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Executive Summary

Despite the many benefits provided by the region's solid waste management system, significant challenges lie ahead. The Metropolitan Area is expected to experience significant growth in population and employment over the next 20 years. There will be 22 percent more people living in 29 percent more households, working in 26 percent more jobs in 2020 than in 2000, according to the Metropolitan Council. Waste generation will grow faster than population; 4.5 million total tons of municipal solid waste by 2010 and 6.0 million tons by 2020, compared to 3.3 million tons in 2000. This means that within the next six-year planning cycle (2004–2009) the region will manage almost 900,000 more tons of MSW annually. Further, many materials that are discarded as waste contain toxic components that threaten public health and the environment.

This document, the *Metropolitan Solid Waste Management Policy Plan*, establishes the plan for managing the Metropolitan Area's solid waste through 2017. The policy plan was prepared with input from state agencies, county staff, and a variety of stakeholders: representatives of the waste industry, environmental groups, businesses, and citizens. In addition, recommendations from the Citizens Jury® and the State Solid Waste Advisory Committee form a basis for much of the policy plan. The policy plan was approved by the Solid Waste Management Coordinating Board on November 19, 2003 and adopted by the OEA on January 15, 2004.

The policy plan is structured around four main building blocks: vision, goals, policies, and challenges and opportunities.

Vision

The plan sets forth a vision of sustainability for the region as follows:

A sustainable community seeks a better quality of life for current and future residents by maintaining nature's ability to function over time. It minimizes waste, prevents pollution, promotes efficiency, and develops resources to revitalize local economies. The waste management system is a component of the infrastructure of a sustainable community. Therefore, solid waste will be managed by technologies and methods that support sustainable communities and environments. The solid waste hierarchy, with its associated goal of protecting the state's air, land, water, and other natural resources and the public health, is central to attaining the objectives of sustainability and solid waste management.

Goals

To bring the vision closer to reality, the region will work towards four specific goals, which represent elements of the vision of sustainability.

Goal 1: To manage waste in a manner that will protect the environment and public health and that will conserve natural resources.

Goal 2: To manage waste in an integrated waste management system in accordance with the hierarchy in order to minimize landfilling, with an increased focus on maximizing reduction of toxicity and volume of waste, reuse, recycling and source-separated organic waste management.

Goal 3: To manage waste in a cost-effective manner that maximizes environmental benefits and minimizes long-term financial liability for citizens, businesses and taxpayers.

Goal 4: To cause generators to take responsibility for the environmentally sound management of their waste and to allocate solid waste management system costs equitably among those who use or benefit from the system.

Policies

The policies in the plan are organized around the four goals and lend special emphasis to the following issues:

- Waste as a resource. This plan advocates a transition to a new way of thinking about waste, based on principles of sustainability and resource conservation.
- Solid waste management hierarchy. This plan stresses the need to manage waste in an integrated system in accordance with the hierarchy of preferred waste management practices, with an emphasis on reduction and recycling in order to promote resource conservation and environmental protection.
- ·Generator responsibility. This plan clearly states that generators are responsible for the waste they produce. That means generators must make wise purchasing and wise disposal decisions—paying the true cost of managing waste and evaluating the effects of their waste disposal decisions.
- Government as a leader. The policies in this plan are designed to steer the region toward a vision, and government will have to lead the way by assuring that government actions are consistent with this plan.
- Product stewardship. This plan steers the region toward more product stewardship, with the intent being that government will reduce its role in the management of some wastes, while those that produce, sell, and use products will assume greater responsibility for the management of products at the end of their useful lives.
- Private sector initiative. This plan calls for the private sector to take a greater in solving waste management dilemmas consistent with the public vision for waste management.
- Reinvigorate recycling. This plan seeks to reinvigorate recycling, so that the Minnesota can more fully realize the environmental and economic benefits of separating recyclables from trash.

Challenges and opportunities

Implementing a solid waste management system in accordance with the policy plan will require the region to take advantage of a variety of opportunities and to overcome complex challenges. The policy plan identifies opportunities and challenges that were raised by staff and stakeholders during the planning process. The specific actions identified are provided for the consideration of state and local government, as well as citizens, business, and the waste industry.

How the policy plan will be used

The policy plan is a tool for all metropolitan area residents and businesses. Some of the ways in which it will be used include the following:

- Educates citizens and businesses about solid waste issues and the generator's role in waste reduction, reuse, and recycling.

- Shapes the development of future solid waste facilities, services, and investments.
- Guides local and state planning, outreach, and regulatory activities.
- Informs state and federal solid waste legislative initiatives.

In addition, the policy plan acts as a framework for the revision of the Regional Solid Waste Master Plan, which must be prepared and submitted to the Minnesota Office of Environmental Assistance by December 31, 2004. The master plan identifies the outcomes and implementation strategies that will move the region toward achieving the vision, goals, and policies of this policy plan.

Part One

Introduction

In 2002, almost 6 million tons of material were discarded by the people that live, work, and play in the Metropolitan Area. Of this, almost 3.4 million tons were mixed municipal solid waste (MSW) and almost 2.4 million tons were nonMSW (construction debris, demolition waste, and industrial waste). Six million tons—imagine the Metrodome filled 19 times with garbage. In fact, the Metro Area produces almost 60 percent of the state's MSW, and studies indicate that this volume of waste will increase—probably faster than the growth in population. How that waste is managed affects the entire state.

The Metropolitan Area, also referred throughout the Policy Plan as the region, includes the counties of Anoka, Carver, Dakota (excluding the city of Northfield), Hennepin (excluding the city of Hanover), Ramsey, Scott (excluding the city of New Prague), and Washington.

This document, the *Metropolitan Solid Waste Management Policy Plan*, establishes the plan for managing the area's solid waste for the next 20 years (2004-2023). The Minnesota Office of Environmental Assistance (OEA) prepares and approves the policy plan and has worked with the Solid Waste Management Coordinating Board (SWMCB) throughout its development.

The policy plan was prepared with input from state agencies, county staff, and a variety of stakeholders: representatives of the waste industry, environmental groups, businesses, and citizens. In addition, much of this plan was developed with recommendations from the Citizens Jury® and the State Solid Waste Advisory Committee.

- The Citizens Jury® is a unique process that allows decision makers and the public to hear from citizens who are both informed and representative of the public. The process allows for considerable discussion and deliberation by the jurors to develop thoughtful and useful recommendations. See Appendix A for a summary of the priorities and values the Citizens Jury® believed should be reflected in any solid waste management strategy for the Metropolitan Area.

- The State Solid Waste Advisory Committee was charged with the task of mapping out the state's current solid waste system, evaluating its successes and failures, and making recommendations for improvement. See Appendix B for the State Solid Waste Advisory Committee recommendations.

Numerous research reports completed by the Office of Environmental Assistance, the Solid Waste Management Coordinating Board, and the counties over the last six years provide valuable information for policy analysis and development. See Appendix C for a summary of research reports and references used in the development of this policy plan.

Vision

The goals and policies contained herein are intended to steer the solid waste management system toward a specific vision for the future. The vision reflects the experiences of the region over the last six years under the previous policy plan and recommendations from the Citizens Jury® and State Solid Waste Advisory Committee. The vision shared by the region is as follows:

A sustainable community seeks a better quality of life for current and future residents by maintaining nature's ability to function over time. It minimizes waste, prevents pollution, promotes efficiency, and develops resources to revitalize local economies. The waste management system is a component of the infrastructure of a sustainable community.

Therefore, solid waste will be managed by technologies and methods that support sustainable communities and environments. The solid waste hierarchy, with its associated goal of protecting the state's air, land, water, and other natural resources and the public health, is central to attaining the objectives of sustainability and solid waste management.

Goals

To bring the vision closer to reality, the region will work towards four specific goals, which represent elements of the vision of sustainability.

Goal 1: To manage waste in a manner that will protect the environment and public health and that will conserve natural resources.

Goal 2: To manage waste in an integrated waste management system in accordance with the hierarchy in order to minimize landfilling, with an increased focus on maximizing reduction of toxicity and volume of waste, reuse, recycling, and source-separated organic waste management.

Goal 3: To manage waste in a cost-effective manner that maximizes environmental benefits and minimizes long-term financial liability for citizens, businesses, and taxpayers.

Goal 4: To cause generators to take responsibility for the environmentally sound management of their waste and to allocate solid waste management system costs equitably among those who use or benefit from the system.

Key themes

During the next six years (2004-2010), the plan will give special emphasis to the following issues:

- Waste as a resource. Vast amounts of materials are thrown away in the Metropolitan area—materials that could be designed to reduce waste or to be reused, recycled, or recovered for resource value. This plan advocates a transition to a new way of thinking about waste, based on principles of sustainability and resource conservation. Treating waste as a resource reduces pollution. It can initiate cost savings by using resources more efficiently. Considering waste as a resource allows greater flexibility to deal with challenges facing the Metropolitan Area's solid waste system.
- Solid waste management hierarchy. This plan stresses the need to manage waste in an integrated system in accordance with the hierarchy of preferred waste management practices, with an emphasis on reduction and recycling in order to promote resource conservation and environmental protection. Scientific research has pointed out the environmental benefits of the hierarchy, such as reduced greenhouse gas emissions resulting from waste reduction and recycling.
- Generator responsibility. This policy plan contains policies to aggressively foster and encourage responsibility at multiple levels (personal, corporate, government). While, from a legal perspective, generators (a person or entity that produces waste) are inherently responsible for what they produce, surveys show that most believe that their responsibility ends once the waste is hauled away. This policy plan clearly states that generators are responsible for the waste they produce. That means generators must make wise purchasing *and* wise disposal decisions—paying the true cost of managing waste and evaluating the effects of their waste disposal decisions.
- Government as a leader. Government provides health care, feeds and houses people, manufactures goods, provides a variety of services, builds structures, and more. In all of these

activities, waste is generated. The policies in this plan are designed to steer the region toward a vision, and government will have to lead the way by assuring that government actions are consistent with this plan.

- Product stewardship. This policy plan steers the region toward more product stewardship, with the intent being that government will reduce its role in the management of some wastes, while those that produce, sell, and use products will assume greater responsibility for the management of products at the end of their useful lives. Product stewardship means that all parties involved in designing, manufacturing, selling, and using a product take responsibility for environmental impacts at every stage of that product's life. In particular, product stewardship requires manufacturers to share in the financial and physical responsibility for collecting and recycling products at the end of their useful lives.
- Private sector initiative. In many parts of the United States—indeed, in parts of Minnesota—government is the primary provider of waste management services. In the Metro Area, however, there has been a long history of solid waste services provided by private businesses and nonprofits. Policies in this plan call for a greater role by the private sector in solving waste management dilemmas consistent with the public vision for waste management.
- Reinvigorate recycling. The Metropolitan Area is a national leader in recycling. However, in spite of the huge positive economic impact that recycling has had on Minnesota, the recycling rate has flattened since the late 1990s. This policy plan seeks to reinvigorate recycling, so that the Minnesota can more fully realize the environmental and economic benefits of separating recyclables from trash.

How the policy plan will be used

The *Metropolitan Solid Waste Management Policy Plan* has been revised and streamlined to create a document that will be a more useful tool for citizens, businesses, public entities, and policymakers alike. The policy plan will be used as follows:

- Citizens and businesses. The Policy plan: 1) informs citizens about their role in waste reduction, reuse, and recycling; 2) educates citizens about solid waste issues and the solid waste services (both government and private) available to them; and 3) identifies state agencies and county governments for assistance. The policy plan also serves as a guide to private industry in developing future solid waste facilities, services, and investments.

This updated version of the Policy Plan replaces the Metropolitan Solid Waste Policy Plan adopted by the MOEA and approved by the SWMCB on September 24, 1997. The director of the OEA may revise the Policy Plan under Minn. Stat. § 473.149. The Policy Plan is part of the State Solid Waste Policy Report (Minn. Stat. § 1 15A.41 1, subd. 1).

- Public entities. The policy plan guides the counties in developing solid waste master plans, ordinances, and proposals for source reduction, recycling, and waste processing. The plan also guides the OEA's metropolitan oversight responsibilities, including administration of the Metropolitan Landfill Abatement Account (MLAA) program, county plan reviews, and issuance of solid waste facility permits and landfill certificates of need (CONs). The policy plan will also aid the Minnesota Pollution Control Agency (MPCA) in its regulatory, environmental review, enforcement, and technical assistance functions that affect the Metropolitan Area.
- State and federal legislative bodies. The policy plan informs state and federal solid waste legislative initiatives proposed by the OEA and the SWMCB. State legislators will find the policy plan to be a useful resource when considering solid waste legislation affecting the Metropolitan Area.

Part Two

Goals and Policies

The law states, "The Plan shall include the goals and policies for solid waste management, including recycling…and household hazardous waste management…in the Metropolitan Area." The policies set forth in this section are statements of principle that chart a course for waste management and provide more specific guidance to policymakers in achieving the regional goals.

The two previous policy plans (1992, 1997) organized policies according to the method of managing waste (reduction, recycling, processing, landfilling, etc.) and focused on changing the manner in which the region handled waste—moving from a landfill-based system to an integrated system. This plan organizes the policies around the four goals for the region, drawing attention to the future and moving the system toward the vision for solid waste management in the region.

Goal 1: To manage waste in a manner that will protect the environment and public health and that will conserve natural resources.

The goal of Minnesota's Waste Management Act, as stated in Minn. Stat. § 115A, is to protect the state's land, air, water, and other natural resources and the public health by improving waste management in the state in order to reduce the amount and toxicity of waste generated, increase the separation and recovery of materials and energy from waste, coordinate the statewide management of solid waste, and the development and financial security of waste management facilities, including disposal facilities.

For the full text of the Waste Management Act, visit the OEA's web site at www.moea.state.mn.us

Waste, no matter how it is managed, has an effect on public health and the environment. This goal recognizes a prevention-based approach to waste management, to reduce, to the extent feasible, the effects on human health and the environment. The OEA's Solid Waste Advisory Committee has supported such a priority.[1] The Citizens Jury® on metro solid waste[2] placed health and safety as the top priority, with protecting, preserving, and enhancing the environment close behind.

The OEA's *2002 Solid Waste Policy Report*[3] advocated a transition to a new way of thinking about waste based on the principles of sustainability and resource conservation. The OEA believes that the transition begins by shifting our perception of waste as something without value to the idea that waste is a resource. The OEA outlines three bases for this transition:

1. Treating waste as a resource reduces pollution. Shifting waste management practices toward those that better treat waste as a resource, such as waste reduction, reuse, recycling, or composting, leads to reductions in the amount of air and water pollution released to the environment, including greenhouse gases.
2. Reducing waste saves money. Reducing and eliminating the generation of waste often creates significant cost savings by conserving raw materials and using resources more efficiently in the production of products.
3. Materials in waste often have value. If certain materials are either kept separate or separated after disposal, these materials can be reused, recycled, or recovered for their highest and best use.

[1] Office of Environmental Assistance. January 2003. Vision, Goals and Possible Action Items, State Solid Waste Advisory Committee.
[2] Jefferson Center. 2001. Citizens' Jury – Metro Solid Waste.
[3] Office of Environmental Assistance. April 2002. *Solid Waste Policy Report: Waste as a Resource.*

For example, the organic portion of garbage can be kept separate at the source *before* it gets to the curb and processed into compost, which can then be used as a high-quality soil amendment.

Goal 1 policies

Policy 1-1 (RR): Waste reduction, reuse, and recycling efforts will focus on materials that offer the greatest benefits, including:

- resource conservation
- pollution prevention
- economic benefits

Policy 1-2 (TR): Household hazardous waste and problem materials should be managed in accordance with the hierarchy of preferred waste management practices.

Policy 1-3 (TR): Because of the environmental and health risks associated with hazardous waste, the region will:

- reduce the toxicity of the MSW waste stream
- assure the proper management of hazardous waste

Key to policy abbreviations

The primary management method addressed in each policy is denoted by one or more of the following abbreviations.

RR: waste reduction and recycling
TR: toxicity reduction
OM organics management
P: processing
L: landfilling
NMSW: nonMSW
CF: cost and finance

Policy 1-4 (P): MSW that is not reduced and recycled will be processed before landfilling, to the extent feasible. Processing is preferred to the landfilling of MSW.

Policy 1-5 (P): Waste-to-energy facilities and landfill methane recovery are renewable energy sources.

Policy 1-6 (NMSW): MSW and nonMSW landfills will be designed and operated to protect the environment and public health.

Policy 1-7 (NMSW): The priority for program development for the management of nonMSW materials will be as follows:

- wastes that contain components that present environmental hazards
- materials that represent the greatest opportunity for resource conservation
- High-volume materials that are currently landfilled

Policy 1-8 (CF): The regional integrated solid waste management system requires responsible solid waste collection practices that protect the environment and public health, safety, and welfare.

Goal 2. To manage waste in an integrated waste management system in accordance with the hierarchy in order to minimize landfilling, with an increased focus on maximizing reduction of toxicity and volume of waste; reuse; recycling; and source-separated organic waste management.

This policy plan reaffirms the importance of fostering an integrated waste management system appropriate to the characteristics of the waste and which manages waste according to the hierarchy.[4] The policy plan goal seeks to minimize landfilling—recognizing the environmental and resource

[4] Minnesota Statutes Section § 115A.02

issues associated with that technology—instead emphasizing toxicity reduction, waste volume reduction, reuse, recycling, and the separate management of organic wastes.

If current trends continue, the region will generate 24 million tons of MSW during the six-year period from 2004 through 2009, when the next policy plan will be prepared. By comparison, for the six-year period from 1997 through 2002, the region generated 19 million tons. By 2009, there will be almost 900,000 more tons of MSW produced each year than was produced in 2002. Further, unless there is a substantial increase in waste reduction and reuse, recycling, separate management of organic waste, and further processing, it is estimated that the region will landfill more than 8.5 million tons of MSW between 2004 and 2009. That will consume 97 acres of land, 100 feet deep.

Annual progress reports on waste management in the region[5] have shown that waste growth has been managed principally by landfilling, rather than by reduction, reuse, recycling, organics management, or processing. The following policies will be key in reversing that trend.

Goal 2 policies

Policy 2-1 (RR): The regional solid waste management system's highest priorities are reduction, reuse, and recycling.

Policy 2-2 (RR): The region's goal will be to recycle at least 50 percent of its MSW annually (including yard waste and source reduction credits).

Policy 2-3 (RR): Recycling collection services will:

- be available to all generators in the region
- be stable and simple
- maximize the volume of waste recycled

Policy 2-4 (RR/OM/NMSW): The reuse of materials, including organic waste and nonMSW, will foster environmental, economic, and social benefits.

Policy 2-5 (TR): Residential waste generators will have access to convenient household hazardous waste collection and management options.

Policy 2-6 (OM): Because organic wastes are better suited for management through use, reuse, recycling, or composting, management of organic waste through waste-to-energy or landfilling will be minimized to the extent feasible.

Policy 2-7 (P): To maximize resource conservation, landfill abatement and facility efficiency, waste delivered to a processing facility should, to the extent feasible, be suited to the facility's technology.

Policy 2-8 (L): Land disposal is the least preferred waste management method; however, certain wastes are appropriately managed at landfills.

Policy 2-9 (NMSW): NonMSW materials should be managed in accordance with the solid waste management hierarchy.

Policy 2-10 (NMSW): The state, region, and counties will work to reduce regulatory barriers and encourage the private sector to demonstrate innovative methods of managing nonMSW materials higher on the solid waste management hierarchy.

Policy 2-11 (NMSW): The region will promote the beneficial use of nonMSW waste.

[5] Solid Waste Management Coordinating Board. 1998-2002. Annual results reports for each year.

Policy 2-12 (CF): Public and private pricing policies should create incentives for generators to manage solid waste as high as possible on the hierarchy of preferred waste management practices.

Policy 2-13 (CF): Grants awarded by the state in the Metropolitan Area for solid waste purposes should be consistent with this policy plan.

Goal 3. To manage waste in a cost-effective manner that maximizes environmental benefits and minimizes long-term financial liability for citizens, businesses, and taxpayers.

Minnesota has learned about the price we pay for deferring waste management costs to a later date. The state's Landfill Cleanup Program, the Minnesota Superfund program, and other programs to clean polluted land are this generation's price for cheap disposal practices in the past.

Cost and risk are clearly linked when it comes to waste management. Some waste management methods are cheaper than others, but carry greater long-term or unknown risk. Some methods appear to cost more, but have measurable and significant economic benefit to the state.[6] This goal is about balance. The following policies steer the region toward a more sustainable system of managing waste, recognizing that our public resources are limited, that the costs of our solid waste system should be affordable, and that the market is an important driver in waste management decisions.

Goal 3 policies

Policy 3-1 (RR/OM): The pricing of solid waste management services should provide an incentive for waste reduction and recycling and for increased management of organic wastes by use, reuse, recycling, or composting.

Policy 3-2 (RR): The region will coordinate public information programs to ensure efficiency, consistency, and effectiveness.

Policy 3-3 (RR/OM): Market development for products derived from recycling and organics management is the responsibility of the state. The state will continue to promote the development of diverse markets for recyclables and organic waste and will work to maximize the economic benefits to the state of Minnesota.

Policy 3-4 (TR): The state of Minnesota will bear the risk and liability for transportation, management, and disposal of household hazardous waste collected in the region.

Policy 3-5 (TR): The region will coordinate toxicity reduction programs, including collection, regulation and education, to increase environmental benefits and cost-effectiveness and to minimize duplication of efforts.

Policy 3-6 (P): The region will maximize the use and capacity of existing processing facilities and minimize waste transportation costs.

Policy 3-7 (P/OM): The region will encourage innovation, new technology, and private sector participation in the orderly and deliberate development of additional processing capacity and to increase the separate management of organic waste.

[6] Minnesota Office of Environmental Assistance. 2002. *Minnesota's Recycling Industries: Economic Activity Summary.*

Policy 3-8 (P): The region will promote a competitive waste industry in a system that protects public health, welfare, safety, and the environment.

Policy 3-9 (L): The state and region recognize that landfills are a necessary component of an integrated solid waste management system. Sufficient landfill capacity should be available for all types of solid waste in order to:

- manage solid wastes that are not recycled, composted, or processed
- operate an efficient regional solid waste management system
- manage waste in the event of unscheduled facility shutdowns, abatement market downturns, or catastrophic events

Policy 3-10(L): The region will monitor and assess the need for landfill capacity for the Metropolitan Area.

Policy 3-11 (NMSW): The state, region, and counties will work to remove economic disincentives that discourage reduction, reuse, and recycling of nonMSW.

Policy 3-12 (CF): The state, region, and counties recognize that it is no longer practical to rely mainly on county revenue sources (property taxes and service charges) to fund integrated solid waste systems that implement the Waste Management Act hierarchy. A larger state funding role is necessary.

The state, region and counties will work together to obtain the appropriate level of revenues and revenue sources that finance the regional integrated solid waste system. Such financing should provide the public entities responsible for regional solid waste management under the Waste Management Act and related laws:

- sufficient revenues to meet its responsibilities
- stable revenue source(s)
- revenues targeted for regional priorities
- revenues administered with few costs and burdens

Policy 3-13 (CF): Governance of solid waste management in the Metropolitan Area should result in implementation of the Waste Management Act, related laws, and the policy plan and, specifically, should result in increased waste abatement and pollution prevention, the fair allocation of costs and liabilities, the efficient provision of services, and the provision of services that meet the diverse needs within the region.

Policy 3-14 (CF): The role and responsibilities of local government in achieving the goals of this plan are shaped by state law, local commitment to protecting the environment, and long-term and short-term economic considerations.

Policy 3-15 (CF): The solid waste management system and each of its components should account for the full costs of managing waste, including risk management, long-term care, and environmental costs.

Goal 4. To cause generators to take responsibility for the environmentally sound management of their waste and to allocate solid waste management system costs equitably among those who use or benefit from the system.

Generator responsibility has emerged as an important concept in the solid waste system. Since 1980, the role of government has shifted from "caretaker" for waste produced by residents and businesses to recognize that those who produce waste are responsible for it. In 2001, the Citizens Jury® developed a set of values that should be reflected in the metropolitan solid waste management system: second only to protecting public health and safety, the Jury® valued the system that would "aggressively foster and encourage responsibility at multiple levels (personal, corporate, government). Moreover, research and experience has shown that environmentally sound, up-front management decisions are cost-effective.

Goal 4 policies

Policy 4-1 (RR/TR): Citizens are responsible for reducing the waste they generate, for maximizing the reuse of materials, recycling what they can't reduce or reuse, for making environmentally wise purchasing decisions, and for properly managing their household hazardous wastes and problem materials.

Policy 4-2 (RR/TR): Businesses are responsible for reducing the waste they generate, for maximizing the reuse of materials, recycling what they can't reduce or reuse, for making environmentally wise purchasing decisions, and for properly managing problem materials and hazardous waste.

Policy 4-3 (RR/TR): Government will serve as a leader in waste and toxicity reduction, reuse, and recycling.

Policy 4-4 (RR): Manufacturers and retailers should design consumer products for durability, reuse, and recycling.

Policy 4-5 (TR): Manufacturers and retailers should be responsible for reducing the toxic/hazardous character of consumer products that cause environmental harm and for managing these products when they become wastes, including, but not limited to, cathode ray tubes (CRTs) that may not be placed in municipal solid waste after July 1, 2005.

Policy 4-6 (OM): Residents should manage organic waste through backyard composting or organic waste collection and management programs.

Policy 4-7 (OM): Commercial generators and public entities should manage organic waste separately from other waste streams and at the highest feasible level of the waste management hierarchy.

Policy 4-8 (P/L): Waste generators and the waste management industry are responsible for the ultimate management of waste in accordance with this policy plan. Public entities, including but not limited to state, regional, county and local governments, and school districts, will serve as leaders in making responsible waste management choices about processing their own solid waste and will procure services in a manner consistent with this policy plan.

Policy 4-9 (P): Waste from the region should be managed in *processing* facilities that:

- are designed for the waste materials accepted
- incorporate short- and long-term financial, societal and environmental costs into pricing
- meet or exceed all federal and state standards
- monitor for environmental impacts
- actively screen wastes managed

Policy 4-10 (L/NMSW): MSW and NonMSW from the region should be managed in *land disposal facilities* that:

- are designed for the waste materials accepted
- incorporate short- and long-term financial, societal, and environmental costs into pricing
- meet or exceed all federal and state standards
- monitor for environmental impacts
- actively screen wastes managed
- recover and collect methane gas and, to the extent possible, use it as fuel or to produce electricity
- provide for financial assurance for contingency action, closure, and long-term care of the landfill

Policy 4-11 (NMSW): Sustainable building design principles should be incorporated into the design, construction, operation, and maintenance of public and private buildings.

Policy 4-12 (NMSW): Public entities will serve as leaders in reducing, reusing, and recycling nonMSW through operations, procurement programs, purchasing decisions, regulatory programs, and sustainable building design programs.

Policy 4-13 (CF): The costs of waste disposal should be born by waste generators and not deferred to future generations.

Policy 4-14 (CF): Manufacturers, retailers and consumers should assume greater responsibility for the cost of collecting, transporting, and managing products at the end of their useful lives.

Part Three

Implementing the Policy Plan

As required in Minn. Stat. § 473.149, the policy plan must be followed in the Metropolitan Area.

Opportunities and challenges

Implementing a solid waste management system in accordance with these policies will require the region to take advantage of a variety of opportunities and to overcome complex challenges. This section identifies opportunities and challenges that reflect regional research and experience; however, it is important to note that it is not a comprehensive listing. The specific actions identified are provided for the consideration of state and local government, as well as citizens, business, and the waste industry. The Office of Environmental Assistance, Solid Waste Management Coordinating Board, and the metropolitan counties, in particular, will take these challenges and opportunities into account when revising the Regional/County Solid Waste Master Plan in 2004.

Reduction and recycling

Recognizing that reduction and recycling best serve the goal of resource conservation, this plan seeks to reinvigorate recycling, strengthen this element of the system, minimize confusion, and overcome complacency over past successes. To achieve this, the region will:

1. Create sustainable reduction, reuse, and recycling practices.
2. Work to reinvigorate residential recycling.
3. Link reduction, reuse, and recycling messages to create a bootstrap effect.
4. Evaluate emerging waste reduction and recycling issues.
5. Develop and support product stewardship initiatives for high volume waste streams and bulky items.
6. Promote environmentally preferable purchasing.
7. Implement a consistent and sustained public education program.
8. Target commercial generators to increase waste reduction and recycling.
9. Work with the recycling industry and municipal recycling managers to educate generators about waste reduction opportunities.

Toxicity reduction

In order to protect public health and safety, and the environment, it is critical to reduce the toxicity of the waste generated both by households and by businesses. To aggressively pursue toxicity reduction, the region will:

1. Collect household hazardous waste (HHW).
2. Collect HHW and manage it in a manner that protects public health and the environment inside and outside the United States.
3. Actively promote HHW programs and educate the public about environmental and public health risks.

4. Adopt a consistent and sustained regional public education program.
5. Provide citizens and businesses with the educational and informational tools they need for making environmentally wise purchasing decisions and for properly managing hazardous waste.
6. Work in the community to develop and integrate toxicity reduction messages and practices.
7. Adopt a consistent approach to core programs where feasible.
8. Continue to look at options to improve efficiency.
9. Coordinate the regulation of hazardous waste generators.
10. Assure compliance with hazardous waste regulations.
11. Support product stewardship initiatives, particularly those focused on cathode ray tubes (CRTs) and other electronic products.
12. Target business education and regulatory initiatives to higher risk waste streams.
13. Support shared responsibility for costs of managing high-risk products.
14. Demonstrate and model appropriate generator responsibility through procurement practices and waste management decisions.

Organic waste management

As an emerging component of the regional system, organics management represents a new opportunity but faces the challenges of the unknown. Thus, it will be important to:

1. Develop a clear understanding of the definition of organic waste.
2. Communicate organic waste management opportunities to generators and the waste industry.
3. Implement a cost-effective collection system for organic waste.

Processing

While processing successfully results in landfill abatement, it has also required substantial public investment in infrastructure and subsidy of operating costs. In order to maintain its commitment to processing, the region will:

1. Prepare a feasibility study and a business plan for a regional or sub-regional processing system that could be put into effect at the termination of the refuse-derived fuel (RDF) service agreements.
2. Allocate financial risks associated with building additional processing capacity.
3. Coordinate operations of landfilling and waste-to-energy facilities in case of overcapacity, catastrophic events, maintenance schedules, etc. to increase waste management efficiencies.
4. Increase efficiencies and minimize transportation costs in managing public entity waste.
5. Remove current physical, legal/regulatory, and financial constraints on the capacity to burn waste for energy recovery.
6. Support financial incentives for waste processing.

Landfilling

While landfills will continue to play a significant role in the solid waste management system, the challenge is to ensure that the environment is protected now and for generations to come. The region will:

1. Assure that long-term care and financial assurance for closed landfills matches the need for environmental protection.
2. Evaluate bioreactors and leachate recirculation as a potential opportunity for increased capacity and as a challenge for environmental protection.
3. Educate the public about the role of landfills in an integrated waste management system.

NonMSW Management

While the region's primary focus has been on the management of mixed municipal solid waste, the region generates almost as much nonMSW. In order to maximize management practices in accordance with the hierarchy, the region will:

1. Encourage pilot projects to demonstrate the utilization of waste combustor ash by the public or private sector.
2. Encourage programs to reduce, reuse, and recycle construction materials, such as gypsum, shingles, and wood.
3. Promote reduction and recovery of demolition materials via policies that emphasize deconstruction principles.
4. Enhance accurate and complete accounting of all data as needed to evaluate the performance of the system, including the monitoring of nonMSW landfill capacity.
5. Coordinate public education programs to ensure efficiency, consistency, and effectiveness.
6. Coordinate state, regional, and local government guidance on proper management of nonMSW materials.
7. Promote product design that minimizes the generation and toxicity of industrial waste and encourages its reuse and recycling.
8. Encourage local governments and communities to design and construct sustainable buildings that reduce waste and toxicity, conserve energy and natural resources, promote durability and longevity, and improve occupant health.
9. Support the incorporation of sustainable design principles into state and local building codes and policies.

Cost and finance

Managing waste in accordance with the hierarchy is more expensive than landfilling and has required significant public subsidies, in the absence of regulatory tools. As the waste stream grows and expenses increase, the region will:

1. Work within a market driven system to achieve environmental goals.
2. Continue to develop the system to meet the needs of a growing population and economy while seeking to minimize the burden to taxpayers.
3. Continue to evaluate and modify, as needed, the governance of the regional solid waste management system.
4. Maximize the synergy between economic development and waste management activities.
5. Investigate incentives to encourage the private sector to assume risks related to the financing and development of processing facilities.
6. Secure stable and sufficient funding for the regional solid waste management system. All revenues from the Solid Waste Management Tax should pay for solid waste needs.
7. Ensure accurate and complete accounting of all data.

Tools for plan implementation

Research needs

High-quality research and data strengthens the planning process by providing an objective base of information that planners can use to explore and evaluate policy and strategy options, and to document progress. A broad-based measurement system, tied directly to the strategies in this policy plan, will provide critical information on the status of the Metropolitan Area's complicated system of facilities and programs.

The metropolitan counties and the state will identify, collect, and analyze data that is central to assessing progress toward the policy plan's vision and goals. In their master plans, the counties, with assistance from the state, will identify the key outcomes associated with the policy plan, and determine how best to assess progress toward each of those outcomes. The counties may set targets for each measure. MSW recycling rates and processing information, as specified in statute, will be among those measures. Rather than focusing solely on the associated program activity level, the measures of progress will include, to the extent possible, measures of direct results and outcomes.

Planning and reporting

The WMA requires the metropolitan counties to prepare solid waste management master plans that implement the policy plan. The master plans must describe specific projects and activities as well as information on specific financial commitments and implementation schedules. Any solid waste activity undertaken by a city or township must be consistent with the policy plan and the county's master plan.

In addition, the counties are required to submit annual/certification reports and SCORE reports to the OEA on their progress in implementing the programs that are identified in their master plans. The reports must also provide information necessary to prepare the legislatively required Metropolitan Abatement Progress Report.

Furthermore, the WMA requires the OEA 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 OEA must review:

- waste facility permit applications
- waste supply and processing contracts
- Certificate of Need requests

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

Requirements for county master plans

Metropolitan counties must prepare and submit to the OEA revised solid waste master plans after the OEA director adopts this revised *Metropolitan Area Solid Waste Policy Plan*. County master plans must be comprehensive and clearly describe county policies, plans, and implementation strategies. The master plan must describe the specific projects and activities to be implemented during the planning period by the county, cities, and townships within the county, and the private sector. The financial commitment and other resource commitments needed to implement those projects and activities must also be described. Minn. Stat. § 473.803, subd. 1, contains the general requirements for each county's solid waste master plan (see Appendix G).

Several options exist for the development of county solid waste master plans, including the development of a regional implementation plan, development of some aspects of the county master plans by the SWMCB, or the development of individual county master plans. The approach taken will be decided in discussions between the OEA and counties.

These plans must be submitted by December 31, 2004. However, extensions to this date may be granted at the discretion of the director. The OEA will review county master plans in accordance with the requirements of Minn. Stat. §§§ 473.149, 473.803, and 473.848. Master plans must conform to and implement the policy plan and be compatible with each other. If the OEA director does not approve a master plan, the county must submit a revised plan within 90 days.

Implementation monitoring

County annual/certification reports

The metropolitan counties are required to submit annual solid waste reports and certification reports to the OEA for approval (Minn. Stat. § 473.803, subd. 3 and § 473.848, subd 2). The reports must provide information on waste generation and management activities, as well as progress in achieving the policies and objectives in the policy plan. The reports must also detail the quantity of waste generated and not processed prior to disposal; the reasons the waste was not processed; a strategy to ensure that the waste will be processed, including a timeline for implementation; and progress the county has made in reducing the amount of unprocessed waste landfilled.

The OEA will use the following criteria to evaluate the annual/certification reports:

1. A comparison of the quantity of waste processed and disposed of in landfills in the current reporting period, with the quantity of waste processed and disposed of in previous reporting periods.

2. Whether a substantial portion of the county's processible MSW stream is currently being processed through waste-to-energy, refuse-derived fuel production, and/or MSW composting.

   a) If yes, gives approval and considers if there are any pending concerns or further issues that need to be addressed.

      i) If yes, approve report with conditions that address pending concerns and issues.

      ii) If no, approve report with no conditions.

   b) If no, means the county must demonstrate, measurable efforts to establish or utilize processing capacity for waste that would otherwise be landfilled.

      i) If yes, approve report with conditions.

      ii) If no, disapprove report, negotiate with county to develop and implement specific techniques to reduce unprocessed waste.

If the OEA finds that the reports indicate that the counties are achieving the landfill abatement results required under law, the reports will be approved. Any report that does not demonstrate compliance with the criteria will be disapproved. If a report is disapproved, the OEA staff will work with the county to develop specific methods within specific time frames to achieve the landfill abatement objective. The OEA's action shall direct staff to pursue specific programs that will allow the county to achieve the OEA's landfill abatement objective.

Legislative reports

The OEA will submit a *Metropolitan Abatement Progress Report* to the Legislature that describes the progress made in implementing the policy plan, including 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 Director's Plan. The report must recommend any legislation that may be required to implement the plan.

If in any year the OEA reports that the objectives of the policy plan have not been met, the OEA 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). The *Metro Abatement Progress Report* will also include the *Metropolitan Landfill Abatement Account (MLAA) Expenditures and Activities Report* required by Minn. Stat. § 473.846, and the *Metropolitan Cost and Finance Report* required by Minn. Stat. § 473.149, subd. 6.

Metropolitan Landfill Abatement Account

Minn. Stat. § 473.844 authorizes the OEA to award grants in the Metropolitan Area for landfill abatement activities. Funding for the MLAA programs is generated from a $2 per cubic yard or $6.66 per ton surcharge on MSW disposed of at the two landfills in the Metropolitan Area.

MLAA funding programs

The MLAA funding program is designed to assist the region in meeting regional goals for landfill abatement. The MLAA program is intended to assist in establishing an integrated and coordinated solid waste management system in the region, consistent with the WMA hierarchy (Minn. Stat. § 115A.02), and implement the policies and programs outlined in policy plan.

Local Recycling Development Grant Program

The LRDG Program provides grants to the seven metropolitan counties. The LRDG Program is designed for planning, developing, and implementing new, enhanced, or more effective source reduction, yard waste composting, and recycling programs for commercial/industrial/institutional and residential generators of MSW. Counties are required to support and maintain effective municipal recycling as a condition of receiving LRDG funds and must match the LRDG funds with an equal county contribution.

Legislative initiatives

The OEA, the region, and the counties will review legislative proposals for consistency with the vision, goals, and policies contained in this policy plan and will develop proposals as necessary to further the implementation of this policy plan.

Metropolitan statutory requirements

The Metropolitan Area solid waste system is governed by the requirements of the Waste Management Act (WMA), Minn. Stat. § 115A and Minn. Stat. § 473. For full text of these statutes: www.leg.state.mn.us/leg/statutes.asp.

Minn. Stat. § 115A.02 sets forth the state of Minnesota's goals for the management of waste within the state as follows:

> (a) It is the goal of this chapter to protect the state's land, air, water, and other natural resources and the public health by improving waste management in the state to serve the following purposes:

(1) reduction in the amount and toxicity of waste generated;
(2) separation and recovery of materials and energy from waste;
(3) reduction in indiscriminate dependence on disposal of waste;
(4) coordination of solid waste management among political subdivisions; and
(5) orderly and deliberate development and financial security of waste facilities including disposal facilities.

b) The waste management goal of the state is to foster an integrated waste management system in a manner appropriate to the characteristics of the waste stream and thereby protect the state's land, air, water, and other natural resources and the public health. The following waste management practices are in order of preference:
(1) waste reduction and reuse;
(2) waste recycling;
(3) composting of yard waste and food waste;
(4) resource recovery through mixed municipal solid waste composting or incineration;
(5) land disposal which produces no measurable methane gas or which involves the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale; and
(6) land disposal which produces measurable methane and which does not involve the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale.

In addition, Minn. Stat. § 473.149, subd. 1 (2002) imposes specific planning and solid waste reporting requirements for the Metropolitan Area. These requirements include:

- The preparation of the *Metropolitan Solid Waste Management Policy Plan* by the OEA director.
- The preparation of master plans by the metropolitan counties that implement the policy plan.
- Administration of various metropolitan reviews (solid waste facility permits, county plans, waste supply and processing contracts, county certification reports) by the OEA director for consistency with the policy plan.
- The preparation of a biennial metropolitan abatement progress report by the OEA director that must be submitted to the State Legislature.
- Administration of the MLAA by the OEA to fund abatement programs.

Minn. Stat. § 473 provides metropolitan counties a wide range of powers to implement the goals of the state and the policy plan, including, but not limited to, the authority to acquire, finance, and operate solid waste facilities; to enter into contracts for solid waste services; to regulate the management, collection, and transportation of solid waste and hazardous waste; to work jointly with other counties; and to establish service charges to pay the costs of waste management services.

Part Four

Overview of Metropolitan Area Solid Waste Management System

About 2.6 million people live in the Metropolitan Area and about 1. 5 million people are employed in the Metropolitan Area. In addition, almost one-half of the tourists visiting Minnesota visit the Metropolitan Area. In 2002, an estimated 3.4 million tons of mixed municipal solid waste (MSW), and 2.4 millions tons of non-MSW (such as construction and demolition waste, industrial waste, and medical waste) were produced, collected, transported, and managed in some manner in the Metropolitan Area. The system designed to deal with this huge amount of waste is composed of private and public services that continually handle the variety of materials coming out of homes, businesses, and institutions in the region. That waste is managed by a regional solid waste management system.

For the purposes of this section, unless otherwise noted, the Metropolitan Area includes the six SWMCB member counties (Anoka, Carver, Dakota, Hennepin, Ramsey and Washington).

Description of the Metro Area solid waste management system

In 1980, the Waste Management Act (WMA) mandated a two-fold strategy for managing solid waste: 1) pursue the highest methods of solid waste abatement through source reduction, recycling, and resource recovery;, and 2) minimize the use of landfills and make those remaining environmentally sound. Metropolitan counties were charged with planning, developing, and managing an integrated solid waste management system. Since the passage of the act, the Metropolitan Area has witnessed an evolving integrated municipal solid waste system. The result of the legislative directives and the active response of the metropolitan counties is a successful solid waste management system, which achieves some of the highest recycling and resource recovery levels in the United States.

Metropolitan counties have developed an integrated approach to mixed municipal solid waste management. The approach reflects the state's preferred waste management practices delineated in Minn. Stat. § 115A.02, emphasizing waste reduction and reuse, recycling, and source-separated composting, over waste-to-energy and land disposal. The counties have developed reduction, recycling, and household hazardous waste programs as well as three waste-to-energy processing facilities. The private sector has been and continues to be a key participant in the system.

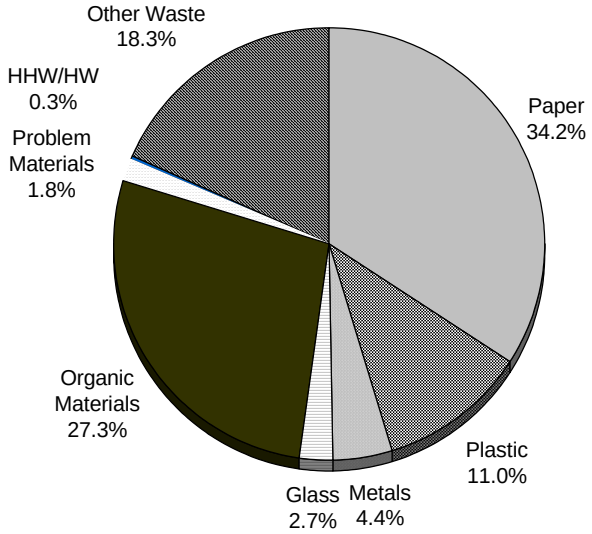
Waste composition

In 1999, the SWMCB and the OEA performed a waste composition study to analyze the character of the MSW deposited at landfills and resource recovery facilities in the region. That study provides valuable information about exactly what materials people in the region are throwing away. This data is important in developing solid waste policy. For example, the study highlights the opportunity to reinvigorate recycling—in spite of a recycling rate of almost 50 percent, large volumes of recyclable materials are still thrown out each year.

Using the data, one can calculate that the trash tossed by an average Twin Cities' household in one year contains the following recyclable materials:

- Over 100 pounds of newspaper—a stack over 3 feet high
- 500 aluminum cans
- 400 plastic beverage bottles
- Equivalent of 28 reams of mixed paper

Figure 4-1. Waste composition



Collection

There are 243 entities licensed by metropolitan counties to collect and transport MSW. These entities have licensed about 1,600 vehicles for the collection and hauling of MSW. The region does not license non-MSW, recycling, or organic waste management haulers, so no count is available for those types of firms. State law requires waste haulers to provide volume-based service.

Residents in 39 of 167 communities in the Metropolitan Area (including half of Minneapolis) are served by "organized collection," in which the city or township arranges for service by contract or provides its own collection service. These communities represent 30 percent of the households in the region (although not all multi-family residences in these cities are included in these services). There are no organized collection arrangements for commercial waste, although some communities allow small businesses access to organized collection services.

Recycling collection services are provided to residents in two general ways: by subscription, in which they contract with an individual hauler for service, or by municipal contract. In the Metropolitan Area, there are 94 municipalities in which there is a government contract for service (half of Minneapolis is collected by city crews), which represents 67 percent of the households in the region. Commercial recycling collection services throughout the region are provided by subscription service.

Waste that is collected from generators is hauled directly to a local resource recovery facility or land disposal site, or may be taken to a transfer station for aggregation and transport to facilities located farther away. In the Metropolitan Area, there are 19 transfer stations. Of these, 14 transfer stations are licensed to accept MSW, and the remaining five may accept only construction and demolition waste. Two of the transfer stations are publicly owned; the others are all privately owned.

Toxicity reduction

Waste that is hazardous (as defined by federal, state, and local law) poses environmental and public health and safety risks. Efforts to manage the risks associated with the hazardous character of waste fall into the category of toxicity reduction.

There are two principal ways the Metropolitan Area addresses the hazardous character, or toxicity, of waste. The first is aimed at residents and consists of substantial efforts to encourage reduction of wastes with hazardous character, coupled with a network of household hazardous waste programs operated by counties. The second is aimed at commercial generators of hazardous waste and includes the regulation of federal Resource Conservation and Recovery Act standards for businesses in the Metropolitan Area.

Household Hazardous Waste Program

Household hazardous waste (HHW) collection programs play an important role in removing toxic materials from the waste stream for proper management. Each of the metropolitan counties has at least one year-round site for the collection of HHW, and most augment that site with seasonal, temporary, satellite, or special one-day collections. These sites operate pursuant to an agreement between the counties and the MPCA that addresses financial risk, and a Reciprocal Use Agreement, which allows residents to use any of the HHW collection sites located in the six Metro Area SWMCB counties.

The following figures show the growth in use of HHW sites from 1996-2002 and growth in the amount of material collected.

Figure 4-2. Pounds of HHW collected

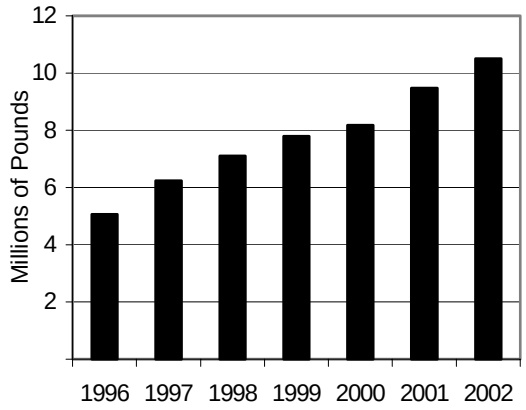
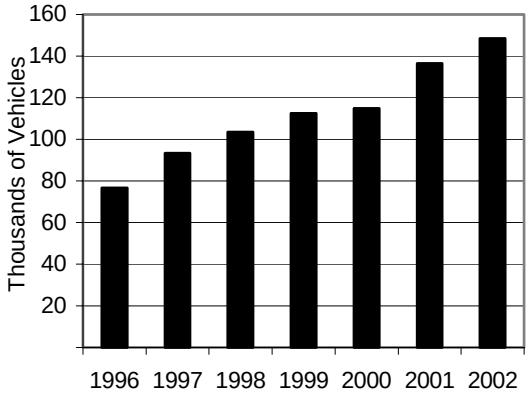
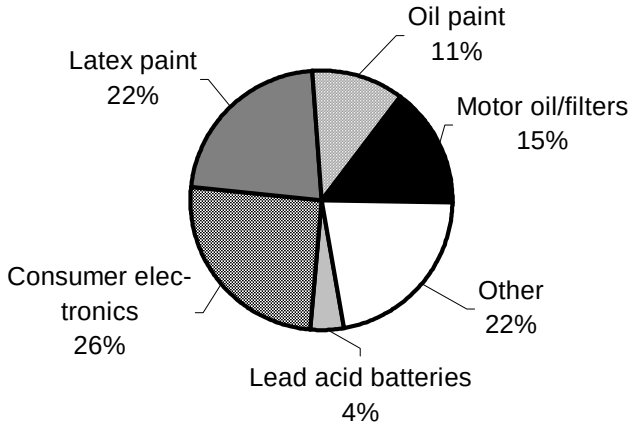


Figure 4-3. Utilization of HHW facilities



Of the hazardous waste collected by HHW facilities in 2002, 85 percent of it was recycled or fuel-blended, 2 percent was taken from product exchange shelves for reuse, and the remaining 13 percent that could not be reused, recycled, or fuel-blended was managed at hazardous waste incinerators or landfills.

Figure 4-4. Problem materials collected, 2002



Regulation of commercial hazardous waste

The metropolitan counties inspect, train, and license hazardous waste generators. The table below shows the number of licensed hazardous waste generators and the number of inspections of hazardous waste generators, respectively. Counties also license and inspect hazardous waste transfer, storage, and processing facilities.

Table 4-1. Hazardous waste generators and inspectors

Year	1996	1997	1998	1999	2000	2001	2002
Total licensed hazardous waste generators	9,099	9,260	8,773	9,591	9,805	9,962	9,804
Total hazardous waste inspections	3,785	5,315	4,252	4,460	4,471	4,863	4,587

Recycling

Residential recycling programs in the region consist of curbside collection and drop-off sites, and include recycling services for both single-family and multi-family housing. Curbside recycling programs in the region are provided by haulers through a contract with a municipality, or are provided under licensing conditions of a municipality (subscription service). Most counties provide some funding for municipal programs. The private sector, municipalities, and two counties provide numerous public drop-off locations for one or more types of recyclables.

Additionally, many businesses have active recycling programs, and commercial recycling accounts for most of the recycling in the region. The success of the region's recycling program is not only a result of county and city efforts, but of the significant contribution the private sector has made to the advancement of recycling through the development of markets, provision of drop-off locations, collection of recyclable materials, and the many other elements needed to develop the recycling infrastructure.

Recyclables that are collected are taken either directly to a recycling market, a recycling broker, or to a materials recovery facility (MRF). Materials commonly recovered for recycling include:

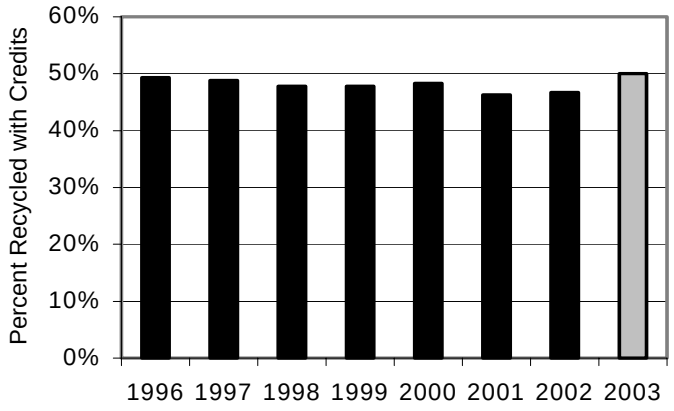
- paper/fiber (including corrugated, mixed paper, newspaper, office paper, magazines, phone books, boxboard
- glass bottles
- metals
- plastic bottles and film
- food waste (to animal feed)
- wood pallets
- tires
- used oil
- appliances
- certain batteries

Three firms operate MRFs that handle residential recycling materials: Waste Management in Minneapolis, BFI in Minneapolis (with a partial MRF in Inver Grove Heights), and E-Z Recycling in Saint Paul.

Results

The region's recycling rate dropped from 49.3 percent in 1996 to 46.3 percent in 2002, including source reduction and yard waste credits, falling short of the regional 50 percent recycling goal. However, total tons recycled increased from 1.2 million tons in 1996 to 1.3 million tons in 2002. Despite the challenge to maintain the region's recycling rate, Minnesota and the Metro Area still remain national leaders in providing curbside recycling service and recovering recyclable material.

Figure 4-5. SWMCB counties recycling rate



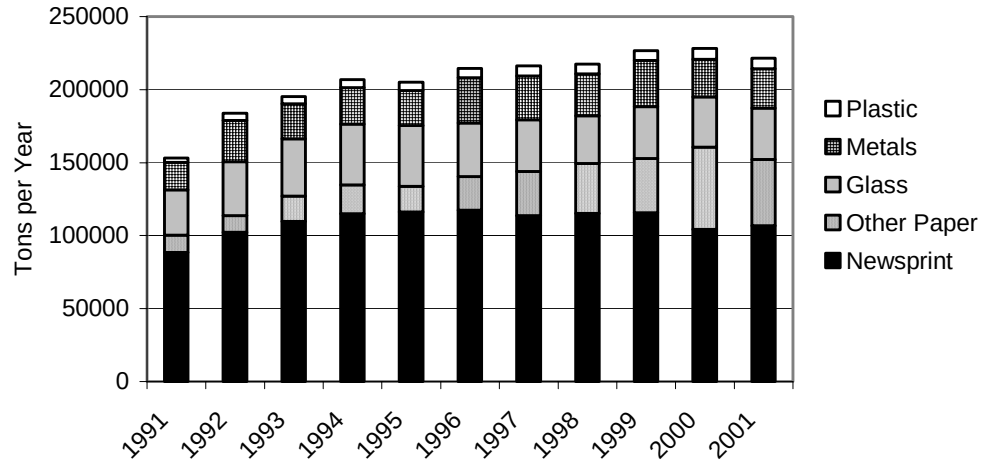
** 2003 figure is an estimate from Master Plan Outcome for 2003*

Materials recycled in 2002 came from the following sources:

- 73% from commercial/industrial/institutional (CII) recycling
- 23% from residential recycling
- 4% from mechanical/hand-sort recycling

In 2002, residential waste made up 45 percent (1,525,000 tons) of the total waste stream and CII made up 55 percent (1,864,000 tons) of the total. Historical SWMCB recycling data show that 20 to 25 percent of residential waste is recycled, while about 50 percent of CII waste is recycled. The following figure shows the historical trend for types of materials recycled, through 2001.

Figure 4-6. Residential recycling by major material groups



Yard waste

Yard waste is prohibited by law from being mixed with other MSW. Yard waste is collected either by MSW haulers using separate collection vehicles, special yard waste collectors (such as lawn services), or by residents who drop off yard waste at collection sites. Yard waste in the region is managed through county, municipal, and private programs. Two counties operate yard waste collection sites that allow citizens to drop off yard waste and pick up compost. However, municipalities or private firms sponsor most yard waste sites in the region. Since the early 1990s, yard waste volumes have not been reported to the OEA, so specific data is unavailable on yard waste quantities managed in the region.

Organic waste management

Food waste, wood, diapers, and other organic materials in total comprise 27 percent and paper comprises 34 percent of the MSW stream, according to the *Statewide MSW Composition Study (March 2000)*. Managing this organic waste offers an emerging opportunity to increase waste reduction, reuse, recycling, and processing of MSW. Organic waste management encompasses a number of methods, including:

- waste reduction
- food-to-people programs
- food-to-animal feed programs
- animal feed manufacturing
- backyard composting
- on-site institutional composting
- source-separated organics composting

Until this year (2003), most organic waste management efforts have been private sector initiatives, with the public sector involved mostly in waste reduction education, pilot programs, and distribution of residential composting bins. There are numerous food-to-people and food-to-hog programs in the Metropolitan Area. Endres Processing processes food waste into animal feed. NRG Processing Solutions processes organic waste, including paper products, into mixed compost.

Processing and resource recovery

Processing means the treatment of waste after collection and before disposal. Waste processing is referred to in the list of waste management methods identified in Minn. Stat. § 115A.02, as "resource recovery through mixed municipal solid waste composting or incineration."

Currently, there are three waste processing facilities serving the Metropolitan Area:

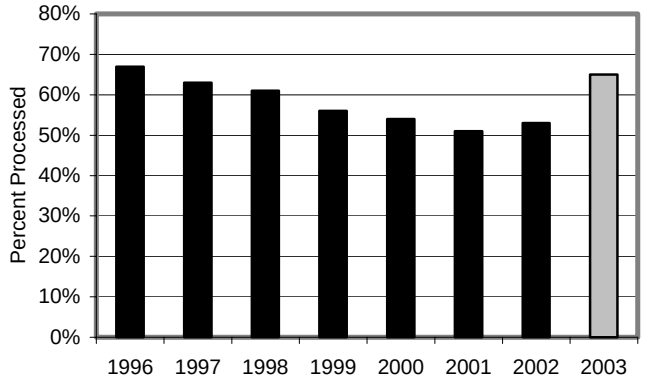
- Hennepin Energy Resource Company (HERC) in Minneapolis uses a mass-burn technology to combust MSW. The facility produces steam for use in making electricity and recovers ferrous metal for recycling from the ash. HERC is limited to burning 365,000 tons annually, but the design capacity is 442,380 tons per year.
- Ramsey/Washington County Resource Recovery Facility (NRG-Newport) is a refuse-derived fuel (RDF) processing plant. The facility is owned and operated by NRG Energy, Inc. (NRG). Waste is delivered, shredded, and separated into three waste streams: refuse-derived fuel (RDF), ferrous metal, and heavier residue. RDF is transported to Xcel Energy power plants in Red Wing and

Mankato where it is burned to generate electricity. The ferrous metal is recycled, and residue is delivered to a landfill. NRG-Newport's permitted capacity is 500,000 tons per year.

- Elk River Resource Recovery Facility (Xcel Energy-Elk River) is also an RDF processing plant. It is owned by Xcel Energy and is operated by NRG. The RDF produced by NRG is burned to create electricity at the Great River Energy combustion facility at its Elk River electric power station. Waste is processed similar to the NRG-Newport facility. Xcel Energy-Elk River's permitted capacity is 468,500 tons per year, or 1,526 tons per day. Anoka, Hennepin, Sherburne Counties, and the Tri-County Solid Waste Management Commission (Benton, Stearns, and western Sherburne Counties) signed separate service agreements with Xcel Energy.

The three processing facilities serving the SWMCB region have a combined processing capacity of 1,165,000 tons, which did not change between 1996 and 2002. Although the total amount of waste processed increased between 1996 and 2002, the percentage of total available waste that was processed fell from 67 percent in 1996 to 53 percent in 2002, due to the steady growth in the waste stream. The region delivered 1.27 million tons and processed 1.09 million tons of waste in 2002. The following graph shows the percent of MSW processed in the region from 1996-2002, and the Regional Solid Waste Master Plan outcome for 2003.

Figure 4-7. Percent MSW processed in SWMCB region



** 2003 figure is an estimate from Master Plan Outcome for 2003*

Landfills

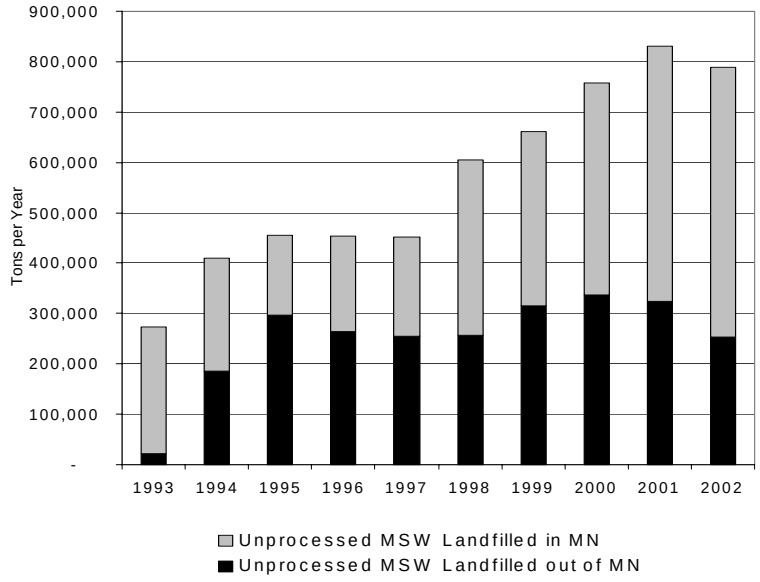
Two MSW landfills are located in the region, both in Dakota County. Burnsville Sanitary Landfill is located in Burnsville and is owned by Waste Management Inc. (WMI). Pine Bend Sanitary Landfill is located in Inver Grove Heights and is owned by BFI Waste Systems of North America, Inc. (BFI). Burnsville and Pine Bend Landfills installed methane gas-to-energy systems in 1994 and 1996, respectively. These systems burn the methane gas generated by decaying waste in the landfills to produce electricity.

There are several non-metropolitan MSW landfills located within and outside Minnesota that receive waste generated in the Metropolitan Area. The facilities located in Minnesota include Spruce Ridge Landfill in McLeod County (WMI), and Elk River Landfill in Sherburne County (WMI). Facilities located outside Minnesota include Central Disposal Landfill in Lake Mills, Iowa, and Dickinson County Landfill in Spirit Lake, Iowa, both owned by Waste Management; the BFI Sarona Wisconsin Landfill, and the Seven Mile Creek Landfill owned by Superior Services near Eau Claire, Wisconsin; and Waste Management's Timberline Landfill near Ladysmith, Wisconsin.

Trends in landfilling

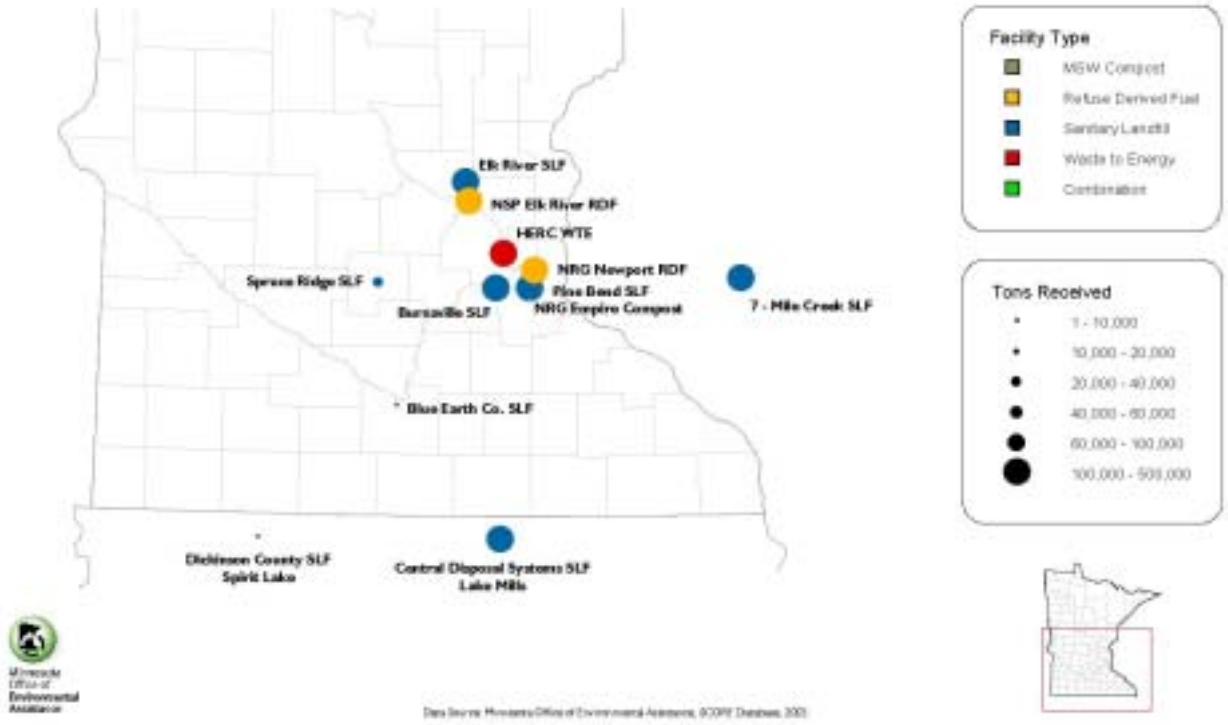
Landfilling increased from about 450,000 tons in 1996 to just under 800,000 tons in 2002. Out-of-state landfilling remained relatively constant at approximately 250,000 tons. The increase in landfilling was seen at in-state landfills, which rose from nearly 200,000 tons in 1996 to over 500,000 tons in 2002. Figure 8 shows the trend in in-state and out-of-state landfilling.

Figure 4-8. Landfilling of metropolitan MSW, in Minnesota and out of state



The map below shows processing and land disposal facilities that reported receiving waste from SWMCB counties in 2001. See Appendix E for a summary of remaining landfill capacity.

Figure 4-9. Facilities receiving MSW from SWMCB counties in 2001



NonMSW management

NonMSW includes non-hazardous industrial waste, construction/demolition debris (C&D waste), materials banned from disposal with MSW, problem materials, infectious waste, and many other waste streams that are not MSW or otherwise defined or regulated as hazardous waste. This policy plan continues to recognize the need to place greater attention on nonMSW management and the need for better data to best determine environmentally sound management practices.

Several materials are separated for recycling at some construction and demolition transfer stations and landfills, including concrete, bituminous, aluminum, copper, steel, brick, mattresses, appliances, and tires. Many other recyclable materials have the potential to be separated from C&D waste. The private sector owns and operates most of the Metropolitan Area management facilities for nonMSW waste streams. There is, however, some public sector activity in managing certain nonMSW materials in the Metropolitan Area, such as tree waste processing and crushing and recycling concrete or road base material.

Table 4-2. Metro Area nonMSW management facilities

Type of facility	Name of company	Location
Construction and demolition waste		
C&D waste processing	Materials Recovery, Ltd All Star Disposal	Dakota County
Wood waste processing	Dunham Bros.	Dakota County
	SMC-Rosemount Wood Waste.	Dakota County
Wood waste and shingles processing	SKB	
Landfill	SKB Rich Valley Demolition Landfill owned by SKB Environmental, Inc	primarily in Inver Grove Heights with a small portion in Rosemount
	Dawnway Demolition Landfill owned by Carl Bolander & Sons, Inc.	located primarily in South St. Paul, a small portion in Inver Grove Heights
	Burnsville Dem/Con Landfill, owned by WMI	Burnsville, Scott County
Concrete & asphalt processing	Commercial Asphalt Northwest Asphalt	Scott County Scott County
Concrete & asphalt processing also processes bottom ash and shingle waste	Sheily	Scott County
Transfer stations accepting C&D waste only. (Some MSW transfer stations also accept C&D waste.)	Shamrock Disposal	Anoka County
	Veit Transfer SKB Transfer	Hennepin County
	Veit Disposal Systems Keith Krupenny & Son Disposal Service Ray Anderson & Sons Red Arrow Waste Disposal	All in Ramsey County
	Lloyd's Transfer Station	Scott County
Special waste		
Tire processing	First State Tire	Anoka County:
	Greenman, formerly BFI Tires	Scott County
Street sweepings processing	Clean Sweep	Scott County
Medical waste processing facility	Healthcare Waste Solutions Stericycle	Anoka County
	Stericycle	Ramsey County
Bituminous material processing	Bituminous Roadways	Dakota County
Landfill for the disposal of residuals from the production of alum at Koch Refinery.	Koch Spent Bauxite Landfill: An expansion of lined, bauxite disposal basin was approved in 1992; 3.8 acres, with a capacity of 60,000 cubic yards.	Rosemount, Dakota County
Food Waste Processing (into livestock food supplement)	Endres Processing	Dakota County
Industrial waste		
Landfill for disposal of non-hazardous industrial waste & MSW combustion ash	BFI Pine Bend Landfill Waste Management Burnsville Landfill SKB, Inc.	Dakota County

Waste generation and waste forecasts

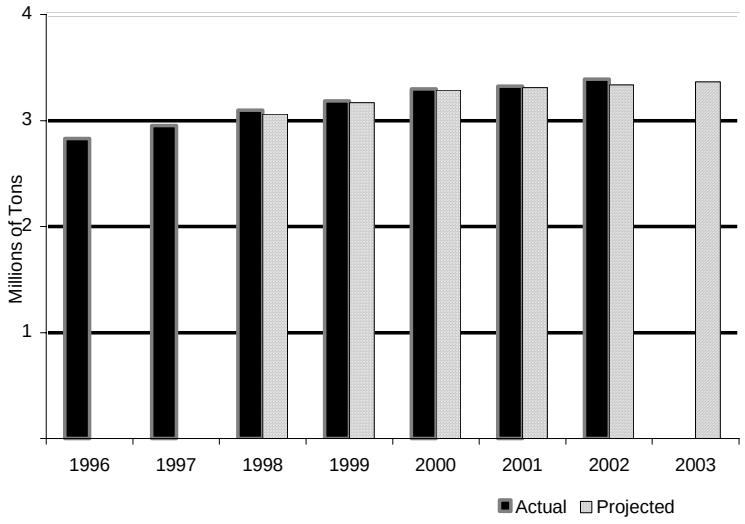
Waste management haulers report the amount of MSW and recyclables they collect. This data is aggregated by each county and provided annually in a summary report. Waste generation forecasts are developed by using historical growth rates to predict future waste generation.

The MSW data collection system is relatively mature when compared to the nonMSW data collection system. Due to data quality issues, nonMSW generation forecasts are not available.

Waste generation: 1996-2002

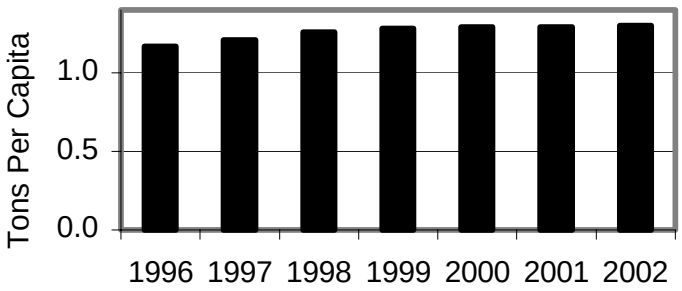
Municipal solid waste generation grew from 2.8 million tons in 1996 to nearly 3.4 million tons in 2003, slightly exceeding the *Regional Solid Waste Master Plan* projection.

Figure 4-10. MSW generation



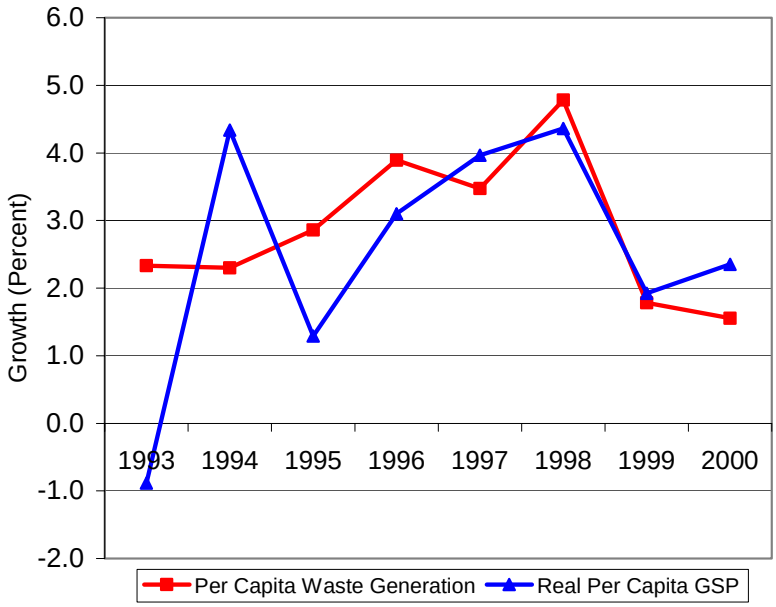
Factoring in population growth, however, waste growth appears to be slowing. Waste generation per capita has remained relatively stable, as shown in this graph.

Figure 4-11: Waste generation per capita



The reasons for the plateau are not known, although it is likely that the continued slow economy in 2002 had an impact on waste generation. The OEA has conducted research of the relationship between economic factors and waste generation. The following graph shows the relationship between a key economic indicator for the state (real per capita gross state product) and a waste indicator (per capita waste generation).

Figure 4-12. Per capita gross state product vs. per capita waste generation



Waste generation forecasts

The Metropolitan Area is projected to experience significant growth in population and employment over the next 20 years. There will be 22 percent more people living in 29 percent more households, working in 26 percent more jobs in 2020 than in 2000. The following table shows the Metropolitan Council projections for the six SWMCB counties:

Table 4-3: Metropolitan Council's demographic growth projections

	2000	2010	2020	Change 2000 to 2020	Percent change 2000 to 2020
Population	2,552,558	2,829,980	3,111,330	558,772	22%
Households	990,762	1,130,930	1,277,180	286,418	29%
Jobs	1,530,824	1,763,890	1,929,020	398,196	26%

The MSW generation forecasts prepared for this policy plan estimate that MSW generation will continue to grow at a significant rate over the next 20 years in the Metropolitan Area. The growth in waste generated will result from residential, commercial, and industrial activities. These increases will result in more waste generation, both non-MSW and MSW.

For example, the National Home Builders Association estimates that construction of a typical home generates two 30-cubic yard containers of construction waste, and contains the following major components:

- sawn lumber: 1,600 pounds
- engineered lumber: 1,400 pounds
- wallboard: 2,000 pounds
- cardboard: 500 pounds

Thus, while the current system manages over 3.3 million tons of waste per year, it is estimated that the system will have to manage approximately 4.5 million tons of waste per year by 2009. A summary of the forecasts for the region is presented below, using 11-year, 8-year, and 4-year data to project trends. For comparison purposes, the second figure shows the same waste forecast methodology for the seven-county Metropolitan Area.

Figure 4-13: Waste generation forecast for SWMCB region

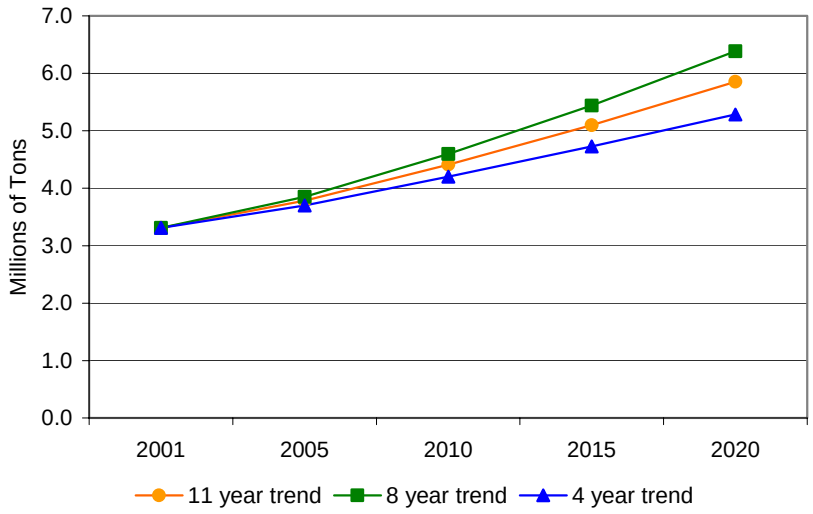
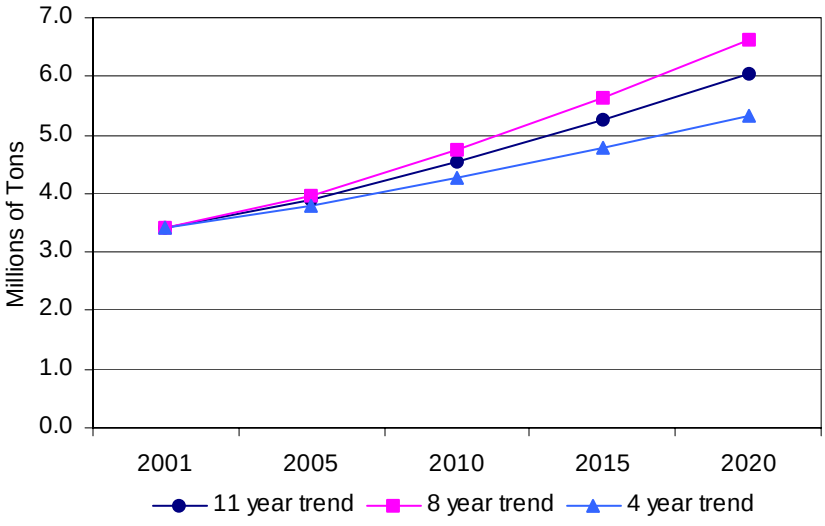


Figure 4-14: Waste generation forecast for 7-county Metropolitan Area



Benefits and values of the system

As the population, employment, and waste generation in the Metropolitan Area continue to grow, it is important to understand the benefits accruing from the on-going and significant investment in the regional solid waste management system. This section summarizes some of the research undertaken by the state and region, quantifying resource conservation and economic benefits.

Resource conservation benefits

Since the adoption of the Waste Management Act in 1980, one of the goals of the regional integrated solid waste management system has been to conserve resources, including land, air, energy, and water. The contributions of recycling and processing toward meeting this goal are summarized below.

Recycling

The National Recycling Coalition and the Recycling Association of Minnesota calculate annual resource conservation benefits from recycling. The summary table below shows that there are significant resource conservation benefits from recycling. In addition, research shows that the region would need 15 additional acres of landfill space per year, 100 feet deep, if it did not recycle.

Table 4-4: Recycling resource conservation benefits

	SWMCB residential	SWMCB CII	SWMCB total
Greenhouse gas emissions reductions in passenger cars equivalent (# of cars off the road per year)	127,144	512,090	639,234
Energy savings in per household equivalent (# of houses/year)	70,920	215,252	286,172
Number of trees saved	1,590,636	1,293,444	3,170,252

Processing

Research shows that processing waste into energy at the three facilities serving the Metropolitan Area produces energy equivalent to that needed to provide 78,000 homes with electricity for a year. In addition, research shows that the region would need 11 additional acres of landfill space per year, 100 feet deep, if it did not process its waste.

Economic benefits

The OEA's report, *Minnesota's Recycling Industries: Economic Activity Summary* (2002), examined the role of recycling in Minnesota's economy. Specifically, the report analyzed the economic activity resulting from those businesses that remanufacture recyclables into secondary materials such as paper, plastic, metals, and glass. It also measured economic activity related to the recycling infrastructure, including collecting, processing, and marketing recyclables in Minnesota.

Minnesota's value-added recycling manufacturers

More than two-thirds of the economic activity related to recycling in Minnesota is generated by remanufacturing recycled materials into new products—value-added recycling manufacturing. The largest segment of the value-added recycling industry is made up of manufacturers who use recycled paper, post-consumer paper, and old corrugated cardboard (OCC) as a raw material source. Rock Tenn (St. Paul) and Liberty Paper (Becker) are major companies using this feedstock. Much of their raw material (recycled paper and OCC) comes from Minnesota recyclers.

Minnesota's value-added manufacturers generated an estimated $93 million in state tax revenue and employ an estimated 8,700 people in direct jobs. These jobs in turn support another estimated 20,000 people downstream in indirect and induced jobs. All together these jobs, which pay an estimated $1.19 billion in wages, represent a major force in the Minnesota economy. Estimated gross economic activity for Minnesota's value-added recycling manufacturing industry is $3.48 billion.

Minnesota's recycling collection infrastructure

Minnesota's recycling collection infrastructure generated an estimated $35 million in state tax revenue and employs an estimated 6,100 people. These jobs in turn support another estimated 18,500 people downstream in indirect and induced jobs. All together these jobs pay an estimated $977 million in wages. It should be noted that some of these wages are part of $1.19 billion in wages paid on the downstream value-added recycling manufacturing jobs. Estimated gross economic activity for Minnesota's recycling collection infrastructure is $2.91 billion.

Appendix A

Citizens' Jury® Recommendations

The SWMCB convened a Citizens' Jury® in 2001 to hear from citizens about what should be done in the metro region regarding solid waste, as well as what citizens themselves are truly willing to do.

Eighteen citizens from the Twin Cities Metropolitan Area were carefully chosen from a randomly identified jury pool to serve as a representative microcosm of the region. During five consecutive days in June 2001, the jury heard expert witness presentations on a range of issues and perspectives related to solid waste. The jury learned about the current hierarchy of preferred waste management practices, as well as several significant alternatives for addressing solid waste issues, along with the environmental, economic, and behavioral implications of all proposals. The jury then deliberated together to develop recommendations about strategies for managing the region's solid waste, including waste reduction, reuse, recycling, composting, waste-to-energy, and land disposal.

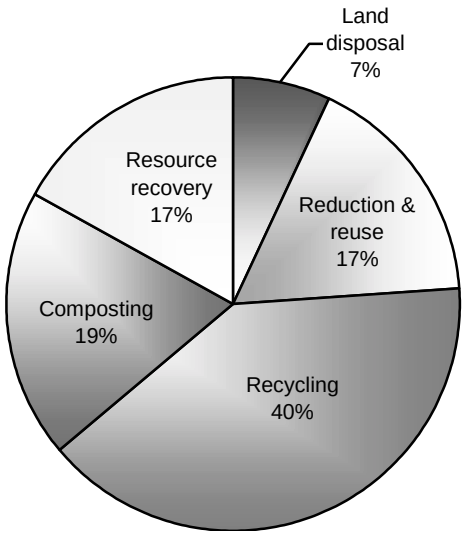
After hearing a general overview of the solid waste management issues, the jury developed a set of values that they recommend be reflected in any solid waste management strategy for the Metropolitan Area. The jury's final value statements in priority order are as follows:

Keeping both short-term and long-term planning in mind, the preferred solid waste management strategy for the Metropolitan Area should:

- Promote and protect optimum health and safety.
- Aggressively foster and encourage responsibility at multiple levels (personal, corporate, government).
- Protect, preserve, and enhance the environment.
- Support and provide a sound economic value.
- Maximize operational efficiency.
- Be as convenient as possible.

In addition, the Citizens' Jury® recommended a vision for the solid waste management system. The vision reflects an increased emphasis on waste reduction and reuse, recycling, composting, and resource recovery, and less emphasis on land disposal.

Citizens' Jury's® vision for the metropolitan solid waste management system



Appendix B

State Solid Waste Advisory Committee (II) Recommendations:

Vision, Goals & Possible Action Items

The vision and goals presented in this document were adopted without dissent by the following members (or their designated alternates) voting on December 11, 2002.

Mary Ayde, Minnesota Waste Association
Dave Benke, Office of Environmental Assistance
Jim Bosch, Target
John Domke, SKB Inc.
Paul Gardner, Recycling Association of Minnesota
Susan Haigh, Ramsey County Commissioner
Sen. Linda Higgins, District 58, Minneapolis
Susan Hubbard, Eureka Recycling
Jerry Johnson, Solid Waste Administrators Association
Brian Kletscher, Redwood County Commissioner
Ron Lifson, LDI Fibers
Anne Morse, Grassroots Recycling Network
Steve Raukar, St. Louis County Commissioner
Trudy Richter, Minn. Resource Recovery Assoc.
Steve Rohlf, City of Elk River
Kirk Rosenberger, citizen member
Kurt Soderberg, Western Lake Superior Sanitary Dis.
Dick Stafford, Washington County Commissioner
Mark Stoltman, Randy's Sanitation
Lisa Thorvig, Minnesota Pollution Control Agency
Chuck Wegner, BFI Inc.

The items listed under each goal are to be considered as possible action items to meet each goal. The committee discussed these items, and the motion was made to include them in the document as "possible action items." Some of these possible action items received unanimous support from the committee while others received support from a majority of the committee.

In addition, the committee voted unanimously on **"supporting stable and sufficient funding for today's solid waste system. All revenues from the Solid Waste Management Tax (SWMT) should pay for solid waste needs"** and felt that this should be the primary recommendation of the committee.

Vision

A sustainable community seeks a better quality of life for current and future residents by maintaining nature's ability to function over time. It minimizes waste, prevents pollution, promotes efficiency, and develops resources to revitalize local economies. The waste management system is a component of the infrastructure of a sustainable community. Therefore, solid waste will be managed by technologies and methods that support sustainable communities and environments. The solid waste hierarchy, with its associated goal of protecting the state's land, air, water, and other natural resources and the public health, is central to attaining the objectives of sustainability and solid waste management.

Goals

1. To manage waste in a manner that will protect the environment and public health and that will conserve resources.

    - Develop a plan for product stewardship of high-risk products: All parties, including manufacturers, must understand the high cost of managing "high-risk" products, and that shared responsibility for those costs would be preferable.
    - Set up a statewide panel or a structure similar to the Listed Metals Advisory Council to identify problem materials and to develop management options.
    - Keep electronics such as personal computers out of the waste stream as a state policy—and set a timeline to achieve. Encourage manufacturers to come forward with a plan in one year and report back on their plan.
    - Establish a panel of stakeholders to develop a plan for state educational eco-labeling for products and packaging.

2. To manage waste in an integrated waste management system in accordance with the hierarchy in order to minimize landfilling, with an increased focus on maximizing reduction, reuse, recycling, and source-separated composting.

    - Utilize the existing funding structure (Solid Waste Management Tax, landfill fees, Solid Waste Management Fees, and generator bills).
    - Maximize use of existing facilities (i.e., these may be good facilities to use for organics composting).
    - Implement the goals of the state hierarchy.
    - The state's integrated solid waste management system should be diverting the large amount of potentially compostable and recyclable material now being discarded as part of the total three million tons of Minnesota MSW burned or buried each year.
    - Create a state plan that would set goals for source reduction, recycling, composting, and processing.
    - Seek legislation to clarify that source-separated compost can be exempt [from the Solid Waste Management Tax] under a variety of conditions (possibly limited to certain sectors of generators, like food markets and schools) as long as the material is actually composted and is used as compost.
    - Establish a statewide aggregate goal to achieve an 85 percent reduction by weight of municipal solid waste (MSW) landfilled by the year 2020 by managing it through the highest and best use economically feasible. A panel of stakeholders should be convened to develop an implementation plan to achieve this goal.
    - Set phased-in goals for the prevention of compostables being disposed of with mixed waste.
    - The statutory definition of "processing" should be examined to ensure that actual processing methods are referenced and to avoid unintended inclusion of transfer processes.

3. To manage waste in a cost-effective manner that accounts for environmental benefits and minimizes the long-term financial liability for citizens, businesses, and taxpayers.

    - Match materials with waste processing methods. Such a strategy could be derived from the state plan noted above that would set goals for source reduction, recycling, composting, and processing.

4. To cause generators to take responsibility for the environmentally sound management of their waste and to allocate solid waste management system costs equitably among those who use or benefit from the system.

    - Develop uniform waste regulations—ban on-site disposal statewide.
      The state should ban the open burning of household waste statewide.

- Assure that all residents of the state have access to curbside or convenient drop-off services for MSW, C&D, and recyclables by 2005.
- Make waste management/waste processing rules more flexible to allow innovation.
- Support stable and sufficient funding for today's solid waste system. All revenues from the Solid Waste Management Tax should pay for solid waste needs.
- Solid waste funding needs are greater than the revenues allocated. Therefore, the Solid Waste Management Tax should be kept at the current rate and the Solid Waste Management Tax revenues should all go to solid waste management expenses.
- Enhance and develop sustained education of public with regard to personal responsibility.

5. Ensure accurate and complete accounting of all data (e.g., waste generation, disposal, recycling, reuse, revenues, and expenditures).

- Develop better data and statewide confidence in the data and data measurement. Determine methods of obtaining accurate numbers for commercial waste generation and recycling.
- Ensure full cost and benefit accounting of all waste management systems and methods.

6. Maximize the use and value of recovered materials.

- To give incentives for local governments and the private sector, provide a two-year pilot sales tax holiday on the following recycled products:
    1. Copier paper with 30% post-consumer content or higher.
    2. Coated printing paper with a minimum of 10% post-consumer recycled content.
    3. Uncoated printing paper with a minimum of 30% post-consumer recycled content.
    4. Re-refined motor oil that is certified for gasoline engines by the American Petroleum Institute.
- The committee believes that the above recommendation can be implemented as a revenue-neutral initiative.
- It should be a policy of Minnesota that public entities shall buy environmentally preferable products, including recycled content.

Appendix C

Research Reports and References

Regional solid waste data

- *Annual Results Report.* Prepared by the Solid Waste Management Coordinating Board, 2002.
- *Annual Results Report.* Prepared by the Solid Waste Management Coordinating Board, 2001.
- *Annual Progress Report.* Prepared by the Solid Waste Management Coordinating Board, 2000.
- *Annual Results Report.* Prepared by the Solid Waste Management Coordinating Board, 1999.
- *Baseline Report.* Prepared by the Solid Waste Management Coordinating Board, 1998.
- *MSW Composition Study.* Prepared for the Solid Waste Management Coordinating Board and the Minnesota Office of Environmental Assistance, 2000.
- *Results of the Construction and Demolition Waste Observations.* Prepared for the Solid Waste Management Coordinating Board, 2002.
- *Final Grant Report.* Prepared for the Solid Waste Management Coordinating Board, 2002.

Waste collection

- *Recycling Trends Research Study, Final Report.* Prepared for the Solid Waste Management Coordinating Board, 2001.
- *Public Collection Study: Final Report.* Prepared for the Resource Recovery Project, 2002.
- *Dakota County Recycling Evaluation.* Prepared for Dakota County, 2002.
- *Strategies to Reduce and Recycle Solid Waste in Grocery Stores.* Prepared for Washington County, 2002.

Waste processing

- *Current Research on MSW Landfill Air Emissions.* Prepared by the Solid Waste Management Coordinating Board, 2002.
- *Regional System Technical Evaluation Final Report.* Prepared for the Solid Waste Management Coordinating Board, 2000.
- *Technical Review for Processing Source-separated Materials at Existing Facilities,* 2000.
- *Processing Implementation Plan*. Prepared by Solid Waste Management Coordinating Board, 2000.

Citizen research

- *Citizen Focus Groups to Identify Barriers to Reducing Waste.* Prepared for the Solid Waste Management Coordinating Board, 2000.
- *Community POWER: Round One Final Reports.* Prepared for the Solid Waste Management Coordinating Board, 2002.
- *Citizen Survey (telephone survey).* Prepared for the Solid Waste Management Coordinating Board, 2000.
- *Citizens' Jury®: Metro Solid Waste*. Prepared for the Solid Waste Management Coordinating Board, 2001.

- *Home Composter Bin User Study Spring 2001 Program Survey Results.* Prepared for the Solid Waste Management Coordinating Board, 2001.
- *Regional Public Communications Plan.* Prepared for the Solid Waste Management Coordinating Board, 2002.
- *Ramsey County Citizen Survey*. Prepared for Ramsey County, 2001.

Business research

- *Business Survey 2000* (telephone survey). Prepared for the Solid Waste Management Coordinating Board, 2000.
- *Reusable Transport Packaging Marketing Research Report.* Prepared for the Solid Waste Management Coordinating Board, 2001.
- *Reusable Transport Packaging Marketing Plan.* Prepared for the Solid Waste Management Coordinating Board, 2001.
- *Office Paper Reduction Final Report.* Prepared for the Solid Waste Management Coordinating Board, 2002.
- *Institutional On-site Food Waste Composting Survey.* Prepared for the Solid Waste Management Coordinating Board, 2000.
- *Summary Report of the Activities of the Task Force on Electronics with CRTs.* Prepared for the Solid Waste Management Coordinating Board and the Office of Environmental Assistance, 2000.
- *Latex Paint Solutions Task Force Recommendations.* Prepared for the Solid Waste Management Coordinating Board and the Office of Environmental Assistance, 2000.
- *Construction Waste Project Final Report.* Prepared for the Solid Waste Management Coordinating Board, 2003.

Public entity research

- *Survey of Public Entity Waste Management and Environmentally Preferable Purchasing Practices.* Prepared for the Solid Waste Management Coordinating Board, 2001.

OEA research reports

- *Solid Waste Policy Report: Waste as a Resource.* Prepared by the Office of Environmental Assistance, 2002.
- *Minnesota recycling industries: Economic activity summary.* Prepared by the Minnesota Office of Environmental Assistance, 2003.
- *Report on 2001 SCORE Programs.* Prepared by the Office of Environmental Assistance, 2001.
- *Study on Resource Conservation Benefits Associated with 1995 MSW Management in the Twin Cities Metropolitan Area.* Prepared for the Minnesota Office of Environmental Assistance, 1997.

Appendix D

Office of Environmental Assistance: Predrafting Notice

Statement of subjects expected to be covered by revisions to the metropolitan solid waste management policy plan

Introduction

The Minnesota Office of Environmental Assistance (OEA) has started the process to prepare revisions to the *Metropolitan Solid Waste Management Policy Plan*. This plan would replace the current plan adopted by the OEA on October 7, 1997. The new plan will be adopted by the OEA director and submitted to the Legislature as part of the state *Solid Waste Policy Report* by December 1, 2003.

Revisions to the *Metropolitan Solid Waste Management Policy Plan* are mandated under Minn. Stat. § 473.149. The policy plan must be followed in the Metropolitan Area. The policy plan contains goals and policies for solid waste management, including recycling and household hazardous waste management. The statute requires that the regional plan contain objectives to abate the landfilling 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.

The OEA is required to prepare this predrafting notice to solicit public comments on the anticipated revisions to the policy plan. Public comments must be received within 45 days from the date of the publication in the *State Register*.

Written comments on the predrafting notice must be sent to:

Maureen Hickman
Minnesota Office of Environmental Assistance
520 Lafayette Rd. N., 2nd Fl.
St. Paul, Minnesota 55155-4100
(612) 215-0271 or 1-800-657-3843 (toll-free in Minnesota)

Written comments must be received by the OEA at the above address by 4:30 p.m., C.S.T., Friday, January 3, 2003.

Overall approach and philosophy

The policy plan revisions will be developed consistent with the state policies and purposes expressed in Minn. Stat. § 115A.02 of the Minnesota Waste Management Act (WMA). The policy plan will support the WMA hierarchy of preferred waste management methods.

The policy plan will evaluate the recommendations emerging from the State Solid Waste Advisory Committee, a multi-stakeholder group including representatives of waste generators, haulers, processors, recyclers, landfill operators, local government staff, and legislators. The panel's recommendations will be submitted to the OEA in December 2002.

The policy plan will also examine the possibilities for a greater state role in the integrated waste management system. The plan will consider the implications of having the state assume a market participant role, such as having the state issue a contract for waste management services in the Metropolitan Area.

The policy plan will serve as a guide for the continued implementation of successful solid waste abatement and resource conversation in the Metropolitan Area. The policy plan will build on the successes achieved in the Metropolitan Area.

Most policies in the existing policy plan have served the region well. The policy plan revisions will continue to support the following goals: treating waste as a resource, landfill abatement, waste and toxicity reduction, the management of all solid waste, the WMA hierarchy, aggressive abatement goals, region-wide waste processing; regional operations, and minimization of negative environmental impacts.

The focus of new policies will be strategic—on subject areas that require immediate attention (within the next six years). Less attention will be paid to on-going solid waste management programs that already work well. The policy plan will explore the development of policies aimed beyond the traditional municipal solid waste (MSW) stream, such as construction and demolition waste and industrial solid waste and ash.

Description of how the existing solid waste system serves the Metropolitan Area

The Metropolitan Area's current solid waste infrastructure has developed extensively since the passage of the 1980 WMA. In 2001, 75 percent of the region's mixed MSW was managed through recycling, composting, and resource recovery facilities. This level of abatement is among the highest in the country, and public policy should continue to support this regional system, as well as find ways to improve it.

The policy plan will describe the level to which the existing Metropolitan Area solid waste system has fulfilled the WMA, as well as the policies adopted in the *Metropolitan Solid Waste Management Policy Plan* in 1997.

The policy plan will describe how the existing solid waste system benefits the Metropolitan Area, including the environmental and resource conservation benefits. The policy plan will identify the waste volumes and types of materials managed by the different solid waste abatement methods and technologies and the volumes of materials recovered and energy produced.

Policies regarding the existing solid waste system

The policy plan will include policies intended to preserve, protect, and enhance the benefits derived from the delivery of the current regional abatement services. These policies will relate to the WMA hierarchy, the need for continued landfill abatement, waste assurance to resource recovery facilities, maximizing the resource value of waste, and the orderly and economic development of the region. The policy plan will include policies that strengthen the ability of the metropolitan counties, cities, and private businesses to deliver regional solid waste services.

Metropolitan Area solid waste system faces some challenges

The policy plan will discuss some challenges that face the Metropolitan Area solid waste system, including the flow of waste that crosses state borders, increased landfilling, increased waste generation and per capita growth rates, and stagnant recycling rates.

The policy plan will include policies that sustain aggressive and successful solid waste abatement, and continue to shift the state and metropolitan region's focus to treating waste as a resource. These policies include initiatives to increase source reduction, initiatives to establish product stewardship programs, maintaining aggressive recycling goals, implementing effective waste assurance methods, improving waste-sharing among resource recovery facilities, informing consumers about abatement alternatives and potential liability of using less preferred facilities, and waste education efforts. The

policy plan will include policies that avoid transferring pollutants resulting from solid waste management to another environmental media, such as air, water, and land. The policy plan will include policies that support the regional intercounty governance of solid waste.

Solid waste management facilities and programs

The Solid Waste Management Coordinating Board (SWMCB) is a joint-powers board that coordinates many of the solid waste activities of six of the seven metropolitan counties. SWMCB, pursuant to a Memorandum of Understanding with the OEA, will work jointly to prepare the policy plan.

The policy plan will include goals and policies for solid waste management, including recycling consistent with Minn. Stat. § 115A.551, and household hazardous waste management consistent with Minn. Stat. § 115A.96, subd. 6, in the Metropolitan Area.

The policy plan will include specific and quantifiable regional objectives for abating, to the greatest feasible and prudent extent, the need for and practice of landfilling of mixed MSW and of specific components of the solid waste stream. The objectives will be stated for a period of at least 20 years.

The policy plan will include objectives for waste reduction and abatement of solid waste through resource recovery, recycling, and source separation of organic waste for composting for a period of at least 20 years. The policy plan will discuss the development of recycling goals that support future SCORE goals. The policy plan will discuss an overall MSW abatement goal for the region.

The policy plan will evaluate the state and regional governance structure and make appropriate recommendations that best fulfill the needs of integrated solid waste management. The policy plan also will explore issues beyond the Metropolitan Area jurisdiction that affect the regional solid waste system.

Additional issues

The policy plan will identify opportunities to implement and/or negotiate public collection services. The policy plan will identify the responsibilities of citizens, businesses, haulers, and government in taking responsibility for the generation and collection of waste and proper environmental management.

The policy plan will discuss the regional costs of solid waste management, including the costs of waste collection services, recycling, waste processing, landfilling, and government programs. The policy plan will evaluate methods to assess and account for the full costs of waste management.

Policy plan implementation tools

The policy plan will include procedures, standards, and criteria regarding the OEA review of county master plans, annual waste certification reports, waste facility permits, certificates of need, and solid waste supply contracts and processing agreements. The usefulness of these reviews will also be examined to determine if some of them should be eliminated, changed or others conducted.

The policy plan will include standards and criteria for the OEA review of solid waste facility permits regarding the following matters: general location; capacity; waste supply; operation; processing techniques; environmental impact; effect on existing, planned, or proposed collection services and waste facilities; and economic viability.

How the policy plan will be used

Citizens and businesses. The policy plan will be used to (1) inform citizens about their role and responsibility for appropriate waste management choices, (2) educate citizens about solid waste management and the government and private solid waste services available to them, and (3) identify for citizens the various state agencies and municipal and county governments for assistance. The

policy plan will serve as a guide to assist private industry in the development of future facilities, services, and investments.

Public entities. The policy plan will guide counties and municipalities in the development of solid waste plans, ordinances, and proposals for source reduction, recycling, and solid waste system management. The policy plan will guide the following OEA activities: administration of the MLAA grant program; approval of county solid waste plans; approval of county ordinances; approval of Metro Area MPCA solid waste facility permits; approval of metro solid waste processing and solid waste supply contracts; issuance of landfill certificates of need; and legislative initiatives affecting solid waste management in the Metropolitan Area. The policy plan will aid the MPCA in its various regulatory, environmental review, enforcement, and technical assistance functions.

The Legislature. The policy plan may recommend and guide legislative initiatives designed to improve solid waste management in the Metropolitan Area.

Appendix E

Summary of Remaining Capacity at Minnesota Solid Waste Facilities

Capacity at processing facilities in Minnesota

Facility name	2002 quantities received	Benchmarks	Contract termination date	Permitted tons per year
Compost facilities				
Prairieland	11,715		None–joint powers	36,500
Swift	637			
SWIS/Pennington	3,171	Grant forgiven in 2003	Discontinued operations in 2003	18,000
NRG Processing	3,000		Lease expires 2012	46,800
Hutchinson	2,124			
Lake of the Woods	2,031		Discontinued operations in 2003	
WLSSD Organics	814			10,140 (31,200 cu.yds)
Total	**23,492**			
Waste-to-energy				
Fergus Falls	26,765		2009	29,000
HERC	365,185		2018	365,000
Olmsted County	69,476		2006–Dodge Co.	65,000
Perham	24,719		2021–Tri-County, 2009	42,000
Polk County	30,541		12/31/08	32,500
Pope/Douglas	25,564		None–joint powers	29,000
Red Wing	17,421		N/A	
Total	**559,671**			
RDF facilities				
NRG-Elk River	438,060 delivered 388,627 processed	Notice of Intent to Renew–August 2004	2009	449,500
NRG-Newport	565,567 delivered 424,922 processed	July, 2002-no intent to renew under same terms	2007	425,000
Total	**813,549 processed**			

Capacity at MSW landfills in Minnesota

Facility name	2002 quantities received (tons)		Remaining permitted capacity [1] (cubic yards)
	MSW	Industrial	
Brown County	11,561	0	333,450
Burnsville (WMI)	183,726	63,480	1,831,143
Clay County	22,688	0	200,000
Cottonwood County	8,459	0	136,273
Crow Wing County	41,832	1,031	491,247
East Central	70,009	18	541,684
Elk River (WMI)	424,029	16,583	8,013,000
Forest City Road	0		
Greater Morrison	7,860	14,166	531,943
Kandiyohi County	27,694	0	214,673
Lyon County	27,391	15,403	405,784
Mar-Kit	24,109	0	74,096
Olmsted County-Kalmar	31,876	2,136	1,200,000
Pine Bend (BFI)	374,071	243,069	6,890,000
Polk County	2,551	0	135,165
Ponderosa (Blue Earth County)	17,660	4,112	970,055
Renville County	7,686	6,532	113,000
Rice County	33,123	0	160,297
St. Louis County	21,250	17,100	482,924
Spruce Ridge (WMI)	111,928	7,034	4,128,452
Steele County	16,103	174	339,972
Waste Connections (Nobles Co.)	9,013	1,365	112,219
Total	**1,474,619**	**311,091**	**27,305,377**

Note: Information was taken from 2002 MPCA annual reports as submitted by the facilities.
Tons to cubic yard conversion used: 1 ton = 3.33 cubic yards

[1] *Permitted capacity is the amount of capacity permitted by the MPCA. It includes MSW, industrial waste, and final cover.*

Appendix F

Review Criteria

The Waste Management Act (WMA) authorizes the OEA Director 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
5. Certificates of Need

The OEA will use these reviews as one method to implement its solid waste management policies. Prospective applicants are encouraged to contact the OEA before preparing and submitting review requests.

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).

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

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

- waste management service impacts
- capacity
- processing techniques
- location
- environmental impacts
- operations
- competitive operation
- economic viability

OEA approval may establish conditions necessary to satisfy the criteria (Minn. Stat. § 473.811, subd. 4a). Some criteria may be met in accordance with authority granted local units of government to establish ordinances affecting waste management.

Counties may acquire and establish waste disposal or processing facilities without complying with local ordinances with OEA approval according to statutory requirements (Minn. Stat. § 473.811, subd. 4a and Minn. Stat. § 473.823, subd. 5). The override of local ordinances is addressed in conjunction with the "location" 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. Transfer stations serve as the link between solid waste collection and final disposal by consolidating waste from collection vehicles into larger transfer vehicles. Landfills are operated by national waste management companies and by local businesses. The WMA encourages provision of services by the private sector.

The orderly transition from landfilling 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 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, including implementation on restrictions on disposal required under Minn. Stat. § 473.848. The WMA provides the OEA authority to place conditions on waste facility permits, including (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. § 473.823, subd. 3).

Objectives

- Ensure the efficient and orderly transition from land disposal to waste reduction and resource recovery.
- Ensure that adequate solid waste supplies are available for development of solid waste facilities.

Criteria

- Waste supply projections for a proposed facility shall be compatible with existing and proposed facilities approved by the OEA. Restrictions may be placed on the type, character, quantities, and geographic territory of the waste supplies for resource recovery facilities.
- 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.
- 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.

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 markets. Solid waste transfer facilities will not be subject to the criteria below concerning capacity. Notwithstanding, the other permit review criteria will apply to solid waste transfer stations as appropriate.

Objectives

- Ensure that waste facility capacities meet efficient, economical service requirements and take into consideration the area-wide need and benefit of the applicant facility.
- Ensure that waste facility capacities promote adaptable systems of waste management and orderly transition to waste reduction and resource recovery.

Criteria

- 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.
- Proposed waste facility capacities shall be consistent with the area-wide need for the capacity, including an analysis of waste generation, county plans for use and development of waste facilities, and historical and projected patterns of operation by facilities in the region. For proposed new or expansions of MSW landfills, the director's decision on the Certificate of Need request will satisfy the review under this criterion.

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 technical problems that have led to increased costs and inconsistent service.

These include:

- Damage to system components or unscheduled shutdowns resulting from adaptation of equipment designed for materials other than solid waste.
- Wear resulting in frequent replacement and maintenance of system components.
- 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. Experimental development projects should focus on small-scale or demonstration-type projects.

Objectives

- Promote the use of technically reliable and efficient processing techniques. Identify and resolve problems that may reduce processing efficiency and reliability.
- Allow for the development of new and/or experimental waste processing techniques to recover energy or materials.

Criteria

- 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.
- 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. To the extent practical, conflicts with planned land uses like agricultural preserves and parks will be avoided. 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. Metropolitan Area landfill siting efforts have demonstrated the difficulty in finding locally acceptable locations for waste facilities. Waste facilities rarely meet local land-use planning requirements. The Waste Management Act gives counties the authority to establish disposal and waste processing facilities without complying with local ordinances (Minn. Stat. § 473.811, subd. 4a and Minn. Stat. § 473.823, subd. 5). This action must be approved by the director.

Objectives

- Assure that proposed waste facilities are located in areas compatible, to the extent possible, with local land-use plans, and existing and planned county and metropolitan systems and utilities.
- Assure that local land-use concerns are considered in reviewing facility proposals.
- Assure that land disposal facilities do not visually dominate the surrounding community to an unacceptable degree.
- Allow implementation of needed waste management system components that comply with reasonable local ordinances.
- Ensure that necessary waste management system components are not prohibited by unreasonable local ordinances and land-use controls.

Criteria

- Solid waste facilities should be compatible, to the extent possible, with regional land-use policies and county and local comprehensive land-use plans. Lack of compatibility with land-use policies and plans shall not preclude OEA approval of a waste facility, if waste management policy considerations must take precedence.
- 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.
- 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. Access to the site must not depend on the use of local and collector streets through residential areas.
- 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.
- The large size and potential height of land disposal facilities should be evaluated to determine whether they would excessively dominate the surrounding landscape.
- Standards for local landfill zoning and landfill related fees:
    1. The OEA will only approve counties to establish disposal facilities without complying with local ordinances (Minn. Stat., § 473.811, subd. 4a) 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:
        a) A facility permit has been or will be issued by the MPCA.
        b) The facility is consistent with the OEA and county solid waste management plans.

c) A local government has denied the establishment or operation of the facility.

2. Denial of counties to establish disposal facilities without complying with local ordinances (Minn. Stat. § 473.81) 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:

   a) Fees required by the site community that will not reimburse direct costs appropriate to the local jurisdiction and exceed any specific statutory authorization; and

   b) Restrictions placed on the site or applicable buffer area that do not apply to other properties in the same zoning classification.

3. In a decision to allow counties to establish disposal facilities without complying with local ordinances (Minn. Stat. §473.811, subd. 4a), the OEA shall conduct at least one public meeting in the affected community and consider at least the following matters:

   a) 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.

   b) 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.

   c) 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.

   d) The need for the proposed facility and the availability of alternative sites.

   e) The consistency of the proposed facility with the county master plan adopted pursuant to Minn. Stat. § 473.803 and the OEA's policy plan adopted pursuant to Minn. Stat. § 473149.

   f) Transportation facilities and distance to points of waste generation.

4. The public meeting 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.

5. A decision to allow counties to establish disposal facilities without complying with local ordinances (Minn. Stat. § 473.811, subd. 4a) 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 OEA'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 waste reduction and resource recovery from landfilling 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, 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 groundwater 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 toward 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 Department 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.

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. Several strategies can be used to bring emissions within acceptable levels, including installation of pollution control devices, 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 airflow 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 safety.

Objectives

- To design, operate, and maintain solid waste facilities so as to minimize risk to public health and the environment.
- To reduce nuisance impacts at solid waste facilities to the greatest extent possible.
- 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

- 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:
    1. The characteristics of the wastes that will be accepted.
    2. Ability to prevent violations of state water quality standards.
    3. Ability to control unregulated substances adequately.
    4. 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).
    5. The underlying soils and hydrogeologic conditions (including depth to bedrock, soil texture, permeability of underlying materials, and groundwater flow patterns).
    6. Whether the applicant's proposed engineering control and management technologies provide the levels of protection afforded by other reasonably available technologies.
- 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.
- 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.
- Solid waste facilities shall provide for appropriate handling and treatment of surface water runoff, wastewater, and collected leachate.
- Solid waste facility applicants shall develop environmental monitoring programs and contingency plans. These plans shall address:
    1. Protection of surface and groundwater resources.
    2. Protection of air quality.
    3. Protection against odors, safety, and nuisance impacts.
    4. Conditions under which the contingency plans would be implemented.

- 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 OEA regarding compliance with OEA processing standards and fee reimbursements, penalties, or surcharges.
- 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:
    1. Ability to prevent violations of state or federal air quality standards.
    2. Ability to control emissions for which neither ambient nor emissions standards exist.
    3. The potential impact on environmentally sensitive ecosystems.
    4. Whether the applicant's proposed engineering control and management technologies provide the levels of protection afforded by other reasonably available technologies.
- 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.

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:

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

Objectives

- Ensure that facility operations result in safe, regular, and efficient waste management services.
- Ensure adequate and continued waste management services during non-operating periods.

Criteria

- Proposed waste facility applicants shall demonstrate ability to properly operate and maintain the facility. The OEA 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.
- Proposed waste facilities shall have controlled access to prevent unauthorized entry and provisions for handling wastes left at the facility illegally.
- Proposed waste processing facilities shall ensure regular service to generators during non-operating 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. Situations in which comparable waste facilities may compete include public land disposal versus private land disposal and public waste processing versus 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.

Objectives

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

Criteria

- Public waste facility proposals shall not displace viable, comparable waste facilities currently in operation unless the displacement is necessary to achieve the objectives of the policy plan. 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 include 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 OEA will consider the following factors to determine whether waste facilities are comparable and have the potential to compete:
  1. consistency with the policies in the policy plan.
  2. design and operating capacities of the waste facilities.
  3. tipping fees charged at the facilities.
  4. geographic area from which the waste facilities draw their waste.
  5. facilities' sources of funding for capital and operating expenditures.
  6. facilities' waste supply and refuse-derived product market contracts or commitments.
  7. 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 cannot 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 OEA 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, including 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.

Objectives

- Ensure that publicly owned, operated, or funded waste facilities, or waste facilities having contractual obligations with governmental units, minimize public economic risk.
- Minimize adverse economic effects on local communities affected by waste facilities.

Criteria

- Public waste facility proposals should, to the extent possible, use projected operating revenues, including those from the sale of recovered products and tipping fees or user fees, 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 OEA will consider the following in determining the extent of public obligation and consistency with this criterion:
    1. Total capital costs and the projected annual operation, administration, maintenance, and debt service costs of the facility.
    2. Amount, level, and nature of projected revenues available for the payment of facility costs over the life of the facility.
    3. 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.
    4. 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.

- 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.

- 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. § 473.813, subd. 1). In the past, the success of waste facility proposals often depended 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 may continue to be used as facilities identified in approved county master plans proceed toward development, or as existing contracts are renewed or renegotiated. While long-term delivery arrangements may be necessary in some instances, it is possible for waste facilities to operate without such arrangements.

The Metropolitan Area has almost 20 years of experience with waste delivery and processing contracts. Waste processing is now an integral part of the regional solid waste management system. Review standards and criteria once appropriate for the development of new facilities may not be as necessary for the continued operation of waste processing in the region.

Local governments have mechanisms in place for the procurement of waste delivery and processing services. The region has had substantial experience in negotiating, managing, and defending various long-term waste management contracts.

The WMA authorizes the OEA to review and approve local government supply and processing contracts longer than five years in duration (Minn. Stat. § 473.813, subd. 2). Such reviews may be consolidated with OEA waste facility permit application reviews.

Processing and waste delivery contracts will only be reviewed if there are terms that exceed five years. Local governmental waste delivery and processing contracts that are less than five years in duration are not subject to OEA review. The criteria in this section will be used for all contract reviews. Waste facility permit review criteria will also be used if applicable. OEA contract approval will remain in effect unless (1) the term is extended, or (2) the contract is substantially amended or revised to the extent that additional OEA review is necessary. Supply and processing contracts should be appropriate to solid waste market conditions.

Objectives

- Ensure that waste supply and processing contracts facilitate implementation of the policy plan.
- Ensure that waste supply and processing contracts can respond to changing facility service requirements and market conditions.

Criteria

- Waste supply and processing contracts shall be consistent with the policy plan.
- Waste supply and processing contracts should not prevent or adversely affect the operation or development of other waste processing facilities and waste management activities higher on the hierarchy unless necessary to achieve the objectives of the policy plan. The following factors will be considered in determining ability to meet this criterion:
    1. Probable effect of the contract payment structure on other waste facilities and activities higher on the hierarchy.
    2. Effect on service areas and collection rates and charges.
- 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. This criterion recognizes there may be higher collection rates and charges and service cost differences associated with particular waste facilities and activities.

- Waste supply and processing contracts should minimize public economic risk. Contracts will be examined for the following factors:
    1. Quantity and duration of waste supplies and the required service are to meet minimum facility operating requirements and debt service amortization.
    2. Method of ensuring that the waste can be provided to the facility.
    3. 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.
    4. 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 OEA has the authority to approve proposals for districts. Specific operating conditions can be a part of the OEA'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 Environmental Assistance. The office cannot establish a district wholly within or extending into the Metropolitan Area without the approval of the OEA.

The OEA 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 OEA to establish, alter, and terminate waste districts.

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 allows 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.

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

- Ensure that the establishment of waste districts will facilitate implementation of the policy plan.
- Ensure that waste districts are responsive to local citizens and public and private interests.
- Ensure that waste districts have appropriate administrative structure and capabilities to deliver services efficiently and equitably.

Criteria

- Proposed waste districts shall be consistent with the policy plan. The OEA will consider the proposal's consistency with affected county master plans and local plans. The OEA will evaluate the:
    1. district's capability to meet regional objectives.
    2. effect of the district on other projects or districts.
    3. need to consolidate solid waste planning and implementation activities with affected counties and local units of government.

- Waste district proposals shall incorporate, in articles of incorporation, the same procedural and substantive responsibilities, duties, and relationship to the OEA and metropolitan agencies as a metropolitan county. Waste district proposals shall also include a mechanism to ensure public involvement and review of its activities.
- 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 OEA will consider:
    1. financing capabilities of the district.
    2. capability of the district to implement projects and activities.
- 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.
- Waste district service area boundaries shall promote effective service delivery. The OEA 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. OEA 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 materials, 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 these 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 OEA 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 OEA approves the designation plan, materials must be excluded from designation that will be processed at potential resource recovery facilities the OEA is convinced will be substantially completed within 18 months. Operators or owners of proposed recovery facilities must file with the OEA 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.
- 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 will be approved. The OEA 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 OEA for approval. The OEA has 90 days to complete its review and reach a decision on the ordinance or contracts. If the OEA 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 OEA must approve the ordinance. The OEA may attach conditions to its approval. The designation authority may amend the designation ordinance with the approval of the OEA.

Objectives

- Ensure that waste flow designations facilitate implementation of the regional system plan.
- Ensure that waste flow designations, to the extent possible, minimize adverse impacts on waste collection patterns and services.
- Ensure that waste flow designations have appropriate administrative capabilities to deliver services efficiently and equitably.
- 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.
- Ensure that exclusion entities achieve waste management standards equivalent to those expected of designated facilities.
- Ensure that exclusion entities provide information necessary to monitor implementation of the regional system plan.

Criteria

- 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 OEA will evaluate:
    1. The designation's capability to further the objectives of the policy plan.
    2. The extent to which the use of land disposal is reduced.

3. The effect of the designation on existing and proposed solid waste projects and activities.
4. Consistency with county solid waste master plans.
5. Consistency with state policies and purposes.

- Proposed waste flow designations shall not unnecessarily interfere with existing and proposed private waste management initiatives except those consisting of MSW land disposal. The OEA will evaluate the potential effect of designation upon businesses engaged in waste collection, materials recycling, demolition debris disposal, and industrial waste disposal.
- Proposed waste flow designations shall demonstrate that efficient facility operations and performance will be maintained. The OEA will evaluate:
  1. The extent to which public contractual and financing/ownership arrangements with private operators will ensure accountability and less risk of inefficient performance.
  2. The effect the designation will have on waste service delivery costs.
  3. The effect on performance without the designation.

- 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:
  1. The seasonal variation and projected growth rates of solid waste supplies.
  2. Proposed expansions or terminations of the designated facility that may occur in the future.
  3. Standards of the designation entity for considering exclusion requests.
  4. Commitment of the designation entity not to interfere with source-separation activities of waste generators that allow materials to be managed independently from MSW.
  5. The impact on solid waste supplies by other existing and proposed solid waste projects and activities.
  6. The effect on solid waste supplies of exemptions authorized under the WMA and recovery facility exclusions authorized by the OEA.

- The jurisdictional boundaries of the proposed waste flow designation shall promote efficient service delivery. The OEA will examine the economic and geographic characteristics that promote reasonable service area boundaries.
- 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.
- Proposed waste flow designations shall demonstrate that designation is necessary for the financial support of the projects and activities. The OEA will evaluate:
  1. Alternative methods of financing the proposed activities.
  2. Whether other methods of waste assurance can be used.
  3. The costs and benefits of using alternative recovery measures in place of the designation activities.
  4. Whether resource recovery is feasible without the designation.

- 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 OEA will examine:
  1. The strength of waste supply and product market commitments.
  2. The ability to secure a location for the project or activity.
  3. Whether a commercially demonstrated technology will be used.
  4. The ability to obtain all necessary permits and approvals and complete construction.

- 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.
    1. The OEA 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.
    2. The OEA 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.
    3. 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.
    4. Quarterly reports must be provided to the designation jurisdiction and the OEA 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.
    5. The facility may not direct its product or incoming waste materials to land disposal facilities except under emergency circumstances.
    6. The following additional requirements are applicable during the period following approval of an exclusion by the OEA and the reconsideration of the exclusion decision in conjunction with approval of a designation ordinance:
        a) Within 30 days, a recipient of an exclusion must provide the OEA 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 such a way that it would not operate at full capacity in its first year of operation.
        b) Thereafter, a monthly report shall be submitted to the OEA which describes project activities during the previous month, activities undertaken, deadlines met, and revisions to the schedule.
        c) Written documentation must be submitted to the OEA which demonstrates that:
            - a secure waste supply has been obtained for the facility.
            - project financing can be secured.
            - the party holding the exclusion has granted final approval for project development.
            - 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 OEA indicating that the additional disposal capacity is needed. The OEA's CON standards and procedures will be based on the OEA's materials recovery, resource recovery, and land disposal development schedules. The WMA requires that the OEA 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 OEA'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 must 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 OEA staff at the time of application will be used to prepare a preliminary staff report and recommendations. The OEA 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 OEA's public meeting procedures. A meeting record will be kept by the OEA. After the meeting record closes, staff will prepare findings, conclusions, and recommendations on the CON request for OEA action. The meeting record will be included as part of the report.

The OEA 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 OEA could issue a certificate and deny issuance of a permit for a facility based upon environmental or other reasons unrelated to capacity considerations.

Objectives

- Ensure that new land disposal capacity is only approved if there are no feasible and prudent alternatives.
- Ensure that any new land disposal capacity approved is consistent with the OEA's policy plan.

Criteria

- No permit for new landfill capacity will be recommended for approval by the OEA unless it has issued a CON.
- The OEA shall certify need, subject to limits on capacity, operations, or start-up date necessary for consistency with its policy plan for implementation of materials and resource recovery programs and facilities, if each of the following standards is met:
    1. Proposed capacity is compatible with the OEA's source reduction, recycling, and processing policies in the policy plan.
    2. Proposed capacity is compatible with the programs and facilities for materials and resource recovery identified in the county solid waste management master plans.
    3. Other feasible and prudent alternatives, including existing permitted capacity, are not available to substitute for the proposed capacity.
- 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.
- 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.
- Proposed land disposal capacity will not be certified based solely on a determination that it is the least-cost alternative.

Appendix G

County Master Plan Requirements

Each metropolitan county must prepare and submit to the OEA a revised solid waste master plan after the OEA director adopts its revised solid waste policy plan. The OEA will also accept a regional solid waste master plan (regional plan) from the Solid Waste Management Coordinating Board, in conjunction with more limited county master plans if the regional plan provides information required of the county master plans. If the OEA director disapproves a master plan, the county must submit a revised plan within 90 days for OEA director's approval.

The OEA will review county master plans and the regional plan in accordance with the requirements of Minn. Stat. §§ 473.149, 473.803, and 473.848. Master plans must:

1. conform to and implement the OEA's *Solid Waste Policy Plan*.
2. be compatible with each other.

The OEA 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, or county master plans in conjunction with a regional plan, must be comprehensive and clearly describe solid waste management policies, plans, and implementation strategies. The plans must describe the specific projects and activities to be implemented during the planning period by the counties, cities and townships within the counties, and the private sector. The financial commitment and other resource commitments needed to implement those projects and activities must also be described.

Minn. Stat. § 473.803, subd. 1 contains the general requirements for master plans. These requirements include:

1. description of county solid waste activities, functions, and facilities.
2. description of the existing system of solid waste generation, collection, processing, and disposal.
3. mechanism for complying with recycling requirements (Minn. Stat. § 115A.551).
4. plan for household hazardous waste management that meets the requirements of Minn. Stat. § 115A.96, subd. 6.
5. discussion of the existing and proposed county and municipal ordinances and license and permit requirements.
6. description of the existing or proposed municipal, county, or private solid waste facilities.
7. discussion of the collection services within the county, together with schedules of existing rates and charges to users.
8. extent to which facilities and services will or may be used to implement the policy plan.
9. description of the solid waste facility which the county owns or plans to acquire, construct, or improved, including proposed procedures for operation and maintenance of each facility.
10. annual financial analysis of each facility including acquisition costs, operating, and maintenance, and revenue.
11. proposed use of each facility after it is no longer needed or usable.

12. criteria and standards to protect comparable private and public facilities already existing in the area from displacement unless displacement is required to achieve waste management objectives identified in the plan.
13. implementation of local abatement objectives.
14. specific and quantifiable county objectives, based on the objectives in the metropolitan abatement plan, given in six-year increments for a 20-year period.
15. measurable performance standards for resource recovery, waste reduction, and separation programs and activities that implement the metropolitan and county abatement objectives.
16. standards and procedures to be used by the county in determining annually whether a city within the county has implemented the plan and has satisfied the performance standards for local abatement.
17. preparation in consultation with an advisory committee.

Greater detail of the above information is given below.

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, including the type of services provided, hauling arrangements, and documentation that services provided include or will include waste, recycling, and yard waste collection services charged by weight or volume.
3. Existing private, local, county, and regional programs, functions, facilities, and activities for solid waste reduction, recycling, household hazardous waste management, processing, and land disposal, 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 regional facilities and methods to 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. Policies for waste reduction, recycling, household hazardous waste management, waste processing, and land disposal for 200_ through 20__.
2. Quantifiable objectives (stated in tons annually through 200_ and in six-year increments thereafter through 20__) for recycling, waste processing, and land disposal plus county plans for implementing waste reduction efforts.

Description of plans, programs, and facilities for 200_ to 20__

1. Management alternatives (waste reduction, recycling, household hazardous waste management, processing, transfer stations, waste-to-energy, composting, and land disposal) from 200_ through 20__ 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 public sector, 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 or region 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 have 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.
    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 to protect comparable 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. Inter-county project efforts.
    g. Use of OEA and county technical and financial assistance programs.
3. Public education and information programs.
4. Role of waste assurance.
5. County and municipal enforcement activities, including monitoring programs, and licensing and permitting requirements and ordinances.

Appendix H

Glossary

Terms used in this policy 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 are maintained.

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. § 115A.03, subd. 5).

Commercial solid waste — Solid waste generated by stores, offices, businesses, restaurants, warehouses, and other non-manufacturing activities; and non-process 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. 703 5.0300, subp. 20).

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. § 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 in solid, semisolid, liquid, or contained gaseous form, which because of its 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 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. § 116.06, subd. 11).

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. § 1 15A.96, subd. lb).

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. § 1 15A.03, subd. 17).
Major appliances	Defined by statute as clothes washers and dryers, dishwashers, hot water heaters, heat pumps, furnaces, garbage disposals, trash compactors, conventional and microwave ovens, ranges and stoves, air conditioners, dehumidifiers, refrigerators, and freezers (Minn. Stat. § 1 15A.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)	(a) Garbage, refuse, and other solid waste from residential, commercial, industrial, and community activities that the generator of the waste aggregates for collection, except as provided in paragraph (b). (b) Mixed MSW does not include auto hulks, street sweepings, ash, construction debris, mining waste, sludges, tree and agricultural wastes, tires, lead acid batteries, motor and vehicle fluids and filters, and other materials collected, processed, and disposed of as separate waste streams, but does include source-separated compostable materials (Minn. Stat. § 115A.03, subd. 21).
Organic waste	Organic waste typically includes food waste, non-recyclable paper products, yard waste, and other materials that readily degrade. Organic waste will be more clearly defined in the regional solid waste master plan to be developed in 2004 (see Part Three: Implementing the Policy Plan: Opportunities and Challenges – Organics Waste Management).
Organized collection	A system for collecting solid waste in which a specified collector, or a member of 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. § 115A.94, subd. 1).
Other inorganics	Noncombustible, nonmetallic material such as grit, rocks, and ceramics not otherwise categorized.
Other nonferrous	Metals other than iron, such as copper, brass, zinc, and lead.
Participation rate	The percent of eligible waste generators participating in an abatement program within a specified time frame and 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 (1) the release of a hazardous substance, or pollutant or contaminant, (2) pollution of water, (3) air pollution, or (4) a significant threat to the safe or efficient operation of a solid waste processing facility. The four conditions are further defined in Minn. Stat. § 115A.03, subd. 24a.
Processing	The treatment of waste after collection and before disposal. Processing includes, but is not limited to, reduction; storage; separation; exchange; resource recovery; physical, chemical, or biological modification; and transfer from one waste facility to another (Minn. Stat. § 115A.03, subd. 25 and. 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. § 115A.03, subd. 25a).
Refuse-derived fuel	The fraction of processed mixed municipal solid waste that is shredded and used as fuel in a boiler. It consists of lighter weight materials such as plastic and 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. § 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 § 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, sludge from a water supply treatment plant or air contaminants treatment facility, and other discarded waste materials and sludges, in solid, semisolid, liquid, or contained gaseous form, resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include hazardous waste; animal waste used as fertilizer; earthen fill; boulders; rock; sewage sludge; solid or dissolved materials in domestic sewage or other common pollutants in water sources, such as silt, dissolved or suspended solids in industrial wastewater effluents or discharges which are point sources subject to permits under section 402 of the federal Water Pollution Control Act; as amended; dissolved materials in irrigation return flows; or source, special nuclear, or by-product materials as defined by The Atomic Energy Act of 1954, as amended (Minn. Stat. § 116.06, subd. 22).
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.
Source reduction ***(see also Waste reduction)***	An activity that prevents generation of waste or the inclusion of toxic materials in waste, including (1) reusing a product in its original form, (2) increasing the life span of a product, (3) reducing material used in production or packaging, or (4) changing procurement, consumption, or waste generation habits to result in smaller quantities of waste generated (Minn. Stat. § 115A.03, subd. 36a).
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 § 115A.03, subd. 33).
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. § 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. §§ 115A.62 to 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 facilities include, but are not limited to, transfer stations, processing facilities, and disposal sites and facilities (Minn. Stat. § 115A.03, subd. 35).
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. § 115A.03, subd. 36).
Waste reduction ***(see also Source Reduction)***	An activity that prevents generation of waste or the inclusion of toxic materials in waste, including (1) reusing a product in its original form, (2) increasing the life span of a product, (3) reducing material used in production or packaging, or (4) changing procurement, consumption, or waste generation habits to result in smaller quantities of waste generated (Minn. Stat. § 115A.03, subd. 36a).
Yard waste	Garden wastes, leaves, lawn cuttings, weeds, shrub and tree waste, and prunings (Minn. Stat. § 115A.03, subd. 38).