

REPORT



*Minnesota state government as
a leader in waste reduction,
recycling and promotion
of environmentally
preferable products*

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October 3, 2000

Commissioner David Fisher
Department of Administration
200 Administration Building
50 Sherburne Avenue
St. Paul, Minnesota 55155

Dear Commissioner Fisher:

It is our pleasure to submit the *State Resource Recovery Program Recommendations Report* as required by Minnesota Statute section 115A.15, subdivision 5(b). Section 115A.15 requires the director of the Office of Environmental Assistance (OEA) and the commissioner of the Department of Public Service (now part of Department of Commerce) to review and submit recommendations to the Department of Administration on the operation of the State Resource Recovery Program.

We would also like to take this opportunity to congratulate the Department of Administration for its excellent work on designing and implementing the Resource Recovery Program. Through this program, the Administration has effectively and efficiently reduced the waste generated by state agencies, recovered valuable resources and is in the process of developing tools to promote the procurement of recyclables. We would specifically like to commend Department of Administration staff Lynne Markus, Ron Kovacich, Jon Schaefer and Brenda Willard who, among others, have made these gains possible.

The recommendations contained in this report are aimed at improving and building on the success of these programs, and at enhancing interagency communication and networking. We believe that one of the biggest challenges over the next biennium will be training and encouraging procurement officers in the various state agencies to purchase recycled and "environmentally preferable commodities" as well as tracking the state's progress in this area. The OEA in particular hopes to continue its partnership with your staff to aid in these endeavors.

Sincerely,

A handwritten signature in black ink, appearing to read "James Bernstein".

James Bernstein
Commissioner
Department of Commerce

A handwritten signature in black ink, appearing to read "Sherry A. Enzler".

Sherry A. Enzler
Director
Office of Environmental Assistance

Executive Summary

The Office of Environmental Assistance (OEA) and Department of Commerce (DOC) view this report as an opportunity to increase the effectiveness of the State Resource Recovery Program and to show stakeholders that the state of Minnesota is willing to examine its record as:

- A waste manager, a recycler and a reducer of waste.
- A resource and energy consumer and a waste generator.
- A role model for compliance with resource recovery laws and policies.

Based on the report findings, the state of Minnesota holds itself accountable for its activities through its Resource Recovery Program and works on options for improvement or enhancement of those activities.

Organization of report

This report is organized according to the purpose and goals outlined in Minnesota Statue 115A.15. As a result, it covers two major topics, which align with the responsibilities of the Department of Administration's Resource Recovery Office and Materials Management Division (MMD): (1) reduction, reuse and recycling and (2) procurement and end-of-life management.

Summary of recommendations

The Office of Environmental Assistance and the Department of Commerce recognize that the Department of Administration does not always have the authority to require participation in reduction, reuse, recycling, procurement, or end-of-life management activities within all state agencies. When the Department of Administration does have authority to force change, it often chooses to partner with state agencies to achieve the desired outcomes. In addition, the Department of Administration makes its services and products available to state agencies covered under separate statute, such as Minnesota State Colleges and Universities. The Department of Administration is, therefore, in a unique position to provide leadership by encouraging certain activities. The recommendations in this report are offered to assist the Department of Administration in achieving its resource recovery goals.

Each recommendation in this report was first evaluated for feasibility, and then the extent of its positive environmental impact was determined. The OEA and DOC also evaluated each recommendation for performance. In each case, the performance of the environmentally preferable alternative was determined to at least equal the performance of the product being replaced.

The financial impact of implementing the recommendations in this report is obviously a significant consideration for the Department of Administration and for individual state agencies. There are three possible conclusions that can be drawn from a cost-benefit analysis of each recommendation:

1. The environmentally preferable practice costs less and saves money at the point of purchase. Examples are buying recycled-content copy paper and recycled paint.
2. The environmentally preferable practice is more expensive but has a reasonable payback period, which makes the purchase cost effective. One example is a duplex printer. It currently costs about \$200 or more to buy a duplex printer but reduces paper use by almost half.
3. The environmentally preferable practice is more expensive and does not have a payback period that would make the purchase cost effective in the near term. An example is recycled carpet. (Recycled carpet does compete with high end carpet, but most state agencies do not purchase top-of-the-line carpet.)

Recommendations for reducing, reusing and recycling

This section discusses the promotion of reducing waste generated by state agencies; the separation and recovery of reusable commodities; the separation and recovery of recyclable commodities; and surplus property.

Waste and toxicity reduction

The Department of Administration should continue to:

- Encourage all state agencies to adopt and implement the waste reduction strategies outlined in tools developed by the OEA, such as the *Office Waste Paper Reduction Kit* and *If Not You, Who?* waste reduction campaign.
- Take a leadership role to reduce use of office paper by taking advantage of technology to process solicitations electronically.
- Lead by example through its paper reduction and recycling efforts by printing double-sided on recycled paper containing a minimum of 30 percent post-consumer materials.
- Promote the use of e-mail messages instead of faxes where feasible.

Reuse of materials

The Department of Administration should continue to:

- Offer and enhance training opportunities and educational materials to all state agencies regarding waste and toxicity reduction, pollution prevention and reducing the amount of surplus.
- In the area of food waste management in state facilities, with assistance from the OEA, encourage food waste recycling, reuse, redistribution or composting.

Recycling efforts

The Department of Administration should continue:

- Examining, improving and implementing safety standards for the handling and moving of recovered materials at the State Recycling Center.
- Regular evaluation of the State Recycling Center efforts.

Recommendations for procurement and end-of-life management

This second section discusses procuring recyclable commodities; procuring commodities containing recycled materials and other environmentally preferable products; and green building techniques in construction and remodeling.

Incorporating environmental criteria into state contracts

The Department of Administration should continue to:

- Incorporate environmental criteria into state contracts.
- In specific solicitations where environmental conditions apply, work with the OEA to develop appropriate statements indicating that the state encourages corporate environmental responsibility.

Training for waste reduction and environmental purchasing

The Department of Administration should continue efforts to:

- Expand training in environmental purchasing as part of state certification classes.
- With assistance from the OEA, increase the promotion of environmentally preferable contracts to state agencies and local units of government.
- Promote and help distribute the *Environmentally Preferable Purchasing Guide*.

- Take advantage of technology through efforts such as enhancing its current e-mail activities to educate purchasers on environmental topics and issues, and promoting the use of the Central Stores Web-based ordering system.
- In partnership with the Environmentally Responsible Work Group, educate agency staff in order to increase use of recycled copy paper.
- With assistance from the OEA, encourage other state agencies to adopt the Department of Transportation (MnDOT) specifications for use of compost in road construction projects or develop their own specifications for use of compost in all appropriate state projects.
- With assistance from the OEA, increase purchasers' awareness of the availability of plant-based products.

Tracking and evaluation of environmental purchasing

The Department of Administration should continue to:

- Maintain and keep current the list of environmentally responsible products and services available through state contracts and Central Stores.
- Implement and enhance measures for tracking environmental purchases.

Green building techniques in construction and remodeling

The Department of Administration should work with the OEA, the Department of Commerce, Minnesota Planning and other state agencies involved with the Smart Building Partnership initiative to:

- Increase use of "green" building design and construction practices.
- Encourage setting and achieving "Smart Building Goals" that provide the state with a comprehensive set of benchmarks for high performance buildings and wise capital investments.
- Encourage property management companies leasing space to state agencies to employ the state green building practices outlined above.

Background

The state Department of Administration Resource Recovery Program was established in 1980 through Minnesota Statute 115A.15 (see Appendix A). According to the statute, the State Resource Recovery Program has six main goals:

1. Promotion of reducing waste generated by state agencies.
2. Separation and recovery of recyclable commodities.
3. Separation and recovery of reusable commodities.
4. Procurement of recyclable commodities.
5. Procurement of commodities containing recycled materials.
6. Uniform disposition of recovered materials and surplus property.

In 1991, in order to enhance the efficiency the Resource Recovery Program, the Department of Administration adopted *Priorities for Environmental Materials Management* (see Appendix C.) These priorities stress waste reduction and resource conservation, as well as a hierarchy of preferred waste disposal options.

To measure attainment of its goals, the Department of Administration prepares a measurement report each year. In addition, the Department of Administration uses numerous methods to obtain customer feedback. In addition, the Department of Administration is required to submit a report on the State Resource Recovery Program to the governor and Legislature by January 1 of every odd-numbered year. In this report, the Department of Administration establishes goals for the program (see Appendix B for goals outlined in January 1999 report).

The recommendations contained in the January 2000 *Solid Waste Policy Report* (see Appendix D) follow the waste management hierarchy and are reflected in this report. The recommendations in this report are put forward to help move the state's efforts away from the bottom of the hierarchy and toward the most preferred actions of reduction and reuse.

Waste Management Hierarchy

Preferred methods for managing waste, listed in descending order of priority.

1. Reduction and reuse
2. Recycling
3. Composting
4. Resource recovery
5. Landfilling with methane recovery
6. Landfilling

Reduction, Reuse and Recycling

This section discusses promoting the reduction of waste generated by state agencies; separating and recovering reusable commodities; separating and recovering recyclable commodities; and surplus property.

Current reduction, reuse and recycling efforts

Reduction

The State Resource Recovery Program has achieved a 47 percent reduction in solid waste disposal between fiscal year 1989 and fiscal year 1997. Solid waste disposal in fiscal year 1989 was 1.71 pounds per capita per day at the Capitol complex. In fiscal year 1993 the per capita disposal was 1.22 pounds; in fiscal year 1997, it decreased to 0.90 pounds.

Paper products compose the majority of Capitol Complex agency discards. Paper accounts for 98 percent of recyclables and 42 percent of refuse. New electronic technology is currently being developed for Central Stores that will reduce the need for paper purchase orders. The Resource Recovery Office (RRO) agency training and initiatives have addressed paper waste reduction and recycling (such as double-sided paper use and reuse for copying, and printing) increased electronic communications, and more efficient data placement within reports.

Customer outreach and coordination efforts include the promotion of Pollution Prevention Week and America Recycles Day, as well as providing environmental printing training. RRO

provides information on waste reduction (toxicity and amount) and recycling to state agencies in agency-specific formats.

The Department of Administration has worked with state agencies to initiate innovative programs. Interagency initiatives, such as organics recovery (food donation, animal feeding and composting) and increased reusable/returnable transport packaging, have been implemented. One example is MnDOT's development of specifications for the use of compost in road construction projects. MnDOT has been purchasing compost from composting facilities around the state for use in its projects.

Reuse

The Materials Management Division (MMD) Surplus Services acquires and redistributes state and federal reusable equipment and surplus products to eligible public entities and non-profit organizations. Reusable office supplies are promoted by RRO and provided by the State Recycling Center to customers using its recycling services. Supplies such as file folders, file dividers, notebooks, paper tablets, paper reams, paper clips, bulldog clips, and record storage boxes are separated from recyclables. Some agencies are regular customers with ongoing requests to the Center for reusables.

The Department of Administration reuses corrugated storage boxes about 10 times prior to recycling them. The industry average for reuse is 4 to 5 times. In addition, RRO routinely cleans and refurbishes recycling collection containers for public agencies.

The Minnesota Pollution Control Agency (MPCA) and OEA began collecting source-separated organics (food, plant waste, non-recyclable paper) in September 1999. The program was implemented throughout the MPCA/OEA building and the cafeteria for the MPCA/OEA/DNR complex. The cafeteria management also changed tableware to paper plates, bowls, cups and biodegradable flatware. The program has reduced the amount of waste remaining after recycling by approximately 30 percent. The material is collected by a contracted hauler and delivered to the SKB composting site in Dakota County.

Recycling

For state agencies in the metropolitan area, Minnesota Statute 115A.15, subd. 9 set a recycling goal of 60 percent of discards by December 31, 1996. In fiscal year 1997, metropolitan-area agencies collected 64 percent of their discards for recycling. Some locations exceeded 90 percent. There has been a steady increase in recyclables recovered per capita, growing 86 percent from fiscal year 1989 to fiscal year 1997

The recycling center maximizes the amount, type, and quality of recyclables that are marketed to recycling industries. Paper constitutes the majority of recyclables recovered. RRO was able to market all recovered papers due to establishing multi-year marketing contracts, and placing a high priority on good relationships with the local recycling industry.

The Resource Recovery Office wanted to find out why some state agencies were not able to meet the goal and to find ways to help them achieve it. RRO distributed a waste reduction and recycling questionnaire to determine the barriers to recycling. Reasons listed for low recovery rates by the Department of Administration in its report for fiscal years 1997 to 1998 were:

- Buildings with physical barriers
- Lack of markets for discards
- Lack of recycling space for storage and collection of materials
- Low population
- Agency relocation
- Lack of agency motivation

As a result, RRO provided site-specific assistance to these agencies to help them achieve the 60 percent recycling goal.

RRO promotes collection of recyclables including paper, cans, glass, and plastic food and beverage containers. Paper is collected in separate containers for white, pastel and mixed paper, or is managed as confidential material. Cans, glass and plastic food and beverage containers are commingled in one container, reducing glass breakage and avoiding heavy, glass-only containers).

Recycling per capita at the Capitol complex

The amount of recyclables collected per person, per day, has risen steadily since 1989.

Fiscal Year	Daily pounds per person
1989	1.00 lb./day
1993	1.42 lbs./day
1997	1.86 lbs./day

The Department of Administration is seeking out and implementing new recycling opportunities to increase recycling and reuse by the state. One example is electronics recycling and reuse. A new state contract will soon be awarded for the disposal of electronics, including computers. This contract will provide for the pickup, transportation, recycling and the proper disposal of hazardous waste by-products. The contract will emphasize reusing and recycling the components of the electronics waste and will ensure that no hazardous constituents are released.

Recycling partnerships have been a major focus of the Resource Recovery Office during the past decade. In 1999, RRO and Washington County established a mutually beneficial recycling and waste reduction partnership. The Washington County collaboration increased county government recycling rates, which helped the county achieve significant progress toward its solid waste management goals and its county and regional master plans. All recyclables are marketed through RRO's State Recycling Center and provide revenues to the State General Fund. RRO initiated recycling and waste reduction training, educational exhibits, and services for over 1,500 employees at county government offices.

In another partnership, RRO has worked with the Department of Natural Resources' Youth in Natural Resources (YINR) program since 1998. High school students from minority backgrounds intern with RRO to develop workplace skills and knowledge of environmental service delivery during the summer. The YINR interns produce environmental posters and fact sheets that are posted around the Capitol complex and provided to Lafayette Park agencies throughout each year. The interns also work at the State Recycling Center. RRO facilitates YINR recycling training that provides information and tours of recycling facilities to all YINR interns working at other state locations. In 1998 and 1999, RRO interns were elected by their YINR program peers to receive \$1,000 awards based upon their achievements.

The State Recycling Center works in partnership with many other state offices. Employees from other locations work at the Center when they have injuries that restrict them from performing their usual physical work tasks. Also, the Department of Corrections Sentence to Service program routinely sends workers to the Center from their operations at the Lino Lakes facility and in Ramsey County, Dakota County and Washington County. These Sentence to Service workers increase the value of recyclables by performing work that is not economical for staff to perform.

Another key activity of the Resource Recovery Office is the design and construction of innovative, ergonomically-sound materials handling equipment composed of 100 percent post-consumer plastic lumber at the State Recycling Center. Tours of the center promote the importance of ergonomic design and the practicality of construction using 100 percent post-consumer plastic lumber.

Ergonomics and worker safety have been primary considerations during the planning and start up of the State Recycling Center. Employees are routinely encouraged to propose modifications that would improve the safety and efficiency of operations. As a result, staff at the Center have proposed and implemented many improvements, culminating in their innovative sorting station for commingled food and beverage containers. This station consists of a materials lift, a table with chutes, and an adjustable standing platform for the staffperson. The automated lift tips containers of recyclables onto a table that allows workers to guide glass, cans and plastic to separate, pneumatically controlled chutes. The potential for cumulative stress injuries is reduced by the automation, by altering employee arm motions to reflect the latest ergonomic advice, and by enabling each staffperson to appropriately adjust the height of their workstation.

Recommendations

Waste and toxicity reduction

- The Department of Administration should continue to
- Encourage all state agencies to adopt and implement the waste reduction strategies outlined in tools developed by the OEA, such as the *Office Waste Paper Reduction Kit* and *If Not You, Who?* waste reduction campaign. Examples of activities include reusing once-used paper for drafts and file copies, reusing envelopes, and managing mail lists to reduce paper use.
- Reduce use of office paper by taking advantage of technology to process solicitations electronically.
- Continue its paper reduction and recycling efforts by printing double-sided on recycled paper containing a minimum of 30 percent post-consumer materials.
- Promote the use of e-mail messages instead of faxes where feasible to reduce waste paper.

Reuse of materials

The Department of Administration should:

- Continue and enhance training opportunities, such as offering workshops and on-site classes, and distributing educational materials to all state agencies regarding waste and toxicity reduction, pollution prevention and surplus reduction. Efforts to raise awareness and procurement of items that are available for reuse rather than generating more materials through new purchases could include:

Promoting the listing of excess items for reuse through the State Surplus Program and Materials Exchange Program.

Continuing to ensure that surplus and refurbished office furniture is managed for optimal reuse.

Raising employees' awareness of the importance of proper recycling, reuse and redistribution of surplus materials.

Encouraging state agencies to participate in a bargaining program to disperse surpluses to other agencies before sending items to the recycling center. This would increase reuse efforts and eliminate the redistribution step.

Using the Internet to promote the reuse of federal and state surplus property.

Electronically posting the state recycling reusable log.

- In the area of food waste reuse and reduction in state facilities, with assistance from the OEA, continue to encourage food waste recycling, reuse, redistribution or composting. Targeted agencies could include high producers, such as the Department of Corrections and State Regional Treatment Centers. Food waste reuse and reduction efforts could include:

Develop a standard-practice guideline document for agencies and cafeterias to deal with waste food through reuse (e.g., donating excess unprepared foods to food banks or prepared and perishable foods to programs that handle redistribution). Donations are offered protection under the Good Food Donation Act.

Encourage food service vendors under contract with the state to work with local food re-distributors.

Promote development and implementation of source-separated composting programs in state agency buildings. Programs could be patterned after the MPCA/OEA program.

Continue to encourage food waste recycling, as permitted by the Minnesota Board of Health. Food-to-livestock is the most common method of food recycling.

Recycling efforts

The Department of Administration should continue

- Examining, improving and implementing safety standards for the handling and moving of recovered materials at the State Recycling Center. Improvements should continue to include incorporating equipment that would ergonomically reduce the threat of injuries.
- Regular evaluation of the State Recycling Center efforts. Time studies should continue to be completed.

Procurement and End-of-Life Management

This second section discusses procuring recyclable commodities; procuring commodities containing recycled materials and other environmentally preferable products, and green building techniques in construction and remodeling.

Current procurement and end-of-life management efforts

State agencies are implementing a large variety of toxicity reduction and pollution prevention activities through the Interagency Pollution Prevention Advisory Team (IPPAT). IPPAT was established in 1991 and renewed by the Ventura Administration under Executive Order 99-4. This Executive Order directs state agencies to align their policies and culture to prevent pollution at its source and to prepare annual summary reports on their pollution prevention activities. The Office of Environmental Assistance coordinates IPPAT, which meets quarterly to share information and successes in meeting the goals set forth in the Executive Order. Many of the projects have been found to not only benefit the environment, but also to reduce costs. Appendix E includes several examples of pollution prevention activities being implemented by state agencies, colleges and universities. A complete listing of state agencies' pollution prevention activities by category is found in the *1998 Pollution Prevention Summary Report*, authored by IPPAT and the OEA.

The Department of Administration has made great strides in boosting the purchase of environmentally preferable products and services. Appendix E summarizes the progress made in expanding environmentally preferable purchasing in state government. The Materials Management Division (MMD) and Central Stores have also increased the availability of environmental products, with assistance from the OEA and Resource Recovery Office (RRO).

The Web-based ordering system now in service reduces paper usage for state agencies and Central Stores. The Department of Human Services has indicated that they will move to an entirely on-line (paperless) ordering system with Central Stores. As part of this transition, they worked with Central Stores to remove virgin copy paper from the "on-line shopping list" so that departments within Human Services will only have an option to order recycled copy paper. Other agencies are encouraged to work with Central Stores to do the same.

The Department of Administration has also expanded training in environmental purchasing. Appendix E details several examples of current training and procurement efforts provided through the department.

The Department of Administration's work on the State Hazardous Waste Risk Management Strategy includes a hazardous waste contract evaluation that provides a detailed analysis of the proposals and a streamlined review process for contract bidders who have demonstrated qualifications. Four programs currently being provided through MMD's contract services are:

- Re-refined oil service
- Tire recovery and reuse
- Mercury and PCBs alternatives and management
- Emergency response

The Department of Administration has worked to increase fuel efficiency efforts and the use of alternative fuels. In general, Minnesota's efforts regarding oil and oil filter management have primarily focused on the general public who are performing their own oil changes.

The Department of Administration is encouraging "green" or environmentally preferable practices in state-leased buildings. In 1999, Real Estate Management incorporated new standard language into their leases that reads as follows:

LESSOR shall use its best efforts to employ practices that protect occupant's health and ensure conservation of natural resources in the operation and maintenance of the building and the Leased Premises.

Some Minnesota agencies have already helped develop substantial information on the methods and benefits of certain green building practices and technologies and can work with other agencies to incorporate them into current and future building projects.

Recommendations

Increasing availability of environmentally preferable products

- The Department of Administration should continue incorporating environmental criteria into state contracts to more environmentally preferable products. The following products and related contracts could be specifically addressed:

Absorbents. Encourage the use of fiber absorbents. Specify that fiber absorbents contain a minimum of 90 percent post-consumer recycled content. Fiber absorbents reduce the use and landfilling of clay-based absorbents, and requiring recycled content supports recycling efforts.

Adhesives. Volatile organic compounds (VOCs) can degrade indoor air quality and may cause respiratory distress. When VOCs are exposed to sunlight, they also create a harmful air pollutant that causes smog. To reduce unnecessary exposure to formaldehyde and other harmful air pollutants, specify low-VOC and non-formaldehyde adhesives, carpeting and upholstery.

Automotive fuels and efficiency. Continue to encourage use of fuel alternatives that reduce emissions. For example, to reduce the generation of nitrogen and sulfur oxides, particulate matter and carbon dioxide, continue to promote E85 fuel-capable vehicles, known as flexible fuel vehicles (FFVs), and to promote the purchase of low-sulfur, oxygenated fuel for other vehicles. Purchase and promote use of vehicles that get between 60 to 70 miles per gallon while maintaining safety and convenience of standard passenger vehicles.

Copiers, computers and electronics. To encourage Design for the Environment (designing products with their environmental impacts in mind), promote the use of the state contract for the disposal of computers. By using the new disposal contract for electronics, state agencies can ensure that waste computers and other electronics are reused and recycled whenever possible and that the components of the waste electronics are managed in a way that avoids the release of hazardous constituents. To promote Design for the Environment, encourage the use of machines supplied by manufacturers who will take them back for recycling at the end of the machine's useful life. To reduce the generation of nitrogen and sulfur oxides, particulate matter and carbon dioxide, insist upon Energy Star- compliant copiers, electronic thermostats, occupancy sensors, computers and monitors. To reduce the use of hazardous propellants, clean machines with pressurized carbon dioxide. To reduce the use of paper, purchase duplex printers.

Ice control. Encourage the use of non-sodium alternatives, such as potash, for ice control on sidewalks. In addition to melting ice, potash provides grit for traction, is less damaging to carpet and floors, and provides fertilizer for grass near the sidewalks, rather than killing it.

MINNCOR Industries. In consultation with the OEA, work with MINNCOR, a division of the Minnesota Department of Corrections, to incorporate environmental specifications into the state contracts awarded to MINNCOR.

Office supplies. To reduce solid waste, encourage state agencies to continue returning printer and copier toner cartridges for re-manufacturing and reuse.

Outdoor and indoor lighting. To help conserve energy and cut down on light pollution, encourage the use of high-pressure sodium bulbs for outdoor lighting and T-8 and compact fluorescent bulbs for indoor lighting.

Paint. To minimize paint waste, encourage users of the State Hazardous Waste Contract to identify the feasibility and economic benefits of collecting and transporting latex paint in original containers and to explore using reusable and collapsible transport packaging boxes made from post-consumer recycled content. Work with MPCA and OEA to develop a separate, fiscal year 2001 contract to manage latex paint as a non-hazardous material. (The latex paint contract expires in February 2001.)

Pesticides/Integrated Pest Management (IPM). To avoid the unnecessary use of pesticides, encourage the use of IPM best practices to replace traditional spraying of hazardous chemicals.

Re-refined oil. In accordance with federal recycled content guidelines, strongly encourage that all motor oil used to service state vehicles be made with a minimum of 25 percent re-refined oil. Currently, state vehicles that are serviced at a private automotive station can be supplied with either virgin or refined oil. Meanwhile, the State of Minnesota Motor Pool has used re-refined motor oil for virtually all its oil changes since 1998. Requiring vendors of oil lube services to use re-refined motor oil will create greater consistency in state policy while reinforcing the state's efforts to recycle used motor oil.

Signage. Specify plastic, aluminum and steel signs to meet the federal recycled content guidelines.

Transportation safety products. Specify traffic cones, channelizers, delineators, parking stops, and traffic barricades to meet the federal recycled content guidelines. For example, traffic cones should contain a minimum of 50 percent post-consumer crumb rubber or plastic. Currently nine states belong to a multi-state contract for recycled traffic cones. The volume of this contract has grown each and every year, now topping 60,000 recycled cones per year. Minnesota should look into the feasibility of participating in this contract.

Trash bags. In accordance with federal recycled content guidelines, specify that all plastic trash bags contain a minimum of 10 percent post-consumer plastic. The Commonwealth of Massachusetts goes beyond the federal standards and requires all trash bags to contain a minimum of 20 percent recycled material.

Waste management services. The Department of Administration, working with the OEA, should instruct all state facilities to perform assessments of their waste management services. At the minimum, each location should review its services (recycling, disposal and other services) and the rates it pays for them. Subsequent to the review, each state facility should contact the local county solid waste management office to determine if the services provided are in compliance with the relevant county's Solid Waste Management Master Plan, as required by state law (Minnesota Statute 115A.471). Performing this review and consultation will demonstrate the state's desire to cooperate with local government, manage environmental risks and help the environment.

- The Department of Administration should work with the OEA to develop appropriate statements in specific solicitations where environmental conditions apply, indicating that the state encourages corporate environmental responsibility and explaining why the state is including these types of specifications. Encouraging corporate environmental responsibility helps motivate companies to internalize environmental issues and think about product

stewardship. For example, when drafting the bid solicitation for flooring, a specification for recycled content flooring was included along with the following statement:

While the State of Minnesota is accepting bids for both virgin and recycled flooring products, the State is particularly interested in expanding procurement for recycled flooring products to stimulate and strengthen markets for materials collected in recycling programs.

Training for waste reduction and environmental purchasing

The Department of Administration should continue to:

- Expand training in environmental purchasing as part of state certification classes. Raising awareness will help increase government purchases of environmentally preferable products.
- With assistance from the OEA, increase the promotion of environmentally preferable contracts to state agencies and local units of government. Possible distribution mechanisms include the Department of Administration's Web site and broadcast fax system, OEA's Web site, training, articles in purchasing association newsletters, and booths at trade association conferences. Educating state agencies and local governments about contracts for products or services such as recycling old computers, purchasing reprocessed or re-blended non-VOC paint, non-VOC epoxies or recycled content flooring is especially important. As a result of increased promotion, environmentally preferable purchasing will increase at all levels of government.
- Promote and help distribute the *Environmentally Preferable Purchasing Guide*. This guide will raise awareness and help increase buying of environmentally preferable products.
- Take advantage of technology and enhance its current training efforts by sending out e-mails and faxes to state purchasers on environmental topics and issues and continuing to update and revise the department's environmental Web page.
- In partnership with the Environmentally Responsible Work Group, enhance efforts to educate agency staff in order to increase use of recycled copy paper.
- With assistance from the OEA, encourage other state agencies to use the MnDOT specifications for use of compost in road construction projects or develop their own specifications for the use of compost in all appropriate state projects. In addition to moving waste up the waste management hierarchy to composting by increasing demand, the state will save time and money through greater efficiency. Construction projects strip off topsoil, leaving no organics in the soil; as a result, seeding often fails and must be repeated several times. When nutrient-rich compost is used to replace the topsoil, the success rate of seeding goes up significantly.
- With assistance from the OEA, increase purchaser's awareness of the availability of plant-based products. As an example, the OEA could investigate Michigan's efforts to encourage state and local governments to use plant-based oils and fuels. On May 4, 1999, the state of Michigan passed House Concurrent Resolution No. 34. The resolution states "to urge state government agencies to use bio-based products as a source of oil and diesel fuel whenever possible." The resolution goes on to detail the many advantages bio-based fuels from oils and fats of plants offer over fossil fuels and that the cost will likely decrease as use increases. Plant-based products are derived from renewable resources, including fiber crops, such as kenaf, chemical extracts from oilseeds, nuts, fruits and vegetables such as corn and soybeans, agricultural residues such as wheat straw and corn stover, and wood wastes generated from processing and manufacturing operations. These products stand in contrast to those made from fossil fuels like petroleum and other less renewable resources, such as virgin timber.
- The Department of Administration should continue to provide training that covers printing choices and the environment, promoting the use of recycled content paper and environmentally preferable printing methods for print buyers and designers.

Tracking and evaluation of environmental purchasing

To encourage environmentally preferable purchasing, the Department of Administration should continue to:

- Maintain and keep current the list of environmentally responsible products and services available through state contracts and Central Stores. State purchasers and local governments can use this list as a tool to help them find the preferred products and to measure the number and types of environmentally preferable products and services the state offers.
- Implement and enhance measures for tracking environmental purchases to measure the effectiveness of and make appropriate adjustments to the procurement portion of the State Resource Recovery Program. Examples of tracking options and enhancements include:

Auditing and reviewing purchasers' environmental purchases.

Evaluating and measuring first year environmental purchases on specific products, such as reprocessed and re-blended paint.

Requiring vendors who are awarded state contracts to submit reports outlining state agencies' purchases of environmental products sold through the contract.

Conducting impromptu environmental audits of vendors to make sure they are complying with environmental standards required under the terms of the state contract. For example, verify that vendors are recycling used carpet and refurbishers are replacing worn furniture parts with used rather than new parts.

Green building techniques in construction and remodeling

The Department of Administration should work with the OEA, the Department of Commerce, Minnesota Planning and other members of the Smart Building Partnership initiative to:

- Increase efforts on green building design and construction. Green buildings are ones where the quality of both the indoor and outdoor environments is protected during the design, construction, operation and maintenance of the building. State government has an opportunity to lead by example, reduce long-term costs and improve environmental and employee performance by incorporating into its capital projects state-of-the-art practices in building siting, design, operations and maintenance practices. The purpose of these efforts is to promote sustainable development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend.

The emergence of high-performance "smart buildings" around the world suggests a need to develop new policies, decision-making processes and goals for public building in Minnesota that will ensure continuous improvement in the economic, environmental and human health performance of the state's built environment. Efforts could include, but are not limited to:

Developing policies that favor landscaping, maintenance, and building operations and procurement strategies that reduce the use of toxic products.

Developing model language for bid solicitations that emphasizes source reduction, reuse and recycling of materials generated through construction, remodeling and demolition activities, and ensures that new construction and renovations incorporate cost-effective green building and sustainable construction measures.

Developing "deconstruction" specifications for inclusion in bid solicitations that promote reuse or recycling of demolition materials from building demolition projects.

Encouraging and assisting state agencies in applying the *Minnesota Sustainable Design Guide*, a building design and construction rating tool, to building and remodeling projects.

Exploring the potential to use recycled building products that meet the federal recycled content standards. For example, use fiberglass insulation that contains a minimum of 20 percent recycled glass.

- Encourage setting and achieving “Smart Building Goals” that provide the state with a comprehensive set of benchmarks for high-performance buildings and wise capital investments. Goals could include: lowest lifetime costs; healthy, productive work environments; more accessible government; sustainable resource use; sustainable energy use; pollution prevention; optimal building performance; healthy natural systems; consistent, effective government; and continuous improvement.
- Encourage property management companies leasing space to state agencies to employ the state green building practices outlined above.

Appendix A

Duties as outlined in Minnesota Statute 115A.15

To better understand the recommendations relating to the operation of the Resource Recovery Program contained in this report, the respective duties of the commissioner of Administration, state agencies, local units of government and school districts need to be delineated.

First, the following duties of the commissioner of Administration are detailed in Minnesota Statute 115A.15 Subdivision. 2:

“The commissioner of administration shall:

- Develop policies to require state agencies and the state legislature to separate all recyclable and reusable commodities wherever feasible.
- Develop and institute procedures for the separation, collection, and storage of used commodities wherever feasible in state agencies and
- Establish policies for the reuse, sale, or disposition of recovered materials and surplus property.
- Promote and publicize the waste reduction and waste separation and recovery procedures on an ongoing basis to all state employees.
- Issue guidelines for the procurement of recyclable commodities and commodities containing recycled-materials that include definitions of recycled materials, the percentage of recycled materials to be contained in each commodity and performance specifications.
- To the extent feasible, the guidelines shall be written so as to give preference to recyclable commodities and commodities containing recycled materials.
- Inform state agencies whenever recycled commodities are available for purchase.
- Investigate opportunities for the inclusion of and may include local governments and regional agencies in administrative state programs to reduce waste, and to separate and recover recyclable and reusable commodities.”

In addition, the responsibilities of the commissioner of Administration in the areas of waste reduction procurement, recycled materials purchasing, recycling goals, and the materials recovery facility, are outlined as follows:

Subd. 7. Waste reduction procurement model. “...the commissioner, in cooperation with the director of the office of waste management, shall:

- Develop waste reduction procurement programs, including an expanded life cycle costing system for procurement of durable and repairable items by November 1, 1991.
- Develop and distribute informational materials for the purpose of promoting the procurement model to other public and private entities...”

Subd. 8. Recycled materials purchasing. “The commissioner of administration shall:

- Develop and implement a cooperative purchasing program under section 471.59 to include state agencies, local governmental units, and, where feasible, other state governments and the federal government, for the purpose of purchasing materials made from recycled materials.
- Develop a program to promote the cooperative purchasing program to those units of government and other persons.”

Subd. 9. Recycling goal. “The commissioner shall:

- Recycle at least 60 percent by weight of the solid waste generated by state offices and other state operations located in the metropolitan area.
- Notify that agency that the goal has not been met and the reasons the goal has not been met and
- Provide information to the employees in the agency regarding recycling opportunities and expectations.”

Subd. 10. Materials recovery facility; materials collection; waste audits. “The commissioner shall:

- Establish a central materials recovery facility to manage recyclable materials collected from state offices and other state operations in the metropolitan area.
- Establish a recyclable materials collection and transportation system for state offices and other state operations in the metropolitan area that will maximize the types and amount of materials collected and the number of state offices and other state operations served, and will
- Minimize barriers to effective and efficient collection, transportation, and marketing of recyclable materials.
- Perform regular audits on the solid waste and recyclable materials collected to identify materials upon which to focus waste reduction, reuse, and recycling activities and to measure: (1) progress made toward the recycling goal in subdivision. 9; (2) progress made to reduce waste generation; and (3) potential for additional waste reduction, reuse, and recycling.”

Finally, state agencies, local units of government and school districts also have responsibilities within Minnesota Statute 115A.151:

“A state agency, local unit of government, or school district shall:

- Ensure that facilities under its control, from which mixed municipal solid waste is collected, have containers for at least three recyclable materials, such as, but not limited to, paper, glass, plastic, and metal; and
- Transfer all recyclable materials collected to a recycler.”

Appendix B

State Resource Recovery Program Goals, Fiscal Years 1997 to 1998

The Department of Administration is required to submit a report on the Resource Recovery Program by January 1 of each odd numbered year as outlined in Minnesota Statute 115A.15 Subd. 5(a). The following goals were outlined in the January 1999 Department of Administration State Resource Recovery Program report for fiscal years 1997 to 1998.

Sustainable development partnerships

Sustainable development partnerships will continue to be nurtured to conserve our natural and manufactured resources and to achieve environmentally sound management of our discarded materials.

Partnerships to track recycled-content purchases

Administration will expand its partnerships with other state agencies to track and achieve environmental procurement improvements. Materials Management Division (MMD) will continue to invite OEA, other state agencies, and public entities to share environmental research and to make suggestions regarding the improvement of state contracts.

Environmental procurement training

Interagency procurement training will be improved to include analysis of environmental, social and economic benefits and liabilities associated with various products and services. Decision-making based on sustainable development will be incorporated into the Authority for Local Purchasing training for state purchasers. Training will assist purchasers to effectively request and review environmental considerations in bids and proposals.

Procurement audits

Agencies that have Authority for Local Purchasing certification will be audited for compliance every three years, at a minimum, and must have a successful audit to maintain their ALP certification.

Central Stores' environmentally aware products inventory and promotion

Central Stores will continue, as a top priority, the expansion of its environmentally aware products inventory and promotion.

Great Printers Project

Workshops for public entities regarding environmentally responsible printing and design will be conducted by the Resource Recovery Office in partnership with the St. Paul Neighborhood Energy Consortium.

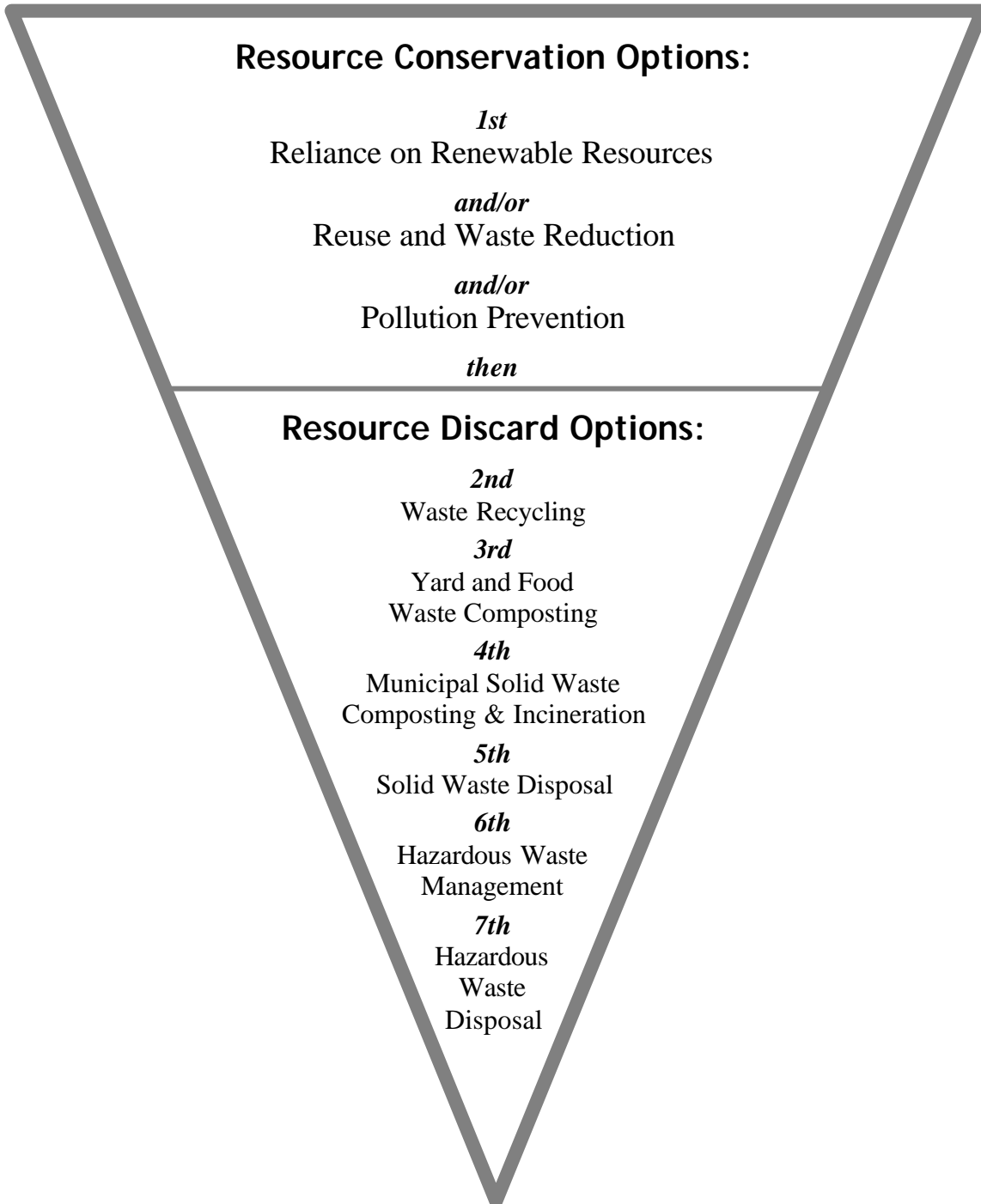
Waste abatement

The Resource Recovery Office will continue to work with agencies to improve progress toward waste abatement by decreasing the toxicity and amount of waste generated. Waste reduction activities will be expanded to Greater Minnesota locations along with recycling training, technical assistance, collection and marketing.

Appendix C

Minnesota Department of Administration Priorities for Environmental Materials Management

The acquisition, use, maintenance and discard of materials should first maximize resource conservation options to avoid and reduce waste quantity and volume. Then, resource discard options should be maximized in the order of priority.



Appendix D

Solid Waste Policy Report, January 2000

Section Four: Proposed Policy Initiative III

Policy initiative three: Develop markets for recycled content and reusable materials

Background

Recyclables market development is very much related to the *Policy Report's* strategy of transitioning from waste to resource efficiency. In the context of recycling, market development emphasizes the creation of primary and secondary markets for recyclable materials. The OEA promotes market development through grants, loans and technical assistance to established and emerging businesses. Without the development of markets for recycled or reused materials we will not be able to transition from a waste to a resource efficient society.

Recycling is an integral and necessary part of Minnesota's solid waste system. Despite the success of Minnesota's recycling programs and demonstrated national leadership, recycling is simplistically viewed as collecting separated materials for recovery. While the emphasis on collection has resulted in high collection rates, remanufacturing and purchasing must be given more attention.

While Minnesota's recycling infrastructure can be broadly described as mature, the current focus of Minnesota's recycling system is on reduction of the per-ton costs of processing the waste and stabilizing the market for recyclables while maintaining high collection levels. Although the market infrastructure for recyclables in Minnesota continues to evolve, the market has been characterized by mergers, expansions, buy-outs and acquisitions of firms involved in all aspects of the recycling industry. In addition, while the procurement of recycled products is in some cases a common practice, the procurement of recycled commodities is not wide spread.

The state should remain committed to working on Minnesota's recycling system including support of local collection programs and development of Minnesota-based markets; expand the types and quantities of materials for recycle; and assist in the use of recycled materials in new and existing products.

The state can play and actively help develop demand for recycled materials in two areas: green building design and construction and procurement of products with recycled content by state government. In conjunction with the state's efforts in these areas, the state will need to provide public education on resource conservation and economic benefits of green building design and environmentally preferable procurement. Education on these issues is needed to maximize the state's efforts to develop markets for recycled content products.

Goals/Outcomes

The following are the goals of this policy initiative:

- Spur demand for recycled and other environmentally preferable products.
- Support and enhance market development for recycled content products.

Incorporating environmental management in building design and construction (green buildings)

1. Background

Employing environmental management principles to buildings during design and construction presents a significant opportunity to reduce the solid waste destined for landfills or incinerators.

Green building designs offer the opportunity to use building materials with recycled content or to reuse building materials. Green building designs also incorporate features that optimize recycling by building inhabitants. For instance, adequate space for recycling, both near employee workstations as well as outside of the building, is often overlooked when a structure is designed. Finally, green building designs facilitate reuse and recycling of material at the end of the building's life by minimizing demolition waste at the time of design and construction.

2. Recommendations

Several state agencies and local units of government are working on green building projects and assisting private and public entities develop green building designs and techniques. The state needs to help maximize the benefits of these efforts. The "Smart Growth" agenda promoted by the Ventura Administration offers a unique opportunity to emphasize green building within the context of smart community development. The smart growth concept which emphasizes stewardship, efficiency, choice and accountability can facilitate a dialogue not only about where development is located, but also about the types of development that are environmentally preferable.

The following action items are recommended to implement this policy initiative:

- Examine and rewrite building code specifications to allow use of building materials with recycled content or reused building materials. This examination should identify codes and standards, which pose barriers to the use of resource efficient building materials.
- Explore development of tax credits or other economic incentives for developers or builders who incorporate green building practices into building design and construction, including, but not limited to, recycled content and reusable materials.
- Develop a green building policy for the state, which emphasizes a life-cycle analysis approach to building design and construction. The policy should encourage the use of recycled content, reusable or bio-based building material over virgin materials.
- Establish green building performance standards for newly constructed state buildings.
- Create a "green building" fund administered by the state that will provide rebates to firms engaged in green building practices.
- Promote economic development policies that recognize the opportunities for creating and strengthening markets for resource-efficient building materials in Minnesota.

Procurement

1. Background

Minn. Stat. §16B.121 directs the state to consider recycled content, recyclability, durability, reusability and the toxicity of commodities when advertising for bids for state procurement contracts. The statute also requires state agencies to purchase products with recycled content when the price does not exceed comparable non-recycled products by more than ten percent. Minn. Stat. §16B.122 directs public entities to use paper stock and inks which meets environmentally established criteria. The statute also provides that all copier paper purchased by state agencies must contain at least ten-percent post-consumer material. In 1999, the Legislature broadened the purchasing requirements of Minn. Stat. §16B.122 to include not only state agencies, but any entity which receives funding from the Legislative Commission on Minnesota Resources (LCMR).¹ Although these are good first steps in encouraging procurement of recycled or reused products, government needs to take a leadership role.

Procurement offers public entities the opportunity to develop market demand for environmentally preferable products. A commitment on the part of public entities to purchase recycled materials will allow government to play a leadership role in waste reduction.

¹ LCMR grant recipients must be in compliance with Minnesota's procurement statutes that require the purchase of recyclable, repairable, and durable materials.

Government “leading by example” will stimulate investment and market development for products that are reusable, contain recycled content, and contain minimal toxic substances. Environmental procurement also has the potential to provide market stability, which will stimulate the development of regional manufacturing capacity. Environmentally preferable procurement policy sends a strong signal to manufacturers that a market, a potentially significant market in the case of some products, exists for these products. Hopefully, manufacturers within the state will respond to this market signal, or it will encourage new manufacturing start-ups or relocations.

Environmental procurement is an important tool for promotion of industrial ecology and product stewardship. Government procurement policies that give preference to recycled or reused materials support companies, which employ manufacturing practices such as life-cycle analysis, full cost accounting, product take-back and leasing. Environmentally preferable procurement policies also impact management of a product at the end of its life. For instance, purchasing contracts may specify that manufacturers are responsible for managing a product at end of life.

Aggressive government procurement policy sends a message to manufacturers that they, as producers, share responsibility for their products and encourages manufacturers to invest in technology and equipment that meet environmental requirements set by government purchasers.

Since the late 1980s, the state has encouraged consumers to buy source-reduced products and products containing recycled materials. The OEA has held “Buy Recycled” workshops, sponsored the “SMART Shopping” campaign, developed fact sheets and directories to educate purchasers, awarded demonstration grants to educate consumers about the value of these products, and much more. In the last two years, the OEA has expanded its focus beyond promotion of products to one of encouraging government purchasers to buy environmentally preferable products.

The Department of Administration, the state’s central purchasing agency, is working with the OEA and recycling organizations such as the Recycling Association of Minnesota and the Association of Recycling Managers to incorporate environmental specifications into state purchasing contracts. The OEA is also partnering with the major state agencies, such as the Department of Natural Resources and the Department of Transportation to help them develop environmentally sensitive purchasing practices in these agencies. In addition, the OEA has developed a Web site to provide information on the application, performance, cost, and availability of environmentally preferable products for public entities.

On the federal level, President Clinton has issued two executive orders. Executive Order 12873 directed federal agencies to prevent waste whenever practical and feasible, to recycle, and to procure recycled content and other environmentally preferable products. This Executive Order has increased the procurement of recycled content products.² The policy, for example, has resulted in a four-fold increase in the purchases of recycled content paper products. In September 1998, President Clinton signed Executive Order 13101, which strengthens the federal government’s commitment to recycling and purchasing environmentally preferable product. This Executive Order addresses a wider range of environmentally preferable products, including bio-based products.³ Bio-based products are products that use biological products, renewable domestic agricultural products or forestry materials.

² Executive Order 12873, *Federal Acquisition, Recycling and Waste Prevention*, was signed by President Clinton on October 20, 1993.

³ Executive Order 13101, *Greening the Government through Waste Prevention, Recycling and Federal Acquisition*, expands and strengthens the federal government’s commitment to recycling and buying recycled content and environmentally-preferable products.

Appendix E

Current Training Efforts and Environmentally Preferable Purchasing

Current training and education efforts

Resource conservation

MMD and RRO jointly provided education and training to state agency staff to promote resource conservation and sustainable development during purchasing and recovery of materials. A travel display has been created.

Purchasing training resources

MMD, with assistance from OEA, is revising the purchasing manual and training workshop for state purchasers to include more in-depth information about environmental purchasing laws.

Environmental Web page

MMD revised its environmental Web page. Changes included citing Minnesota environmental purchasing laws, listing products available from Central Stores and state contracts, and linking to other web pages, including the OEA.

Plant-based products

The OEA is working with the Institute for Local Self Reliance (ILSR) on a grant project aimed at encouraging state and local purchasers to buy plant-based products. Information from the grant is being shared with the Department of Administration. Plant matter-derived products are made from local, renewable resources, such as fiber crops, nuts, fruits and vegetables, and agricultural residues.

Purchasing guide

To promote the purchase of environmentally preferable products, the Solid Waste Management Coordinating Board (SWMCB) developed the Environmentally Preferable Purchase Guide in conjunction with the Department of Administration and OEA. The guide provides direction on how to buy products that reduce workplace hazards, consume less energy, and protect natural resources. The guide covers more than 30 products and specifically addresses the cost, performance, and availability of environmentally preferable products.

Waste reduction and recycling

Waste reduction, recycling and environmental printing training is conducted by RRO at customer locations. Training sessions and special displays are custom designed to the specific customer needs.

Work group

The Department of Administration established an advisory committee referred to as the Environmentally Responsible Products Work Group. This group focuses on promoting environmental purchasing in state government and includes representatives from the OEA, the Recycling Association of Minnesota (RAM), MPCA, Minnesota Department of Transportation (MnDOT), Minnesota Department of Natural Resources (DNR), the Housing Finance agency and the Department of Labor and Industry. In 1999, the group recommended changes to the Department of Administrations environmental Web page and assisted in the development of environmental printing specifications and guidelines.

Current environmentally preferable purchasing efforts

Automotive fuels

E85 fuel is a blend of 15% gasoline and 85% ethanol made from renewable plant-based materials such as corn. E85 is used in flexible fuel vehicles (FFVs), which are virtually identical to regular gasoline-fueled vehicles except they can operate solely on E85, unleaded gasoline, or a mixture of the two. The state has purchased more than 300 FFVs from model years 1999 and 2000. Local public entities that are members of the State's Cooperative Purchasing Venture have purchased nearly 100 FFVs.

Electric-hybrid vehicles employ an electric motor to assist a gasoline engine during acceleration to achieve efficiencies up to 70 miles per gallon of gasoline. During deceleration, electricity is regenerated using the momentum of the vehicle to recharge a series of batteries. The state Pollution Control Agency has acquired the first of these vehicles sold in Minnesota, the Honda Insight, and is testing it for possible addition in greater numbers to the state fleet.

Copy paper

100 percent post-consumer copy paper, processed chlorine-free, is now sold through Central Stores and was first advertised in the January 2000 newsletter. Central Stores' goal by mid-FY2001 is to increase demand to the point where it can purchase this paper as well as colored recycled paper in truckload quantities to further reduce the cost of the paper to customers. Central Stores has also begun selling office calendars made with 30 percent post-consumer recycled content.

Envelopes

All envelopes sold on state Contracts P-707 and P-710 contain a minimum of 30 percent post-consumer recycled content, with the exception of white Kraft envelopes.

Office products

In FY98 MMD's Central Stores, worked with its vendor S&T Office Products to offer 2,226 recycled-content product lines. The number of recycled-content product lines in FY92 was 122. Currently, 25.5 percent of Central Store's net sales are recycled-content products.

Decking

Recycled plastic decking is being offered through state Contract P-720.

Desk cleaner

An environmentally preferable alternative desk cleaner is now in stock at Central Stores. This product, Restore the Earth-Spray & Clean, is free of dyes, perfumes, alcohol, ammonia, preservatives, phosphates, fumes, and petroleum products. It is sold in pint-sized spray bottles and gallon cans that will be added to the fall 2001 catalog.

Flooring and carpet

Environmental considerations will be incorporated into bid solicitations for the purchase of flooring. In the past, this contract offered only carpet recycling. The new contract will offer carpet recycling as well as recycled and low Volatile Organic Compound (VOC) flooring options.

MnDOT products

MMD partners with customers to conduct performance tests on environmentally preferred purchases. These efforts have included working with MnDOT on four alternatives for road de-icing, and with several state agencies on environmentally safe cleaning products. Interagency coordination resulted in new products, such as solar highway signs, refurbished State Patrol vehicles, air conditioners, d-limonene (used in bituminous road surfaces testing), alternative laboratory supplies, non-mercury dairy manometers, and low mercury products.

Paint

Minnesota developed a new FY2000 contract for reprocessed and re-blended paint