waste districts. The WMA specifies petition contents, local review and comment procedures, hearing procedures and final decision procedures to be used by the Board.

## REASONS FOR CREATING A WASTE DISTRICT

Waste districts allow two or more counties to consolidate solid waste management authority into a single, special purpose implementing agency. District boundaries do not have to coincide with county boundaries, and this allow counties to consolidate authority for specific geographic areas. Only one-half of the counties within a proposed district need to petition for the establishment of a district. This authority allows counties to bring other counties or portions of other counties into districts. With the exception of taxation, waste districts have about the same authorities for waste management as individual counties have.

The major reasons for creating a waste district are: 1) fiscal self-sufficiency, 2) emphasis on technical specialization and efficiency and 3) geographic flexibility.

The WMA allows districts to obtain revenues from only non-tax sources. Revenues can be generated directly from facility user fees or from revenue bonds amortized by user fees. Revenues can also be obtained by grants and appropriations from other governmental units. User fees, however, probably would account for most of a district's revenues.

Districts can pursue particular service responsibilities with a high degree of technical efficiency, whereas a county frequently has to weigh competing functional interests against one another. Providing only special service functions gives a district less organizational flexibility and integration than general purpose government. Specific expertise and capabilities may be easier to build in a district.

A district may allow for greater geographic flexibility than counties could achieve within their jurisdictional boundaries. Certain natural, social or economic characteristics of waste management services may require a close relationship between service area and service functions. District boundaries can conform to the service area of the particular waste management functions to be provided. Since the district would only be concerned with providing waste services, it would be regarded as a service mechanism rather than a governmental device. Therefore, the general public may regard a district's service area as an inherent component of the structure.

## ISSUES CONCERNING DISTRICT FORMATION

Waste districts present a number of policy issues that should be considered when such proposals are evaluated. The major issues are 1) consistency with solid waste goals and objectives; 2) service efficiency and equity; 3) district accountability; and 4) administrative effectiveness.

A waste district should further regional and county solid waste goals and objectives. Although independently operating public bodies, districts will exist within the jurisdictions of planned regional and county waste management systems. It is essential that district services are compatible with the services of adjacent jurisdictions and meet overall regional service objectives.

Waste districts should be able to change their operations in response to changing needs and problems. They need to plan and carry out their operations in a way that ensures a high-quality service, not merely a service that pays for itself. In carrying out projects and activities for land disposal abatement, districts need to keep in mind that economic considerations, though important, should not be the only factor in making decisions.

Waste districts should coordinate their planning and operations with regional and county plans. Counties should carefully consider what waste management responsibilities should be delegated to waste districts to ensure an appropriate division of authority.

A waste district should deliver efficient and effective waste services. When counties propose to form a waste district, they should demonstrate that a district would be more effective in meeting regional goals and objectives than counties acting individually or through joint-powers agreements. An important consideration is a district's financial capability, which can affect the efficiency and effectiveness of its operations, as well as its overall success. This will need to be carefully examined when it comes time to review proposals for establishing waste districts. Another consideration is

equity in what rate payers are charged for waste services and the type of service they receive. All local jurisdictions and citizens in the district should receive services of similar quality and cost.

Districts need to be sure they are responsive and accountable to public needs and demands. Proposals to form waste districts will need to be carefully examined to make sure that citizens, public officials and the private sector are involved in district decision-making and operations. One possible way of ensuring accountability is to provide for oversight of district activities by general-purpose governments or by some other interaction with them.

Counties should be sure that a waste district they propose has adequate authority and resources to perform its functions. At the same time, responsibilities given a waste district should not duplicate those of other governmental units, or conflict with the plans or operations of other units. Provisions for coordination between the district and other units may be necessary to avoid duplication, to encourage the mutually beneficial exchange of information, and to ensure that project timing and development takes place most efficiently and effectively. Another important point is that a district's service area should be drawn in a way that promotes the most effective performance of waste services.

### *Objectives*

10a. Ensure that the establishment of waste districts will facilitate implementation of the materials recovery, resource recovery and landfill development schedules.

10b. Ensure that waste districts are responsive to local citizens, public and private interests.

10c. Ensure that waste districts have appropriate administrative structure and capabilities to deliver services efficiently and equitably.

### *Criteria*

10a. Proposed waste districts shall be consistent with the materials recovery, resource recovery and landfill development schedules. The Council will consider the proposal's consistency with affected county master plans and local plans. The Council will evaluate the:

a. District's capability to meet regional objectives;
b. Effect of the district on other projects or districts; and
c. Need to consolidate solid waste planning and implementation activities with affected counties and local units of government.

10b. Waste district proposals shall incorporate, in articles of incorporation, the same procedural and substantive responsibilities, duties and relationship to the Metropolitan Council and metropolitan agencies as a metropolitan county. Waste district proposals shall also include a mechanism to ensure public involvement and review of its activities.

10c. Waste district proposals shall demonstrate capability to provide waste services more effectively than can be done by individual counties or by counties acting through joint agreements. The Council will consider:

a. Financing capabilities of the district; and
b. Capability of the district to implement projects and activities.

10d. Proposals shall avoid duplication of effort and demonstrate adequate separation of responsibilities. Proposals shall also provide for integration of procedures, projects and programs with affected jurisdictions to ensure mutually beneficial exchanges of information and data and coordination of projects and activities.

10e. Waste district service area boundaries shall promote effective service delivery. The Council will examine social, economic, environmental and geographic characteristics that promote reasonable service area boundaries.

# WASTE FLOW DESIGNATION PROPOSALS

The WMA establishes a process whereby a waste district or county can be authorized to require that MSW generated within its boundaries, or a service area thereof, be delivered to existing or planned resource recovery facilities it designates. Using governmental controls to direct the movement of waste to a particular destination is referred to as waste flow designation or flow control. Council approval of waste flow designations is required.

Waste assurance simply means to assure the movement of waste from its origin to a particular destination. Waste flow designation is the most restrictive method of waste assurance. Other less restrictive methods include economic incentives to influence waste movement or contracting with waste collectors and local communities having direct control over waste movement. The extent to which waste movement must be controlled determines the waste assurance method that will be used.

Waste assurance is generally used to meet the financial security requirements on resource recovery projects. Large-scale recovery facilities usually require significant capital investment. By assuring delivery of a definite quantity of waste to a facility, revenues are guaranteed from disposal fees and from sales of energy and/or materials products. The revenues provide a source of income to amortize the project's debt service. Investment commitments are tied closely to the strength of waste supply commitments.

Waste assurance can also be used to facilitate other planning objectives. Waste assurance provides greater control over the various components of waste. Recyclable, hazardous components and nonrecoverable residuals may be separated and sent to appropriate facilities. The development and operation of ancillary projects may be improved with dependable waste quantities and predictable patterns of waste movement. Project type, size, location and financing can all be better controlled under circumstances.

## DESIGNATION REQUIREMENTS OF THE WASTE MANAGEMENT ACT

The WMA sets forth a three-step process for waste flow designation. The county or waste district must: 1) have adopted a solid waste master plan that includes a designation plan; 2) hold a public hearing on the designation and, if possible, negotiate contracts with users of the recovery facility; and 3) adopt a designation ordinance. Both the designation plan and ordinance require Council approval.

The WMA designation authority applies only to MSW and exempts: 1) materials that are separated from solid waste and recovered for reuse in their original form or for use in manufacturing processes; 2) materials that are processed at another resource recovery facility at the capacity in operation at the time the designation plan is approved; 3) materials that are separated at a permitted transfer station located within or outside of the boundaries of the designating authority for purposes of recycling, provided certain specific conditions are met. In addition, at the time the Council approves the designation plan, materials must be excluded from designation that will be processed at potential resource recovery facilities the Council is convinced will be substantially completed within 18 months. Operators or owners of proposed recovery facilities must file with the Council for the exclusion.

The WMA requires designation plans to evaluate: 1) the benefits of the designation and how it furthers local and regional waste management plans and policies as well as state policies and

purposes; and 2) the estimated costs of the designation and its long-term effects. Particular areas the WMA requires designation plans to evaluate include:

- Whether the designation will result in the recovery of resources or energy from materials that would otherwise be wasted;

- Whether the designation will lessen the demand for and use of land disposal;

- Whether less restrictive methods for ensuring an adequate solid waste supply are available; and

- What other feasible and prudent waste processing alternatives are available for accomplishing the purposes of the designation, and their costs and effects on the cost to waste generators.

If these points are adequately addressed, the designation plan is to be approved. The Council has 120 days to reach a decision after a designation plan has been submitted. Once the plan has been approved, the county or district must hold a public hearing on the designation and negotiate contracts, if possible, with solid waste collectors expected to use the recovery facility. At the end of the negotiation period, the county or district can proceed with preparation of a designation ordinance. The ordinance must specify the exact nature, geographical area, requirements and governing regulations of the designation. It may also include civil and misdemeanor penalties for violation of the ordinance.

The county or district must submit the designation ordinance and any long-term negotiated contracts to the Council for approval. The Council has 90 days to complete its review and reach a decision on the ordinance or contracts. If the Council determines that the ordinance is based on an approved designation plan and that the county or district has followed the required procedures regarding the public hearing and the negotiation of contracts, the Council must approve the ordinance. The Council may attach conditions to its approval. The designation authority may amend the designation ordinance with the approval of the Council.

The WMA requires the Council to monitor the effectiveness of any designations. The designation authority must submit regularly to the Council reports on implementation of the designation. The Council is required to periodically evaluate the effectiveness of the designation and whether state purposes and policies are being met.

## ISSUES CONCERNING WASTE FLOW DESIGNATION

The merits of waste flow designation have been publicly debated for a number of years. Concern has focused largely on the effect designation would have on the competitive nature of the region's waste services. Waste flow designation imposes limitations on both waste movement and available waste facility options. Waste collectors will have limited choice on where to take the waste once it is collected. Such controls could substantially change the present competitive service arrangement in parts of the region. Notwithstanding, since present waste services do not fully internalize their costs, economic considerations should not be the only basis for evaluating waste designation proposals. Total service impacts must be analyzed, including resource recovery objectives designation may

promote. Factors that should be evaluated include:

- Whether designation furthers the objectives of the materials recovery, resource recovery and landfill development schedules;

- Whether designation is necessary for financial support and whether less restrictive waste assurance methods are available;

- Whether designation maintains incentives for designated resource recovery facilities to operate efficiently;

- Whether designation will be affected by changes in waste supplies and other waste reduction/recovery activities; and

- Whether designation includes sufficient enforcement methods to ensure compliance.

Waste flow designations should be carefully evaluated to assure furtherance of state and regional waste management policy. Designation proposals must demonstrate that the use of land disposal will be reduced, and that the development of other waste reduction and recovery methods will not be jeopardized. The costs and benefits of using alternative recovery measures in place of the proposed designation activities must be evaluated. Designation proposals will also have to be scrutinized to determine to what extent ancillary activities may benefit, such as improving the operation of source separation and composting programs because of greater control over various waste components. Periodic monitoring will be necessary to assure designation continues advancement of state and regional policy.

Waste designation may be necessary to support the financial feasibility of some projects and activities. The financing instruments considered will have to be carefully examined to determine if designation is absolutely required, or whether other methods of waste assurance could be used. Other methods may include: economic incentives; entering into long-term waste supply contracts; placing restrictions on the use of other waste facilities; and maintaining certain controls over waste collection services. It may be possible to use designation in conjunction with other methods, with designation providing a backup mechanism if the other methods do not work as anticipated. Alternative financing methods may also have to be evaluated if they result in the use of other assurance methods.

By guaranteeing waste supplies, designation may remove economic incentives for private operators of resource recovery facilities to contain expenses and provide responsible service. Facility operators would not have to be concerned that high prices or poor services would result in waste collectors taking the refuse elsewhere. Close public scrutiny of facility performance is, therefore, necessary to ensure efficient operations. Contractual and financing/ownership between governmental units and private facility owners can be used to ensure accountability and efficient performance. The Council is authorized to approve long-term waste supply and processing contracts between local governmental units and private operators (see Appendix: Solid Waste Supply and Processing Contracts).

It is important to take into account the effect changes in waste supplies and other waste reduction/resource recovery activities will have on the designation. MSW generated within the designation area will be committed to go to the designated facility or facilities, with the exception of the exemptions authorized by the WMA and exclusions for other recovery facilities authorized by the

Council. The designation will commit the waste supplies for a specified period of time, usually the capital debt service period for the activities being financed. This period of time could be as long as 20 to 30 years for facilities requiring significant investment. Fluctuations in the waste supplies, seasonal variations and changes due to the impact of other recovery programs, must be anticipated during the period of the designation, as well as changes in the designated facility's operating capabilities, such as future expansions and terminations. Designations will, therefore, have to be carefully reviewed for compatibility with long-range plans for solid waste management, the effect of authorized waste supply exemptions and recovery facility exclusions, and the potential for waste generators to separate materials from MSW for recovery independently. Over time it may be necessary to change certain features of the designation, including its jurisdictional boundaries, to account for changes in waste supplies and solid waste activities. Approval of exclusions should address reporting and enforcement strategies to assure that these entities achieve waste management standards equivalent to those expected of designated facilities.

Finally, implementation of designation requires enforcement to ensure compliance. Because designation imposes higher costs initially, waste collectors may simply refuse to comply and continue to use less expensive non-designated disposal facilities. It may be particularly difficult to enforce designation if a large number of collection vehicles and firms are affected. The jurisdictional boundaries of the designation area will have to be examined to determine if compliance can be reasonably enforced. Designation ordinances will also have to be examined closely to assure that adequate enforcement mechanisms will be used. Methods, such as levying fines, marking collection vehicles with distinguishable identifications and inspecting non-designated facilities, should be considered. Cooperative enforcement arrangements with jurisdictions outside the designation area may be necessary.

### *Objectives*

11a. Ensure that waste flow designations facilitate implementation of the Regional System Plan.

11b. Ensure that waste flow designations, to the extent possible, minimize adverse impacts on waste collection patterns and services.

11c. Ensure that waste flow designations have appropriate administrative capabilities to deliver services efficiently and equitably.

11d. Ensure that waste flow designation is needed and that less restrictive methods are not available that would accomplish the same purposes and results as the designation would.

11e. Ensure that exclusion entities achieve waste management standards equivalent to those expected of designated facilities.

11f. Ensure that exclusion entities provide information necessary to monitor implementation of the regional system plan.

*Criteria*

11a. Proposed waste flow designations shall be consistent with the regional solid waste management plan and policies. Proposed designations shall demonstrate that a significant reduction in demand (at least 40 percent is recommended) for land disposal capacity will occur for the waste generated in the designated area during the period of the designation. The Council will evaluate:

a. The designation's capability to further the objectives of the materials recovery, resource recovery and landfill development schedules;
b. The extent to which the use of land disposal is reduced;
c. The effect of the designation on existing and proposed solid waste projects and activities;
d. Consistency with county solid waste master plans; and
e. Consistency with state policies and purposes.

11b. Proposed waste flow designations shall not unnecessarily interfere with existing and proposed private waste management initiatives except those consisting of MSW land disposal. The Council will evaluate the potential effect of designation upon businesses engaged in waste collection, materials recycling, demolition debris disposal, and industrial waste disposal.

11c. Proposed waste flow designations shall demonstrate that efficient facility operations and performance will be maintained. The Council will evaluate:

a. The extent to which public contractual and financing/ownership arrangements with private operators will ensure accountability and less risk of inefficient performance;
b. The effect the designation will have on waste service delivery costs; and
c. The effect on performance without the designation.

11d. Proposed waste flow designations shall have adequate, but not excessive, solid waste supplies during the designation period. It may be necessary to amend the designation at a later time period to account for changes in waste supplies. Factors that will be considered include:

a. The seasonal variation and projected growth rates of solid waste supplies;
b. Proposed expansions or terminations of the designated facility that may occur in the future;
c. Standards of the designation entity for considering exclusion requests;
d. Commitment of the designation entity not to interfere with source separation activities of waste generators that allow materials to be managed independently from MSW;
e. The impact on solid waste supplies by other existing and proposed solid waste projects and activities; and
f. The effect on solid waste supplies of exemptions authorized under the WMA and recovery facility exclusions authorized by the Council.

11e. The jurisdictional boundaries of the proposed waste flow designation shall promote efficient service delivery. The Council will examine the economic and geographic characteristics that promote reasonable service area boundaries.

11f. Proposed waste flow designation ordinances and other controls that may be necessary shall demonstrate that adequate enforcement mechanisms exist to ensure compliance. Enforcement arrangements with exclusion entities, local jurisdictions and jurisdictions outside of the designated area may be necessary to ensure compliance.

11g. Proposed waste flow designations shall demonstrate that designation is necessary for the financial support of the projects and activities. The Council will evaluate:

a. Alternative methods of financing the proposed activities;
b. Whether other methods of waste assurance can be used;
c. The costs and benefits of using alternative recovery measures in place of the designation activities; and
d. Whether resource recovery is feasible without the designation.

11h. Proposed resource recovery facility exclusions shall demonstrate that they will be substantially completed within 18 months from the time the designation is approved and capable of sustaining viable operations. The Council will examine:

a. The strength of waste supply and product market commitments;
b. The ability to secure a location for the project or activity;
c. Whether a commercially demonstrated technology will be used; and
d. The ability to obtain all necessary permits and approvals and complete construction.

11i. Exclusion entities must be required to meet certain conditions to effectively contribute to the achievement of solid waste management system objectives. Failure to comply with these conditions will result in the revocation of exclusion authority at the time a designation ordinance is approved or amended.

a. The Council and county from which an exclusion is granted must be given written notification within five working days of any final decision to terminate a project.

b. The Council and county must be given written notification if the exclusion entity has elected to obtain all or part of its waste supply from outside the county from which the exclusion was obtained.

c. Periodically, efforts should be undertaken to obtain a secure waste supply from within the county in which the facility is located, if different from the county from which the exclusion was obtained.

d. Quarterly reports must be provided to the designation jurisdiction and the Council that address at least the following information: the amount and type of waste supplies, the general areas from which waste supply is obtained,

sources of waste supply outside the designation jurisdiction or county in which the facility is located, and disposition destinations. The disposition information must indicate the amounts and types of material processed and directed to the following destination categories: recycling, combustion, composting and land disposal. The identity of land disposal destinations must be disclosed.

e. The facility may not direct its product or incoming waste materials to land disposal facilities except under emergency circumstances.

f. The following additional requirements are applicable during the period following approval of an exclusion by the Council and the reconsideration of the exclusion decision in conjunction with approval of a designation ordinance:

1) Within 30 days, a recipient of an exclusion must provide the Council with an up-to-date schedule for project development and key decision points which includes at least the following information: project authorization; site acquisition; environmental review; permits and other governmental approvals; financing; design and engineering; site preparation; construction; equipment installation and operation; waste supply sources and product market. The recipient should document both the expected annual facility throughput and expected peak day throughput as well as any expectation that project development will be phased in in such a way that it would not operate at full capacity in its first year of operation.

2) Thereafter, a monthly report shall be submitted to the Council which describes project activities during the previous month, activities undertaken, deadlines met and revisions to the schedule.

3) Written documentation must be submitted to the Council which demonstrates that:
   a) a secure waste supply has been obtained for the facility;
   b) project financing can be secured;
   c) the party holding the exclusion has granted final approval for project development; and
   e) waste received at the facility will be reclaimed for sale or use of materials and/or energy.

# CERTIFICATE OF NEED

The 1984 amendments to the Waste Management Act specify that no new land disposal capacity for mixed municipal solid waste shall be permitted in the Metropolitan Area without a certificate of need (CON) issued by the Council indicating that the additional disposal capacity is needed. The Council's CON standards and procedures will be based on the Council's materials recovery, resource recovery and land disposal development schedules. The WMA requires that the Council certify need only to the extent that there are no feasible and prudent alternatives to land disposal. Alternatives that are speculative or conjectural cannot be deemed to be feasible and prudent. Economic considerations alone cannot justify the certification of need or the rejection of alternatives. Candidate landfill sites eliminated from consideration in the Council's regional inventory or by the county site selection authorities cannot be considered as alternatives.

## PROCEDURES FOR CERTIFICATION OF NEED

Any person may apply for a certificate of need for disposal capacity for mixed municipal solid waste in the Metropolitan Area. Applications may be made by letter and must contain the location of the facility, proposed capacity, expected active life and fill rate, schedule for development and closure plan. The application and additional information available to Council staff at the time of application will be used to prepare a preliminary staff report and recommendations. The Council will conduct a public meeting on the preliminary staff report.

The public meeting will provide the applicant and other interested persons an opportunity to provide testimony on the staff report and recommendations. The public meeting will be conducted in accordance with the Council's public meeting procedures. A meeting record will be kept by the Council. After the meeting record closes, staff will prepare findings, conclusions and recommendations on the CON request for Council action. The meeting record will be included as part of the report.

The Council will decide whether or not to certify land disposal capacity prior to its review of the permit application for a facility. The purpose of separate certification and permit reviews is to reduce confusion of issues that may result from combining an analysis of feasible and prudent alternatives with permit review criteria. Conceivably, the Council could issue a certificate and deny issuance of a permit for a facility based upon environmental or other reasons unrelated to capacity considerations.

### *Objectives*

12a. Ensure that new land disposal capacity is only approved if there are no feasible and prudent alternatives.

12b. Ensure that any new land disposal capacity approved is consistent with the Council's landfill development schedule.

*Criteria*

12a. No permit for new landfill capacity will be recommended for approval by the Council unless it has issued a CON.

12b. The Council shall certify need, subject to limits on capacity, operations or start-up date necessary for consistency with its schedules for implementation of materials and resource recovery programs and facilities, if each of the following standards is met:

a. The proposed capacity is compatible with the Council's materials recovery, resource recovery and landfill development schedules;
b. The proposed capacity is compatible with the programs and facilities for materials and resource recovery identified in the county solid waste management master plans; and
c. Other feasible and prudent alternatives, including existing permitted capacity, are not available to substitute for the proposed capacity.

12c. An alternative is feasible if it is consistent with sound engineering practices, and there is a known method or technology which can successfully be put into practice to accomplish the task. An alternative is not feasible if it is experimental, theoretical or not capable of reliable operation at the appropriate scale.

12d. An alternative is prudent if it is not expected to result in extraordinary, unusual or unique impacts more adverse than such impacts from the proposed capacity. Non-environmental impacts may include, but are not limited to, impacts on waste collection and disposal systems; waste collection and disposal costs; and solid waste planning and implementation efforts within and outside of the Metropolitan Area.

12e. Proposed land disposal capacity will not be certified based solely on a determination that it is the least-cost alternative.

12f. Candidate sites eliminated from consideration for development cannot be reconsidered as waste disposal facilities.

# CANDIDATE LANDFILL SITE SELECTION

These criteria were developed because the Council had a statutory responsibility to participate in the candidate landfill siting process and conduct the siting process for any county that does not select a scheduled site within 90 days of its adequacy determination on the candidate landfill environmental impact statement (Minn. Stat. 473.833, Subd. 3). Although this legislation is currently suspended, the criteria are provided for use if the siting process is reinstated. They might also serve as a site evaluation tool for Council review of sites selected using a new siting process.

### *Objectives*

13a. Ensure that sufficient land disposal capacity is sited to meet regional needs.

13b. Ensure that approved land disposal projects can adequately protect the environment at a reasonably affordable cost.

### *Criteria*

13a. The Council will analyze the potential environmental risks and long-term system costs of each site and select the site that it determines best protects the environment at a cost the likely wasteshed can reasonably support. The analysis will consist of the following elements:

a. Environmental protection

1) Primary concerns
- Groundwater contamination;
- Surface water contamination;
- Air contamination; and
- Determination whether each site and proposed design plan can be implemented with an acceptable risk level of environmental contamination.

2) Secondary concerns
- Nuisance potential of litter, odor, noise, traffic disruption and visual impact; and
- Determination whether the Council's buffer effectiveness criteria are met.

b. Long-term system cost

1) Development expense;
2) Operating expense;
3) Closure & post closure maintenance expense;
4) Financial assurance expense; and
5) Hauling expense

c. Ranking of sites that exceed a threshold level of acceptable environmental risk and are consistent with the landfill development schedule for a geographic area. The ranking will reflect the estimated long-term system cost for use of the sites as landfills.

1) Candidate landfill environmental impact statements will be a primary source of information for determining whether sites have an acceptable environmental risk level.
2) A record of decision will be prepared to indicate how the EIS's were taken into consideration.

d. Recommendation to select the least cost site with both an acceptable risk level of environmental contamination and site/buffer/off-site potential to comply with the Council's buffer effectiveness criteria.

# ENVIRONMENTAL REVIEW

Minnesota Rules designate the Council as the responsible governmental unit (RGU) for environmental review of MSW disposal, transfer, energy recovery and compost new construction or expansion projects in the Metropolitan Area. MSW incinerator ash disposal projects are also a Council responsibility. In addition to its role in conducting environmental review as an RGU, the Council will comment on environmental reviews of waste management projects with implications affecting the Metropolitan Area that are conducted by other entities.

As RGU, the Council is required to provide unbiased information about environmental risks and mitigation strategies. Stewardship of the environmental review process involves careful management of resources to minimize the time and expense necessary to achieve high quality products. Although comment on projects reviewed by other entities is optional, Council comments will be particularly helpful regarding regional systems coordination generally and issues for which the Council has subsequent solid waste facility permit or site selection responsibility.

### *Objectives*

14a. Conduct environmental review of solid waste management projects objectively in accord with Environmental Quality Board rules.

14b. Offer constructive comment on environmental reviews of solid waste management projects with a potential impact on the Metropolitan Area that are prepared by other responsible governmental units.

### *Criteria*

14a. Objectively attempt to portray the potential impact proposed solid waste management projects may have upon the environment. Apply a broad perspective of environmental, economic and sociological implications. Communicate widely with governmental decisionmakers responsible for aspects of projects undergoing review as well as the individuals, groups and businesses that may be affected. Conduct a thorough public process that encourages input from interested and affected parties. Emphasize public meetings to encourage input on: need for further environmental review following the completion of environmental assessment worksheets; scoping decisions; releases of draft environmental impact statements; and adequacy determinations for final environmental impact statements.

14b. Comment on environmental reviews of solid waste management projects affecting the region that are conducted by other responsible governmental units. Focus comments on regional system coordination and solid waste management facility permit or site selection responsibility.