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POLLUTION PREVENTION SUMMARY REPORT

Consolidated from reports submitted by Members of the

Interagency Pollution Prevention Advisory Team

August 1999

POLLUTION PREVENTION

Right from The Start

For more information on pollution prevention activities in Minnesota State Government, please contact:

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STATE of MINNESOTA

EXECUTIVE DEPARTMENT

JESSE VENTURA
GOVERNOR

EXECUTIVE ORDER 99-4 PROVIDING FOR THE IMPLEMENTATION OF POLLUTION PREVENTION AND RESOURCE CONSERVATION BY STATE GOVERNMENT RESCINDING EXECUTIVE ORDER 91-17

I, JESSE VENTURA, GOVERNOR OF THE STATE OF MINNESOTA, by virtue of the authority vested in me by the Constitution and the applicable statutes, do hereby issue this Executive Order:

WHEREAS, the Minnesota Environmental Policy Act, Minnesota Statutes, Chapter 116D, directs all departments and agencies of the state to promote efforts that will prevent or eliminate damage to the environment, and to improve and coordinate state plans, functions, programs and resources to carry out this policy; and

WHEREAS, for the purposes of this Order, pollution prevention shall include energy and resource conservation and waste reduction; and

WHEREAS, pollution prevention reduces pollution at its source rather than treating or controlling pollution after it has been created; and

WHEREAS, pollution prevention often results in cost savings and increased efficiencies as well as enhanced environmental protection; and

WHEREAS, the Minnesota Toxic Pollution Prevention Act, Minnesota Statutes, Chapter 115D, specifies that it is the policy of the state to encourage pollution prevention; and

WHEREAS, pollution prevention promotes sustainability, providing a better quality of life for all residents while maintaining nature's ability to function over time; and

WHEREAS, there is considerable potential for pollution prevention in state government; and

WHEREAS, Minnesota state agencies benefit from interagency communication and joint problem solving;

NOW, THEREFORE, I hereby order state departments and agencies to continue to take these steps to prevent pollution:

1. All departments and agencies of the State of Minnesota shall promote policy and cultural reform to give priority to preventing pollution at its source of generation.

2. The Interagency Pollution Prevention Advisory Team, established in 1991, shall continue to:
   a) promote regular communication and cooperation between state agencies in preventing pollution;
   b) provide guidelines for state agencies in meeting requirements 4 thorough 6 below;
   c) review state agency progress reports;
   d) serve as a clearinghouse of information on progress made by state agencies in preventing pollution;

e) encourage the implementation of pilot projects in which state government can serve as a model;

f) recognize outstanding pollution prevention efforts of state agencies through such programs as the Minnesota Governments Reaching Environmental Achievements Together (MnGREAT!) awards;

g) promote efficiency in governmental pollution prevention efforts by reducing overlap of activities and by sharing innovative ideas; and

h) make recommendations for enhancing pollution prevention in state government.

3. The Interagency Pollution Prevention Advisory Team shall be chaired by a representative of the Office of Environmental Assistance. All state agencies shall cooperate with the team in the execution of this order. The team shall include, but not be limited to representatives of the departments of Administration; Agriculture; Corrections; Children, Families and Learning; Health; Human Services; Military Affairs; Natural Resources; Public Safety; Public Service and Transportation. The team shall also include representatives from the Minnesota Pollution Control Agency, Office of Environmental Assistance, Office of Strategic and Long-Range Planning, Office of Technology, Minnesota State Colleges and Universities, University of Minnesota, Minnesota Lottery, Board of Water and Soil Resources, Metropolitan Airports Commission, Metropolitan Council, Metropolitan Sports Facilities Commission and Metropolitan Mosquito Control Commission. The team shall meet regularly.

4. State agencies that generate significant quantities of hazardous waste or use significant quantities of toxic chemicals shall develop or revise policy statements to indicate that pollution prevention is a priority. These agencies shall also undertake activities to reduce their generation of solid and hazardous waste and use of toxic chemicals and resources.

5. State agencies that regulate activities in the state that generate significant quantities of hazardous waste or use significant quantities of resources and/or toxic chemicals, or

whose policies have important effects upon such activities, shall develop or revise policy statements indicating that pollution prevention is a priority. These agencies shall also integrate pollution prevention into their regulatory and policy activities as a primary means of meeting standards.

6. State agencies, subject to 4 and 5 above, shall prepare annual summary reports on their progress in preventing pollution with the reports to be completed by August 15 of each year. At a minimum, these reports shall include a description of steps taken to integrate pollution prevention into agency activities, a summary of plans for future activities to prevent pollution, and an estimate of environmental and economic benefits, when applicable, which have resulted from preventing pollution.

7. State agencies shall, in cooperation with the Department of Administration, encourage pollution prevention through their purchasing policies and specifications.

8. Information on progress of state agencies in preventing pollution shall be included in the Pollution Prevention Evaluation Report to the Legislature required by section 115D.10 of the Minnesota Toxic Pollution Prevention Act.

9. State agencies are encouraged to apply for the annual Governor's Award for Excellence in Pollution Prevention, as authorized by section 115D.06 of the Minnesota Toxic Pollution Prevention Act. A special award for excellence in pollution prevention shall be established for state agencies.

10. The Office of Environmental Assistance shall provide technical assistance to state agencies in the implementation of this Order.

This Order shall be reviewed by the Governor, in consultation with the affected agency or agencies, every two years in order to assess its reasonableness and need

Pursuant to Minnesota Statutes 1998, section 4.035, subd. 2, this Order shall be effective fifteen (15) days after publication in the State Register and filing with the Secretary of State and shall remain in effect until rescinded by proper authority or it expires in accordance with Minnesota Statutes 1998, section 4.035, subd. 3.

IN TESTIMONY WHEREOF, I have set my hand this second day of April, 1999.

JESSE VENTURA
Governor

Filed According to Law:

MARY KIFFMEYER
Secretary of State

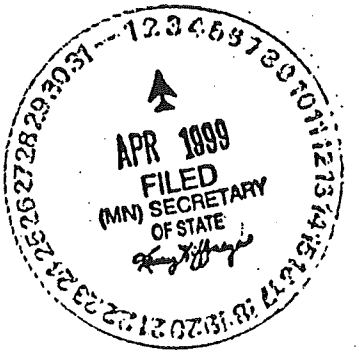

Table of Contents

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Agency Contacts

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Department of Agriculture
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Department of Corrections
1450 Energy Park Drive, St. Paul, MN 55108
Contact: Jim Weiler (651) 779-1449

Office of Environmental Assistance
520 Lafayette Road, St. Paul, MN 55155
Contact: Emily Moore (651) 215-0201

Department of Human Services
444 Lafayette Rd, St. Paul, Mn 55155
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Metropolitan Airports Commission
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Metropolitan Council – Environmental Services
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Metropolitan Council – Metro Transit
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Metropolitan Mosquito Control District
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Military Affairs
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Anoka-Hennepin Technical College
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Hennepin Technical College
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Contact: LuAnn Carlson (612) 425-3800 Ext 2570

North Hennepin Community College
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Contact: Bob Alexander (612) 424-0816

Ridgewater Community & Technical College
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Pollution Control Agency
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Contact: Paula O'Keefe (651) 297-8330

Department of Public Service (Commerce)
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Contact: Lois Mack (651) 296-8900

Department of Transportation (MnDOT)
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Contact: David Pehoski (651) 779-5113

University of Minnesota
501 23rd Ave. SE Minneapolis, MN 55455-0447
Contact: Gene Christenson (612) 626-1590

Board of Water & Soil Resources
200 One West Water Street, St. Paul, MN 55107
Contact: Marybeth Block (651) 297-7965

FY 1999 STATE GOVERNMENT CONSOLIDATED POLLUTION PREVENTION SUMMARY REPORT

Fulfilling the requirements of Governor's Executive Order 99-4 and Executive Order 91-17 Providing for the Implementation of Pollution Prevention by State Government

Introduction

This report is a consolidation of the summary reports submitted by participating State of Minnesota agencies in August 1999. Agency contacts are listed on the opposite page.

Part I contains a description of each agency, including the number of employees, locations of the agencies, and pollution prevention training held during the last year.

Part II contains the summary of each agency's efforts toward pollution prevention within specific category headings. It is designed to facilitate greater use of the document by participating agencies and by others seeking information about pollution prevention opportunities.

Part III contains a matrix of the agencies providing activity summaries under the different categories. It will allow the reader to identify all the categories in the report under which a particular agency has provided a summary of activities.

Part IV contains the signature of the Agency or department head. The original signed copies of the report from each agency are on file at the Office of Environmental Assistance. For more information, contact Emily Moore at the OEA at (651) 215-0201 or toll-free at (800) 657-3843.

The Appendices for the Consolidated Pollution Prevention Summary report contain the following:

- Appendix A contains a Map of the Minnesota National Guard Facilities
- Appendix B contains the Pollution Prevention Grants Awarded in Fiscal Year 1999
- Appendix C contains the Department of Administration's policy on environmental materials management, the department's priorities for environmental materials management, and the mission statement for the Plant Management division of the Department of Administration.
- Appendix D contains the Department of Corrections Policy Statement
- Appendix E contains the University of Minnesota Board of Regents policy on pollution prevention and waste abatement.

Part I
Agency Descriptions

The Following paragraphs include general information about the participating agencies, including size of staff, the number of locations, and the amount of pollution prevention training staff have had during fiscal year 1999.

Department of Administration -- The Department of Administration's mission is to improve the quality and productivity of Minnesota government. The department provides business management and administrative services for the executive branch of state government and uses a customer-oriented approach to serve the operational needs of state and local government agencies. This Pollution Prevention Report summarizes the activities of the 854 employees who operate from 18 locations. Pollution prevention guidance is available to state employees through the department's Resource Recovery Office. The divisions of Building Construction, Communications.Media, and Materials Management provided pollution prevention training to their employees in FISCAL YEAR 1999.

Department of Agriculture – The Department of Agriculture currently employs approximately 500 personnel. There are 26 different Department of Agriculture facilities located throughout the state. This report is primarily for the St. Paul office complex located at 90 West Plato Boulevard.

Department of Corrections -- Approximately 3,268 staff work at the Department of Corrections at 8 locations. This report is for the agency as a whole. Facilities reporting are Minnesota Correctional Facility (MCF)-Faribault (FRB), MCF-Oak Park Heights (OPH), MCF-Red Wing (RW), MCF-St. Cloud (SCL), Thistledew Camp (TC), and MCF-Willow River/Moose Lake (WR/ML). No staff at the Department of Corrections received pollution prevention training during the past year.

Office of Environmental Assistance -- The Office of Environmental Assistance (OEA) was established on July 1, 1994. OEA's predecessor agencies, the Office of Waste Management and the Waste Management Board, had been in existence since July 1, 1980. The OEA employs a staff of 72 people in the St. Paul office and one staff person in each of five regional offices in Duluth, Brainerd, Detroit Lakes, Marshall, and Rochester. OEA's mission is to protect Minnesota's environment and assure economic sustainability through waste prevention and resource conservation. The key goals of the OEA are to assist those responsible for the generation and management of waste to reduce the amount of waste generated and ensure waste is reused, recycled or managed appropriately according to the hierarchy of waste reduction, recycling, resource recovery, and landfilling. Additional goals are to help Minnesota's businesses improve their economic efficiency through environmentally sound practices; to promote environmentally sustainable attitudes and behaviors through education and information; and to promote sustainable, community-based solutions to environmental problems.

The OEA provides funding for the Minnesota Technical Assistance Program (MnTAP). MnTAP employs a staff of 16 within one location at the University of Minnesota. The experienced staff of engineers and other science-related professionals provides technical assistance tailored to businesses' needs, free of charge. Located at the University of Minnesota, MnTAP's non-regulatory status gives its clients the confidence to ask difficult questions regarding their waste management problems and pollution prevention opportunities. OEA and MnTAP staff have planned and participated in pollution prevention training events throughout the year. The OEA concentrates on pollution prevention policy and outreach. MnTAP focuses the vast majority of their efforts on technical assistance to other organizations and companies with a goal of preventing pollution. The activities described within the categories in Part II below include these external efforts in addition to internal efforts at each agency to prevent pollution.

Department of Human Services -- The Department of Human Services has 6,670 employees. The Department has eight Regional Treatment Centers, over 100 State Operated Community Services (SOCS) and Minnesota Extended Treatment Options (METO) sites and the Central Administrative Offices at eight St. Paul locations. This report will include pollution prevention efforts at all of the Regional Treatment Centers and the Central Administrative Office. The SOCS are operated as a household and comply with the solid waste and recycling requirements of their host community. Thirty-one maintenance workers and safety officers received their annual asbestos training that included proper handling and disposal of asbestos containing materials. Annual Lead Awareness training is offered at the Regional Treatment Centers. Several sites were involved in the annual "Pollution Prevention Week" activities.

Metropolitan Airports Commission -- The Minnesota Legislature created the Metropolitan Airports Commission (MAC) in 1943 as a public corporation and established as its mission to, "provide a system of airports that promotes regional, national and international transportation of passengers and cargo. This system shall be operated, consistent with the public interest and promote the overall goals of the state's environmental policies and minimize the public's exposure to noise and safety hazards around airports." 15 commissioners govern the MAC, 13 of which are appointed by the Governor of the State of Minnesota, and one each of which are appointed by the mayors of Minneapolis and St. Paul. The MAC currently owns and operates 6 reliever airports and the Minneapolis/St. Paul International Airport (MSP). While MSP handles commercial air traffic, the Reliever airport system handles the majority of "general aviation" activity. MSP is used by more than 30 million people and has 475,000 operations per year. The Reliever Airport system has more than 875,000 operations per year. The MAC presently has about 400 employees encompassing a wide variety of duties. The airport system has been equated to, "like running a little city". The departments can be basically split into three sections—Landside, Airside and Administration. Landside includes Ground Transportation, Airport Directors Office, Energy Management, and Facility Management. Airside consists of Operations, Carpentry, Communication, Electrical, Fire, Police, Maintenance (field and mechanical) and the Paint Shop. The Administration includes Airport Development, Environment, Commercial Management, Executive, Finance, Human Resources, Insurance/Risk, Labor Relations, Legal, IS, Public Relations, and Purchasing. This summary will constitute a report for the agency as a whole. The MAC is continually re-evaluating and updating all pollution prevention methods and practices through improved communications and training.

Metropolitan Council – Environmental Services -- The Metropolitan Council Environmental Services (MCES) is a division of the Metropolitan Council, the public agency which coordinates regional planning and guides development in Minnesota's seven-county metropolitan area. The MCES operates the regional wastewater collection and treatment system in most of that same seven-county Twin Cities metropolitan area. Additional regional environmental responsibilities include industrial wastewater pretreatment and management, air and water quality monitoring, regulatory compliance, environmental education, water resources planning, and nonpoint source pollution abatement.

MCES operates nine treatment plants in addition to three maintenance facilities, a field office, and administrative headquarters for a total of fourteen staffed facility locations. MCES is budgeted for approximately 740 staff (full-time equivalent positions). This report will describe pollution prevention activities for the entire MCES. A separate report will cover pollution prevention for 1999 for Metro Transit, the division of the Metropolitan Council that provides public transit, i.e. bus service and a planned light-rail system, for Minneapolis, St. Paul, and surrounding suburban areas including seventy-eight cities. MCES is an active member of the Interagency Pollution prevention Advisory Team (IPPAT). Michael Nevala, pollution prevention contact for MCES, has been a member of the Minnesota Office of Environmental Assistance's Prevention, Reduction, and Recycling Advisory Council since its beginning in 1997. In addition to this professional contact and resulting internal sharing of information, some informal pollution prevention training occurs at the treatment plants related to maintenance and all employees in the industrial waste section have been formally trained. Pollution Prevention Week was publicly observed in September 1998 with a breakfast, keynote speech, and awards presentations.

Metropolitan Council – Metro Transit -- Metro Transit is the major supplier for mass transit in the seven-county metropolitan area, operating 973 buses covering 109 routes. To accomplish this service, Metro Transit operates five service garages, one overhaul facility, one police station, and an office building with a total staff of 2,340 employees. During the past year, Metro Transit has increased its ridership by 5 percent and is upgrading its fleet with newer buses. This report will cover all of the buildings that are operated by Metro Transit. During the last year, no formal pollution prevention training was conducted by Metro Transit, but opportunities were given to staff to attend programs put on by other agencies pertaining to pollution prevention. Metro Transit is committed to excellence and leadership in protecting the environment. In keeping with its policy, our objectives are to reduce the amounts of hazardous waste that are generated at any of our facilities and to keep air emissions at a minimum. By successfully preventing pollution at its source, the agency will be able to increase its operational efficiencies and provide a safer and healthier environment for all of our employees and customers.

Metropolitan Mosquito Control District -- The Metropolitan Mosquito Control District, established in 1959, controls mosquitoes and gnats (black flies) in the metropolitan counties of Anoka, eastern Carver, Dakota, Hennepin, Ramsey, Scott and Washington. The District operates under the seventeen-member Metropolitan Mosquito Control Commission, composed of county Commissioners from the participating counties. A Director is responsible for the operation of the program and reports to the Commission. The District employs 47 full time staff and approximately 150 part-time staff during the mosquito and gnat-breeding season. The District currently operates a warehouse facility, six field operations facilities and a central administration building. Additionally, the District owns and operates a fleet of vehicles.

Department of Military Affairs -- The Department of Military Affairs is comprised of the Army National Guard and the Air National Guard. Units are located throughout the State of Minnesota in approximately 80 locations. The Department of Military Affairs has approximately 10,120 part-time and 2,165 full-time employees exercising both state and national missions. This report summarizes the on-going activities of the Department of Military Affairs throughout the state. Training occurs throughout the year on specific issues relating to the maintenance and management of DMA equipment and resources. A few of these issues contain pollution prevention elements. These are described in more detail under Education, Communications and Training.

Pollution Control Agency -- The Minnesota Pollution Control Agency (MPCA) has approximately 800 staff that are located in the Central office in St. Paul and 7 District offices in Duluth, Brainerd, Detroit Lakes, Mankato, Marshall, Rochester and Willmar. This report covers all activities of the Agency statewide. Some staff has received pollution prevention training, but most have not. With the assistance of many MPCA staff, this is a summary of our current internal pollution prevention and waste minimization activities for 1999.

Department of Public Service (Commerce) -- The Department employs 86 staff at the Metro Square location, and an additional 41 staff at the Roseville location. This report covers agency activities at both locations. Our staff have not received any pollution prevention training during this past year.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Anoka Hennepin Technical College employs about 200 Staff at three Locations. This report is for the entire College. No pollution prevention training has been received.

Hennepin Technical College -- Hennepin Technical College (HTC) has four work sites located at Eden Prairie, Brooklyn Park, Hopkins and Plymouth. Eden Prairie (south campus) and Brooklyn Park (north campus) are College Educational facilities with a variety of technical programs. The Hopkins facility is housed in rented space and provides "Customized Training" educational services. The Plymouth site is housed in rented space and is a business administrative facility. The total staff working at the HTC is approximately 500. This past year the newly hired Safety Officer has had refresher training on Hazardous Waste Management. This was a two-day training sponsored by the Minnesota Pollution Control Agency and the metropolitan counties in collaboration with the Minnesota Office of Environmental Assistance and Minnesota Technical Assistance Program. Every year several of the maintenance workers also attend annual training sessions on Pollution Control.

North Hennepin Community College -- North Hennepin Community College has approximately 330 staff working in three locations. This report is for the college as a whole. Pollution prevention training is required of Plant Services and certain para-professional staff and is voluntary on part of other staff.

Ridgewater Community and Technical College -- Ridgewater Community and Technical College has campuses in Willmar and Hutchinson. The college employs more than 750 full and part time faculty, staff and administrators. Three staff persons received pollution prevention training during the past year.

Southeast Technical College -- Minnesota State College-Southeast Technical has 111 employees, departments include instructional, support staff, clerical, maintenance, administration, student services, financial aid, placement, custom services, marketing, and outreach departments. Minnesota State College-Southeast Technical consists of three facilities referred to as Red Wing Campus, Winona Campus, and Winona Airport Campus. This report will cover the college as a whole. The college has not offered any formal training on pollution prevention; however, formal policies exist on recycling and hazardous waste management. Trade and Industrial faculty and maintenance personnel are provided annual training on hazardous waste management as a component of a comprehensive safety program.

Bemidji State University (BSU) -- BSU has approximately 570 faculty and staff during the academic year and 450 during the summer. Student employees number 850 during the academic year and 230 during the summer. There are two staffed facility locations, the BSU main campus and the Center for Research and Innovation. All BSU facilities are included in this report. No specific pollution prevention training was implemented. However, procedures and opportunities for participating in waste reduction and recycling activities, both on and off campus, are communicated through a faculty/staff computer information list, the campus newspaper, and information provided by the BSU Environmental Advisory Committee.

St. Cloud State University -- St. Cloud State University (SCSU) employs full- and part-time approximately 1500 administrative, teaching, clerical, and technical maintenance personnel. The campus consists of 42 buildings and is situated on over 100 acres. For purposes of this report, all campus locations will be included. Pollution prevention continues to be a factor in purchasing and implementation of new procedures. Members of the SCSU staff are receiving an increasing level of training in the area of pollution prevention. During the past year the services of an outside consulting firm, MacNeil Environmental Inc., have been expanded to better address this training and other issues.

Department of Transportation (MnDOT) -- Mn/DOT has approximately 4800 employees. In general, Mn/DOT is a de-centralized organization with one central office, seven districts and one metropolitan division. Mn/DOT has 16 major truck stations (A and B headquarters located in each district and the metropolitan division) with 135 additional truck stations. Mn/DOT has numerous remote salt sheds and gravel pits. Mn/DOT has 160+ EPA I.D. numbers and maintains approximately 12,800 miles of highway (28,837 lane miles) and 4,621 bridges. Mn/DOT maintains 11,000 pieces of equipment. Of the 11,000 pieces of equipment 5,500 have motors, and of the 5,500 pieces of equipment with motors 4,200 are on-road vehicles and 1,100 are off-road vehicles. This report is intended to represent Mn/DOT as a whole with respect to Mn/DOT's efforts in pollution prevention.

University of Minnesota -- The University of Minnesota employs 30,304 people, serving 51,835 students and 14,294 continuing education/extension students. The University of Minnesota has four major campuses: Crookston, Duluth, Morris, and Twin Cities (the Twin Cities Campus, which is counted as a single campus, includes both the Minneapolis and St. Paul Campuses) and operates the University Center Rochester in cooperation with MNSCU. The University has approximately 22 experiment or research stations, extension agents in approximately 80 out of the 87 counties in Minnesota, and the University has approximately 50 EPA Id numbers for hazardous waste generator sites around the State of Minnesota. This report is for agency as a whole. Approximately 2,500 staff & faculty received pollution prevention training during the year.

Board of Water & Soil Resources -- The Board of Water & Soil Resources (BWSR) mission is to assist local units of government to conserve and manage their irreplaceable water and soil resources. Approximately 70 staff are devoted to that mission. Half of the staff work out of the central office located in a private building at the southwest base of the Wabasha Street Bridge in St. Paul. The remaining staff works out of regional offices located in Brainerd, New Ulm and St. Paul, or out of offices located in Bemidji, Duluth, Marshall and Rochester. This report encompasses all of the BWSR offices.

Part II

Pollution Prevention Activities during the Fiscal Year

Part II contains information about the pollution prevention activities practiced by the participating agencies. The information is organized by category of material, listed alphabetically. All individual agency summary reports that address pollution prevention measures for a given material are listed in the same order as in Part I.

1. Absorbents

Department of Administration -- The Plant Management Division uses and recycles absorbents to clean up spills from oil and antifreeze.

Department of Corrections -- MCF-Faribault (FRB) has a contract with Safety Kleen that cost $500 in fiscal year 1999.
MCF-Oak Park Heights (OPH) – Rags are used to clean up spilled inks which are first scraped up and put into *wet scrap* for disposal with the institution's waste barrel. The industry office estimates that spills amount to less than one gallon all year.
MCF-Red Wing (RW) – Absorbents are used on a limited basis in the automotive shop. Used absorbents are burned at the City of Red Wing Incinerator.
MCF-St. Cloud (SCL) – Absorbents are on hand and ready for use. MCF started a rag-recycling program at an annual cost of $2,000. This keeps hazardous waste out of the landfill and eliminates oil and grease rags from trash dumpsters going to the Metro-Furnace.
Thistledew Camp (TC) – OSI picks up used absorbents.
MCF-Willow River/Moose Lake (WR/ML) – Absorbents are used in many areas of the facility to absorb hazardous materials. The facility is currently using a ground up corn cob and cellulose material versus clay. The corn cob and cellulose materials can be completely incinerated, unlike clay. There is no change expected in the area of absorbents.

Department of Human Services -- Absorbents are provided by vendors and picked up after use.

Metropolitan Airports Commission -- The MAC uses a variety of different absorbents. Wood chips and clay floor dry is used to absorb oil and grease. Corncob fractions are used to collect spilled jet fuel. Booms are used as a stopgap to prevent miscellaneous debris and other contaminants from reaching the river. The sorbents are saturated as much as possible before disposal. The spent material is then burned for energy recovery.

Metropolitan Council – Environmental Services -- With the change in state regulations on the disposal of used oil absorbents, MCES has switched from a clay-based inorganic product to Spill-Dri™, a material made from 100 percent reclaimed natural fiber cellulose. In many other applications, polypropylene pads are used as absorbents. The products that are absorbed are primarily hydraulic fluids, crankcase oils, and other lubricating oils. The larger facilities send the used absorbents via OSI Environmental, Inc. or Environmental Solutions, Inc. for fuel recovery or incineration. Two MCES facilities have industrial wringers that squeeze the oil from the synthetic pads, allowing their frequent reuse. Another facility has analyzed its used absorbent for Toxicity Characteristic Leaching Procedure (TCLP) heavy metals. Since none of the listed thresholds were exceeded, the absorbent is handled along with industrial codisposal waste, with the approval of the regulating county. For 1998, 1,008 gallons of used absorbents were sent for energy recovery.

Metropolitan Council – Metro Transit -- In 1996, Metro Transit switched from the use of clay-based absorbents to a cellulose type of absorbent. The change was made after reviewing the comprehensive studies and report done by the Minnesota Department of Transportation (MnDOT). An in-house comparison of absorbents validates the effectiveness of the selected absorbents. The change has eliminated over 8,000 pounds of clay from the waste stream and has diverted used absorbents to being sent for use as a fuel. Metro Transit is still evaluating other absorbents that are denser and therefore would not be as easily blown around.

Metropolitan Mosquito Control District -- The District currently uses a sawdust floor dry absorbent in addition to reusable absorbent pads and booms. The District is always looking for ways to improve materials handling and shop procedures to reduce the amount of floor absorbents used by MMCD personnel. Absorbents that contain hazardous materials are handled as a hazardous waste. Non hazardous absorbents are managed as part of the solid waste stream, which is, in most cases, incineration for heat recovery at an approved county facility. The District has found the cost of using alternative absorbents is higher than the cost of absorbents previously used. Some of this cost can be offset by reusing the absorbent pads and booms as much as possible before disposal and through improved materials handling to reduce the amount of absorbent needed.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Absorbents are recycled.

Hennepin Technical College -- HTC uses absorbents in the automotive program in the form of absorbent pads called "New Pig" to clean the floor. These pads are on hand and ready to use and can be disposed of safely in the trash, which is recycled. This helps keep hazardous waste materials out of the landfill. Other programs at the college where monitoring is being done on the use absorbents are Auto Mechanic, and Diesel Mechanics. Clay products are avoided.

North Hennepin Community College -- NHCC staff use Floor Dry for the vehicle shop. Used absorbents are swept up and stored in barrel. Absorbents are used for oil and disposed of through a contractor.

Ridgewater Community and Technical College -- Due to the variety of program offerings within the college, we use absorbents predominantly in our Auto Body, Auto Mechanics, and Agriculture shops. We do have a spill center with spill absorbents and other materials to contain hazardous chemical spills. These are disposed of through a hazardous waste contractor.

Southeast Technical College -- Absorbents are used in the Aviation technician, Industrial Maintenance technician, Auto Body technician, Auto Mechanics technician, Machine Tool & Die, and Truck Driving programs, as well as, the maintenance department. The absorbents that are used include pads, socks, and spill sorb. All products used are incinerated. No products containing clay are used any longer.

St. Cloud State University -- Absorbent pad and pans or other similar products and launderable rags are increasingly available and used. Absorbent materials to contain hazardous chemical spills near floor drains are being supplemented with drain covers and increased training and inspections.

Department of Transportation -- Mn/DOT has researched various alternatives to clay sorbent material. The purpose of the research was to identify as well as test the efficiency and effectiveness of sorbents that can be beneficially reused (burned for energy recovery) after saturated. Corncob, paper, wood, cork, pumice, polypropylene (reusable and launderable), peat, cellulose, polymer and clay sorbent have been tested in this research. *(A full report of Mn/DOT's sorbent research findings is available)*. Mn/DOT no longer landfills used oil sorbent material. The burnable sorbents are used as waste derived fuel for the generation of steam and electricity.

Mn/DOT has researched and implemented, on a small scale, the use of launderable rags. Mn/DOT has found that the single largest factor in reducing this waste stream is the reuse of rags, whether they are launderable or disposable. Due changes in sorbent technology, Mn/DOT is updating the original sorbent research report. Mn/DOT hosted a sorbent demonstration during which performance of various sorbents were evaluated.

Mn/DOT used clay sorbents exclusively up to 1995. In 1994, Mn/DOT purchased approximately 75,000 pounds of clay sorbent, which was landfilled. Currently, all Mn/DOT used oil sorbents, with the exception of launderable rags, are burned in a waste to energy facility (burned for energy recovery). Present and future environmental liability is significantly reduced as a result of this waste management change. *See "14. Energy – Production".* 2) Laundering is an easy; cost effective way to manage used oil rags. There is at minimum 27 cost savings to Mn/DOT by managing used oil rags by laundering. In addition, there is no storage, transportation or record keeping required of Mn/DOT.

University of Minnesota -- Vehicle fleet operations uses absorbent pads to clean up small routine spills, in place of and/or in combination with floor-dri. The pads are laundered and reused, resulting in a reduction of several (5 to 10) drums per year of floor-dri. The University disposes of approximately 20 drums of oil absorbents per year in a hazardous waste landfill. The University is currently evaluating managing absorbents by burning for energy recovery or recovering oil with recycling to hopefully save money and conserve resources. The University is using the MnDOT sorbent report for cost comparisons. Absorbed oils and fuels can be burned for energy recovery. Recycling by recovery of the oil and reuse of cleaned absorbent appears to be a great resource conservation mechanism.

2. Adhesives

Department of Administration -- The Division of State Building Construction specifies materials such as fiber-based fabrics, adhesives, carpeting, and upholstery that are void of toxins and formaldehyde.

Department of Corrections -- **MCF-OPH** – The industry programs use environmentally safe glues including a natural animal products glue.
MCF-RW – Contact cement is used in the wood shop. Waste products are collected and recycled.
Thistledew Camp (TC) – OSI picks up waste adhesive.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC specifies use of materials that are non-toxic and are void of butyl, formaldehyde and other toxins. Safe glues are used.

3. Air Quality, CFC's

Department of Administration -- The Plant Management Division plans to retrofit existing chillers with non-ozone depleting 134a refrigerant. Plant Management has installed a new chiller that serves the Capitol Complex with non-ozone depleting 134a refrigerant. The InterTechnologies Group requires vendors to comply with federal & State refrigerant recovery statutes for air conditioner refill or replacement.

Department of Corrections -- **MCF-FRB** staff did a chiller conversion from R500 to R134A at a cost of $38,000.
MCF-OPH – Refrigerant oil is recycled with OPH's waste oil and picked up on an as needed basis. A refrigerant reclaimer is used to reclaim freon. A certified staff person on applicable refrigeration and air conditioning units uses the reclaimer.

MCF-SCL – We eliminated excess Freon at a cost of $1,800. This limits the ozone depleting CFCs to the atmosphere.

Department of Human Services -- CFC's are contained or isolated before repair to equipment. Some facilities have their own collection equipment. Other facilities hire a contractor to remove CFCs during repair operations.

Metropolitan Airports Commission -- Maintenance performed on any system containing CFC's includes complete recovery and recycling of refrigerants. Appliances containing refrigerants are recycled through an approved facility.

Metropolitan Council – Environmental Services -- With the implementation of the federal Clean Air Act Amendments of 1990, all CFC's from vehicles and stationary units have been recovered for recycling since the 1992 effective date. MCES has six recovery/filter units and approximately twelve staff who are licensed CFC technicians. CFC-12, CFC-22, and--more recently--the acceptable HFC-134a are recovered, cleaned, and reused.

Metropolitan Council – Metro Transit -- In 1995, the Minnesota Pollution Control Agency (MPCA) required that Metro Transit apply for air discharge permits as mandated by the Clean Air Act Amendments. Subsequently, a complete stack inventory was conducted at all six garage facilities. In 1997, Metro Transit was issued permits for three of those locations. A review of the air emissions has shown that the permits were required at two of those garages because of the size of the dual fuel boilers that were installed. Because of this fact, no additional reductions can be made at those garages. The third permitted facility, the Overhaul Base, is regulated due to the air emissions from the boilers and the exhaust from the paint shop and paint spray booth. It is anticipated that when the calculations for air emissions are completed for 1999 that the permit limits for the Overhaul Base may be able to be reduced. Metro Transit has installed one absorption cooling system at its Overhaul Base. This unit has proven over the past four cooling seasons to be highly efficient for cooling and requires less maintenance than the DX air conditioning units currently on the market. We have had to make major repairs on two of the three units because the manufacturer did not have the checking of a seal included in the preventative maintenance schedule. This has been modified in our maintenance program and, therefore, future problems will be minimized. Metro Transit has included in its long-term capital planning projects the removal of all existing CFC cooling systems beginning in 2005.

Department of Public Service (Commerce) -- See Education, Communication and Training, Minnesota energy Code.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- CFC's are reclaimed during repairs.

Hennepin Technical College -- HTC has employed an energy maintenance computerized program with a built in cleaning schedule. Filters take out any mold, pollen, or dust.

North Hennepin Community College -- **Use** of refrigerants (Freon). No storage of refrigerants. R-2 used in chilling towers.

Ridgewater Community and Technical College -- Licensed contractors perform all work involving refrigerants.

Southeast Technical College -- Licensed contractors perform all work on physical plant equipment involving refrigerants. In our automotive technician and HVAC technician programs, students learn to work with refrigerants under direct supervision of the instructor following all regulatory guidelines using proper equipment and reclaimers.

St. Cloud State University -- SCSU continues to go beyond recycling freon. Construction was completed on a new Central Chiller Plant costing over $3 million. It has added capacity to existing systems and reduced CFC's by using R22 refrigerant. The University has been able to start the retirement process of an R12 chiller and R113 chiller.

Department of Transportation -- In 1993, Mn/DOT put in place a U.S. Environmental Protection Agency approved CFC technician certification program. All Mn/DOT mechanics have completed this eight-hour certification program and are certified technicians to handle CFC's. This insured avoidable releases of CFC's during vehicle maintenance. Also in 1993, Mn/DOT changed all vehicle purchasing specifications to include "environmental friendly" 134 refrigerant in all vehicle air conditioners. CFC's are being phased out of all Mn/DOT vehicle and building air conditioners.

University of Minnesota -- There is an on-going air permit review, in preparation for the modification of existing steam plants and campus emission sources. The University is remodeling two of its steam plants on the Twin Cites Campus and shutting down a third. This will result in a reduction of sulfur dioxide (SO2) emissions from approximately 600 tons per year (tpy) to approximately 110 to 250 tpy, nitrogen oxide (NOX) emissions from approximately 1,370 tpy to 280 to 310 tpy, and carbon monoxide (CO) emissions from approximately 280 tpy to 130 to 150 tpy. (Results vary depending on the ratio of fuel types used – gas, coal, and oil – in the modified plants. A minimum of 70 percent gas will be used for five to six years.) Facilities Management Energy Systems has created an Energy Efficiency Group with the mission to reduce the Twin Cites Campus energy consumption while maintaining or improving occupant comfort. Building energy use and occupant complaints are monitored and analyzed to find energy saving opportunities and to ensure successful modifications continue to pay off. Energy-saving projects are typically funded through internal loans paid back with the savings from the energy budget. The Energy Efficiency Group has developed "University Building Efficiency Recommended Guidelines" to assist building managers and Building Systems Automated Control operators to maintain building energy use at the lowest level consistent with occupancy scheduling and comfort. Their efforts have reduced steam use on the Minneapolis Campus central steam system by 20 percent. The University's Center for Diesel Research focuses on reduction of diesel exhaust emissions from mobile and stationary engines (http://www.me.umn.edu/centers/cdr/index.html). The Center's mission is to:

1. Develop new technology to reduce occupational and environmental exposure to internal combustion engine emissions;
2. Evaluate the application of emission control strategies in confined spaces, such as mines and densely populated areas;
3. Offer unique educational and research opportunities to students;
4. Provide high quality research and development services to customers such as engine and exhaust after-treatment manufacturers, the petroleum and alternative fuels industries, and users of internal combustion engines; and
5. Offer educational opportunities through outreach programs and short courses.

There is on going CFC and HCFC capture and reclamation for cooling units; as units are serviced, their CFC/HCFC are captured, then placed back in the unit after it is serviced. White goods are shipped to certified recyclers who recover CFC/HCFC prior to disposal. Annually the Twin Cites Campus recycles (recovers then places into other units) approximately 300 pounds of R22 and 50 pounds of R12. Thousands of pounds of University refrigerants have been recovered and put back into the original units by facilities personnel after servicing, or recovered by off-site contractors. There is no economic benefit, since natural gas prices have been higher than coal (per BTU generated) for the past year. It will be more costly for the University to operate at the higher natural gas-to-alternate- fuel ratios. The environmental benefit in outdoor air quality when the heating plants are modified is that there will be a reduction of approximately 1,560 to 1, 680 tpy of SO2, NOX, and CO emissions. Reduced energy usage requires less steam and electricity generation, which means less pollution emitted to the air. The environmental benefit of CFC reductions is a reduction in emissions of ozone depleting chemicals.

4. Antifreeze

Department of Administration -- The Travel Management Division collects and recycles antifreeze. The Plant Management Div. collects and recycles antifreeze and will maximize recovery by January 1, 2000.

Department of Corrections -- **MCF-FRB** has a contract with Safety Kleen. Since it takes years to fill a barrel, there was no cost this year.
MCF-Lino Lakes (LL) – Antifreeze is recycled internally or by an outside vendor. The plan for FY 2000 is to continue ongoing efforts to further reduce pollution as opportunities arise. The cost will vary.
MCF-OPH – All vehicles are taken to a local automotive shop for antifreeze testing and replacement when necessary.
MCF-RW – Antifreeze is used in the automotive shop. Material is stored until a waste drum is filled and then recycled.
MCF-SCL – Antifreeze is currently being disposed of in the local city sanitary sewer. Proper documentation is on file with city notification form. Cost = minimal Benefit – Proper chemical disposal at local municipality.
Thistledew Camp (TC) – OSI picks up used antifreeze.
MCF-WR/ML – Antifreeze has been collected at Moose Lake for four years. The antifreeze will be shipped with a vendor for recycling. The cost of this service is $75 for a 55-gallon drum.

Metropolitan Airports Commission -- MAC Maintenance staff continues to remove, recycle and reuse antifreeze from the automotive and maintenance fleet. This reduces the amount of antifreeze that must be sent out for disposal, reduces disposal costs, and allows the employees to use less new product.

Metropolitan Council – Environmental Services -- At the Metropolitan Wastewater Treatment Plant (Metro WWTP; St. Paul, Ramsey County), a decision has been made to purchase "long life" antifreeze/coolant which is changed at intervals of 150,000 miles. This will significantly reduce the volume, which is disposed of by sewering. A state law passed in 1998 allows facilities generating an average of less than 50 gallons per month of antifreeze/coolant to dispose of it to the sewer provided that the volume is tracked and it is not prohibited by the operator of the collection or treatment system. All MCES facilities fall into this category.

Metropolitan Council – Metro Transit -- In January 1997, Metro Transit instituted a formal policy on the handling of all used antifreeze/coolant. This calls for storing the used material in 55-gallon drums and then having it recycled.

Metropolitan Mosquito Control District -- MMCD uses private contractors for most major vehicle repairs including servicing of vehicle cooling systems. On rare occasions when staff collects antifreeze from a vehicle, it is recycled through the District's used-oil recycling vendor. As the District replaces older fleet vehicles with new vehicles, the purchase bids specify long-life antifreeze for all new fleet vehicles. This greatly reduces the volume of antifreeze generated by the District vehicles requiring disposal.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Antifreeze is recycled.

Hennepin Technical College -- HTC collects and recycles antifreeze, which is picked up by a licensed hazardous material contractor for recycling. Cooling coils are filled with antifreeze and drained at the end of the season. This is recaptured for the next year's use.

North Hennepin Community College -- Cooling coils are filled with antifreeze at the end of the cooling system. Antifreeze is recaptured for the next year's use.

Ridgewater Community and Technical College -- College vehicles are serviced off campus at a local automotive shop.

Southeast Technical College -- Antifreeze is used mainly in the Automotive technician program and is recycled. No antifreeze is sewered.

Bemidji State University (BSU) -- University vehicles are maintained through a contract with a local service station. The vendor reclaims the antifreeze. Future Activities: Approximately 120 gallons of antifreeze will be removed from an emergency power generator as part of preventative maintenance work. It will be collected and used in our campus air conditioning system. This will eliminate the expense of having the contractor remove and dispose of the antifreeze and reduce the amount of new product purchased for our AC system. The reused antifreeze will take the place of approximately $500 of new product. The reuse will also eliminate the contractor's charge of $450 for collecting and disposing of the antifreeze. There is no cost to the University. The environmental benefit is that the recovery will remove a small volume of biodegradable solvent waste and potentially some toxic chemical contaminants from the waste stream. Recovered material will reduce the amount of energy and resources used to manufacture virgin product. Few environmental costs are expected.

Department of Transportation -- Mn/DOT has researched, identified and implemented various recycling options for antifreeze. However, due to cost, most of Mn/DOT's antifreeze is disposed of in the sanitary sewer. Some antifreeze generated by Mn/DOT is recycled through a filtration technology located in Crookston. The recycled antifreeze is used in Mn/DOT vehicles.

During fiscal year 1999 Mn/DOT's in-house antifreeze recycling program has been moved form Morris to Crookston. This program is being evaluated to determine if Crookston will recycle more than District 2's antifreeze and therefore extending its recycling serve to other Mn/DOT districts, other state, and county and city municipalities. The approximate cost per 55 gallon drum of recycled 50/50 antifreeze from Mn/DOT's antifreeze recycling program in Crookston is about $70.00 (this does not include transportation costs to Crookston). In comparison, the cost for the same service performed by an outside vendor is around $104.00. New, antifreeze diluted to 50/50 is about $81.00. It costs more than $11.00 per 55 gallon to transport used antifreeze to Crookston. At this time, transportation costs makes disposal in the sanitary sewer more cost effective than recycling for most of Mn/DOT.

University of Minnesota -- The University is researching opportunities for antifreeze recycling. The University's Twin Cities Campus Facilities Management Department is researching the feasibility of using recycled antifreeze in building chiller units. There is a concern that the 50 percent ethylene glycol recovered through the distillation process is not concentrated enough for the large building chiller units, which contain a fair amount of water even after being drained, due to low points in the system. The Health Science complex has initiated an antifreeze-recycling pilot. 20 drums of antifreeze were cleaned and restored for reuse in the chiller systems.

An antifreeze recycling pilot project was initiated with 4 drums of antifreeze from a campus emergency generator. Metro Recovery Systems cleaned the old antifreeze and restored the composition to 60 percent glycol, 40 percent water. The recycled antifreeze will be used in the next emergency generator that is changed out (generators are on a 2 year antifreeze replacement schedule, Twin Cities Campus has over 100 generators). The University's Fleet Services Department, Twin Cities Campus, rarely removes automotive antifreeze. Instead they top off radiators with fresh antifreeze, then sell vehicles after 3 to 5 years. It is estimated that the Twin Cities Campus Facilities management Department could save enough money per year in avoided purchase costs to at least cover the cost of the recycling process if they recycle antifreeze from building chiller units and emergency generators. If the chiller unit antifreeze can be recycled, it would result in the reduction of approximately 825 to 1,650 gallons of 30 percent ethylene glycol being disposed to sewer and would reduce the same amount of virgin antifreeze purchased per year on the Twin Cities Campus.

Board of Water & Soil Resources -- All of the automotive maintenance is performed by the state's central motor pool for the cars assigned to the St. Paul offices, or by certified mechanics at privately-owned automotive centers for cars assigned to the regional and field offices. Ethanol fuel is purchased whenever possible.

5. Audits

.Department of Corrections -- **MCF-OPH** –The institution safety officer inspects monthly for a variety of fire, safety, and sanitation items which include an inspection of hazardous materials, inventory lists, and disposal procedures. Washington County representatives conduct an annual hazardous waste inspection.
MCF-SCL – Environmental audits are ongoing with MPCA, ACA, and OSHA requirements. The cost is $4,000 annually, and the benefit is pollution prevention, reduction, and helping to find problems at the facility.

Metropolitan Airports Commission -- The MAC is continuing to conduct environmental compliance inspections at the six Reliever Airports. These inspections will help identify possible environmental issues and will assist the tenants in achieving compliance or remain in compliance with existing regulations. They have also allowed the MAC to make our tenants aware of the environmental impacts their actions may have and to help them improve their waste generating practices. MAC staff is working to provide education/training and technical support of reliever tenants. This program was intended to be on going. Opportunities for pollution prevention are noted and incorporated in the CIP process as indicated by the MAC's strategic plan.

Metropolitan Council – Environmental Services -- Within the environmental audit program conducted by MCES staff, opportunities for pollution prevention are always noted and are included as recommendations in the audit findings. For example, the evaluation of chemical products for the presence of compounds that are categorically hazardous could result in choosing product alternatives that may not be characteristically hazardous. Recommendations also have been made for materials management in order to avoid spills. The internal audit program was developed and one full round of audits was conducted for all environmental media at all MCES facilities, ending a six-year cycle in early 1999.

Metropolitan Mosquito Control District -- The District conducts annual internal audits for hazardous waste procedures at each of our 7 facilities. The audits include review of hazardous materials storage procedures, materials handling, record keeping, transfer and labeling of waste materials & recycling/ disposal procedures. Each facility receives a score based on the findings of the audit team inspection. Facilities that receive a low score are given specifics regarding areas that need improvement and are re-inspected in 90 days. County and/or local authorities conduct annual hazardous waste inspections at all District facilities. Recently Hennepin County representatives reclassified the District's Maple Grove facility from a very small quantity generator (VSQG) to an ultra low quantity generator (ULQG).

Department of Military Affairs -- A draft pollution prevention plan was produced for Camp Ripley by Science Applications International Corporation (SAIC), under contract with the National Guard Bureau. In addition, pollution prevention opportunity assessments were prepared for the Camp Ripley Training Site and the Regional Training Site - Maintenance (RTS-M) facility. These documents provide a generalized format from which more detailed pollution prevention work can be conducted

The Department of Military Affairs recently completed a review of their air permit with a consultant. As a result, they have changed a number of processes to capture contaminants before they leave the building.. They are in the process of evaluating every product and every process at every one of the 74 locations in Minnesota to determine whether they are reporting all releases and whether they have material sufficient to provide spill plans. They are looking at all traps, estimating how often they should be cleaned and tested. Later, they will look at the economics of the products and processes they are using.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Building site inspections are being conducted, including inventory of any hazardous waste products. The plan is to set up and implement a policy and procedure to implement this in fiscal year 2000. These audits include the following: fire, safety and sanitation, hazardous materials inventory including MSDS. Disposal procedures are also included in the audits. The benefits of the audits are pollution prevention and reduction in the use of hazardous materials. The HTC has gone from a very large generator to a small generator in the past few years. HTC's planned activities for the next fiscal year in regards to Pollution Control are to update audits on hazardous materials and MSDS's and to establish ongoing environmental programs at all sites to help make the workplace and the environment healthier. The costs are being compiled from the various improvements being made and the ones that are planned. The benefits of the Pollution Control Program will also be identified. A safety practice used when renovation or work is being done in a building is to isolate the work area and seal it off to control dust exposure. Workers use appropriate personal protective equipment (PPE) and are trained in the "Right To Know" and the use and care of PPE.

Southeast Technical College -- No formal audits have taken place for pollution prevention except for audits mandated by the MPCA, OSHA, and other regulatory agencies.

Bemidji State University (BSU) -- Information gathered from 1995-1997, through an OEA sponsored grant to conduct waste/pollution audits on campus continues to be used to implement waste and pollution reduction policies and practices on campus. During fiscal year 1999 the campus use of recycled-content copy paper and double sided copying and printing activities were reviewed. Recycled-content paper was not in use. A recommendation to do so was accepted by the administration. Copy paper with 30-percent recycled content is now purchased for use in all copy machines. Double-sided copying is practiced in most offices. Notices encouraging double-sided copying and explaining the benefits were posted near campus copy machines. The audit information will continue to be used to guide development and implementation of waste and pollution reduction policies and practices. Additional areas of the campus will be audited pending funding and staffing. The recommendations resulting from the audits are expected to reduce the University's operational expenses. The recycled content paper costs approximately $1600/year more than the paper previously used. Implementation of the recommendations based on the audits' findings is expected to generally reduce waste and pollution generation.

St. Cloud State University -- MacNeil Environmental Inc. has performed some environmental audit functions as part of their Environmental Health and Safety (EHS) contract. These relate to elements of hazardous waste disposal, storage tanks, and the OSHA laboratory standards, which encompass pollution prevention. The SCSU Chemical Hygiene Officer is becoming instrumental in hazardous waste prevention planning and removal implementation. SCSU also had a Minnesota State Colleges and Universities (MnSCU) facilities condition survey last year. Survey environmental recommendations include specific purchases and capital/repair projects to effect HVAC and electrical system revisions and both energy and water conservation measures. We are continuing to benefit from their insights.

Department of Transportation -- Mn/DOT conducts approximately 80+ internal waste stream audits annually of Mn/DOT facilities. The purposes of these audits are to evaluate Mn/DOT's hazardous and problem waste stream management methods throughout the Department and identify various pollution prevention opportunities that warrant further research. In addition, the audits evaluate potential areas of noncompliance with state and federal hazardous and solid wastes, tanks, and water quality laws and rules and recommend actions to correct and/or avoid potential areas of noncompliance and maintain an effective waste management program. Mn/DOT conducts approximately 25 external environmental audits of facilities that handle Mn/DOT wastes. The purpose of these audits is to evaluate potential and existing waste handling, storage, recycling and disposal sites. The evaluation is based on a facility's waste management procedures, pollution prevention practices, compliance records, site geology and financial strength. The audit helps determine if the amount of environmental risk and liability associated with using a particular site is acceptable to Mn/DOT.

Both Mn/DOT's internal waste stream and external environmental audit programs have costs associated with them. However, based on Mn/DOT's experience, the cost for the program is minimal compared to the cost associated with potential Minnesota Pollution Control Agency enforcement actions and potential environmental liability (superfund). Both Mn/DOT's internal waste stream and external environmental audit programs offer environmental benefits in that they ensure that Mn/DOT waste is being managed in an environmentally sound manner.

University of Minnesota -- The University Department of Audits checks departments to see if they have in place hazardous waste compliance protocols (which includes pollution prevention) and OSHA laboratory standard protocols. The Department of Environmental health and Safely (DEHS) does targeted audits of large and/or noncompliance departments. All departments are directed to accomplish waste minimization and pollution prevention, using a self-audit.

The training and audit form is currently available on the web through the DEHS homepage (http://www.dehs.umn.edu/guidebook/guidebook7.html#wastemin) and in the hazardous chemical waste guidebook. The University's Waste Abatement Committee's web page is working towards pollution prevention and resource conservation by promoting self-audits and other techniques.

6. Automotive Fuels

Department of Administration -- The Travel Management Division uses ethanol 85 fuel as an alternative energy source with reduced emissions. The Materials Management Division established the State Patrol's contract to refurbish and reuse the State Patrol's 1995 Chevrolet Caprice police automobiles. The Patrol refurbished 137 police vehicles at an approximate value of $1,800,000; political subdivisions refurbished 27 vehicles at an approximate value of $365,000. The estimated savings, in lieu of purchasing a new police vehicle at $20,334, averaged $7,700 each, for a State Patrol total of $1,055,000 and $208,000 for political subdivisions. The Refurbishing State Patrol Vehicles Project was awarded a 1999 Partnership Minnesota Cooperative Certificate of Commendation for Government and Environment.

Department of Corrections -- **MCF-OPH** – Gas for the institution vehicles and diesel fuel for the industry truck are purchased at a local station. The diesel fuel used by the groundskeepers is stored on site in an above ground tank on a pad.
MCF-RW – Fueling of state vehicles is done at the facility. The facility has a 1,000-gallon aboveground, concrete tank with spill containment and leak detection.
MCF-SCL – 95 percent of the filling is done at a public station. Only plant operation vehicles are fueled on site at a cost of $5 more per gallon of fuel. The benefit is that it limits the chances of fuel spills and explosions, and the need for tank maintenance.
MCF-WR/ML - Fueling of vehicles at the facility is done at Willow River and Moose Lake for security and economic benefits. The Moose Lake fueling station has a catch basin for over filling during the filling of the main tank or the fueling of a vehicle. Each has a new above ground storage tank, which was a requirement of the MPCA.

Metropolitan Airports Commission -- MAC is continuously reviewing alternative fuels that can be used in our automotive fleet.

Metropolitan Mosquito Control District -- The majority of automotive fuels used by the District are purchased through normal retail outlets. MMCD does own and operate underground fuel tanks at the Bunker Hills and Jordan facilities. The tanks have leak containment and are electronically monitored 24 hours a day. The District specifies gasoline-containing ethanol for use in District vehicles.

Department of Public Service (Commerce) -- An important step in preventing pollution on an agency level is our policy to use alternative transportation fuels whenever it is available. The office in St. Paul has two light-duty vehicles; both are flex-fuel Ford Tauruses (a type of vehicle capable of blending high concentrated ethanol and gasoline in one tank). E85 is an alternative transportation fuel comprised of 85 percent ethanol and 15 percent gasoline.

Although it's more difficult to find vehicles for the Weights and Measures division because of the type of vehicles needed, they have purchased 2 flex-fuel Tauruses and are testing a S10 flex-fuel pickup for General Motors Corporation. They also are planning to purchase three flex-fuel pickups the next time they replace trucks. The Department has been involved in promoting alternative fuels, such as compressed natural gas (CNG), liquefied petroleum gas (LPG), biodiesel and high concentration ethanol (E85 or 85 percent ethanol/15 percent gasoline). All these fuels emit lower levels of carbon monoxide and thereby reduce a major source of urban air pollution. Biodiesel and ethanol are renewable fuels made primarily from homegrown crops rather than imported fossil fuels.

The activities undertaken by DPS this year include a new initiative to rapidly increase the number of E85 fueling sites in the metro area. Currently, there are 10 E85 fueling sites statewide; our goal is to add 30 new sites by the end of the year, by providing grants to fueling site owners to help defray the construction costs. This new initiative is being funded by a public/private partnership, including DPS, Minnesota Department of Agriculture, Minnesota Corn Growers, American Lung Assn., National Ethanol Vehicle Coalition, DOE and Ford Motor Company. We are just completing a demonstration project with the University of Minnesota, Center for Diesel Research using 100 percent biodiesel, and we are about to begin demonstrating a 20 percent biodiesel concentration blended with 80 percent diesel in school buses. We also produce educational materials to promote alternative fuels. These brochures are produced on recycled paper.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Gas and diesel fuel is purchased at the local station. Fuel is stored on site in two underground tanks. An additional aboveground tank is used to store diesel fuel for the Landscape Instructional Program. Fuel is filtered and the waste is recycled. These tanks are monitored closely. The maintenance crew, grounds keepers, landscape training unit, and auto-mechanics training unit all use fuel for college vehicles. When vehicles are purchased, fuel economy is a factor in the selection.

North Hennepin Community College -- NHCC removed an underground gasoline tank and pump in July of 1998 and disposed of it according to IAW State laws, at a cost of $1,200. Small quantities of fuels are left on site for daily operations, stored in certified containers.

Ridgewater Community and Technical College -- Automotive fuel for the RCTC fleet vehicles is purchased at local stations. We encourage employees to purchase gasoline that contains ethanol.

Southeast Technical College -- Automotive fuels are used for college vehicles and by maintenance, Auto Mechanics, Trucking Driving, and Aviation Mechanic technician departments. Minimum amounts of fuel are stored on site in approved containers. When vehicles are purchased, fuel economy is a factor in selection. Our truck driving program stores trucks in a heated garage during the winter months to reduce warm-up time to improve fuel efficiencies. The college also has installed a state-of-the-art driving simulator in the Truck Driving lab, reducing student time spent in the trucks learning the basics. The savings on fuel and maintenance on the trucks will cover the cost of the simulator.

Bemidji State University (BSU) -- In fiscal year 1999 campus maintenance personnel purchased an electric-powered vehicle for use. Functionality as well as operation and maintenance costs will be monitored. The results will be used to decide if more vehicles of this type will be purchased to replace the gasoline-fueled vans currently used on campus. In the future more electric vehicles may be considered. The electric vehicle was approximately $7300 less to purchase than a van. Fuel costs will be reduced by approximately $220/year. The electric vehicle purchase price was approximately $8200. Operation and maintenance costs are not yet available. The use of the electric vehicle will eliminate the pollution associated with operating a gasoline-fueled vehicle.

St. Cloud State University -- SCSU has four alternative fuel (ethanol E-85) autos in their motor pool, which produce less carbon monoxide.

Department of Transportation -- Mn/DOT's heavy equipment are being purchased with computer controlled electronic ignitions which maximizes the vehicles fuel efficiently. Mn/DOT is purchasing lightweight aluminum wheels for its trucks for fuel economy.

University of Minnesota -- The Department of Fleet Services, Twin Cities Campus, is researching the use of alternative fuel vehicles. The Power and Propulsion Division, Department of Mechanical Engineering, Twin Cities Campus, tests engine efficiency and emissions of gasoline and diesel powered engines and offers technical assistance for a fee to agencies or companies researching performance of automotive and diesel engines (http://www.me.umn.edu/divisions/#PnP). The center is a good resource of information on test procedures and simple maintenance that can reduce diesel emissions from buses and trucks. The center was consulted prior to the University's renewing its contract for bus services on the Twin Cities Campus.)
The Department of Parking and Transportation Services, received the 1997 Minnesota Government Reaching Environmental Achievements Together (MN GREAT) pollution prevention award for their ongoing efforts to reduce automobile wait times in parking lots through modifying software controlling access into and out of parking lots. The gate controllers annually reduce gasoline use by about 2,000 pounds and prevent approximately 7,000 pounds of carbon dioxide emissions.
The Department of Parking and Transportation Services, Twin Cities Campus, specified in their contract with Medicine Lake Bus Lines, that all buses used on the campus meet EPA limits. Normally Medicine Lake Lines would not need to comply with these strict limits, because they fall into a less regulated category of school buses. The contract also specifies financial penalties, such as $50 a day for every incident of a bus having visible exhaust emissions. The environmental benefits are reduced air emissions from automobile and bus exhausts and reduced fuel consumption.

Board of Water & Soil Resources -- All of the automotive maintenance is performed by the state's central motor pool for the cars assigned to the St. Paul offices, or by certified mechanics at privately-owned automotive centers for cars assigned to the regional and field offices. Ethanol fuel is purchased whenever possible.

7. Automotive Maintenance

Department of Administration – The Travel Management Division recovers and recycles automotive refrigerants for air conditioning units. The Travel Management and Plant Management divisions' preventive maintenance program are designed to minimize excessive and/or premature replacement of parts.

Department of Corrections -- **MCF-OPH** – Vehicles are taken to Rick's 36 or the central motor pool, depending on ownership.
MCF-SCL – Is done at automotive dealership – not on site. Cost = $3,500
Benefit – Limit chances of oil spills, fuel, and oil reduce security risks
MCF-STW – MINNCOR – Much of our vehicle maintenance is now done by outside vendors that are set up to handle all the appropriate recycling. This is more expensive for the maintenance, but reduces the hazardous waste that we have to handle.
Thistledew Camp (TC) – We do our own maintenance

Metropolitan Airports Commission -- MAC uses an approved facility to recycle parts washer solvents, used oil, used oil filters. Scrap metal and antifreeze are also recycled at the Maintenance Shop. Refrigerant from air conditioning systems is recovered and recycled.

Metropolitan Council – Environmental Services -- For specific information on pollution prevention at MCES in automotive maintenance activities, see the sections on absorbents, antifreeze, batteries, oil/oil filters, parts cleaning, and tires.

Metropolitan Mosquito Control District -- All major automotive maintenance and repair is done through vehicle dealerships by way of special agreements. Only minor vehicle maintenance and repair is preformed at District facilities. This would include oil changes, spark plug changes and replacing engine belts.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Automotive maintenance is done by venders and occasionally the students in the automotive maintenance program. Junker cars, batteries, and tires are disposed of by a vender and recycled. The HTC has used the Goose Lake Auto Salvage Company for this purpose. Replacement break pads are non-asbestos. Antifreeze is recycled. The parts-washer program incorporates a water-based solvent product from "Bioforce" which contains no hazardous materials and is qualified as used oil for disposal.

North Hennepin Community College -- NHCC performs maintenance on College-owned grounds equipment and College-owned vehicles.

Ridgewater Community and Technical College -- Automotive maintenance is done off campus at local dealers and at the central motor pool.

Southeast Technical College -- Automotive maintenance is performed in the Auto Mechanics technician, maintenance, and Truck Driving departments. All oil and oil filters are recycled.

St. Cloud State University -- The vehicle repair shop has revamped procedures for brake pad/shoe replacement to ensure asbestos fiber release control. Replacement pads are non-asbestos. The shop also has switched to a water based parts washer that generates only a small amount of sludge to be disposed of as hazardous waste.

Department of Transportation -- Mn/DOT has studied various brake cleaners. The purpose of this study is to identify brake cleaners containing chemicals that are harmful to the environment (including human health) and those chemicals that are low risk to the environment (including human health). They will measure the performance of brake cleaners containing chemicals that are low risk to the environment (including human health).

University of Minnesota -- The Department of Fleet Services, Twin Cities Campus, uses the recycling services of Safety Kleen for their parts washer solvents. Oil and gas filters are crushed, the oil recycled, and the metal scrap recycled. Automotive lead acid batteries and air conditioning refrigerants are also collected and recycled. Underg4round storage tanks for fuels have either been removed or upgraded to meet MPCA and EPA requirements, which will prevent contamination from leaking tanks. The environmental benefit is resource conservation and protection of groundwater.

Board of Water & Soil Resources -- All of the automotive maintenance is performed by the state's central motor pool for the cars assigned to the St. Paul offices, or by certified mechanics at privately-owned automotive centers for cars assigned to the regional and field offices. Ethanol fuel is purchased whenever possible.

8. Batteries

Department of Administration -- The contract for automotive batteries has provisions for all state agencies to recycle batteries. The Travel Management Division recycles automotive batteries. The Plant Management Division returns batteries from vehicles and janitorial equipment to vendors for recycling.

Department of Corrections -- **MCF-FRB (MINNCOR)** – We have discontinued the use of cordless drills in the industry woodshop and changed over to electric. We will continue to change them out until all cordless drills are off the shop floor. The cost is the purchase cost of new drills, and annual savings will be $100 in disposal and in purchasing new batteries at $1,500/year.
MCF-LL – Batteries are recycled internally or by outside vendor. Ongoing efforts are made to further reduce pollution as opportunities arise. The cost varies.
MCF-OPH – The type of alkaline batteries purchased by the institution can be disposed of in the trash. The lead acid and ni-cad batteries are saved and recycled as quantities dictate. Institution staff took 84 pounds of lead-acid batteries to Gopher State Resources for recycling. A box of recyclable rechargeable batteries was returned to the supplier in accordance with the state's contract in the past year.
MCF-RW – All batteries are recycled at the Goodhue County Recycling Center.
MCF-SCL – We collect and recycle all our batteries at an annual cost of $100.
MCF-STW – MINNCOR – Used batteries are returned to the vendor for recycling when new batteries are purchased.
Thistledew Camp (TC) – We turn in old batteries when we purchase new ones.
MCF-WR/ML – All lead/acid batteries are picked up by an individual to be hauled to a recycler in the twin cities. Alkaline batteries are being placed in the trash and ni-cad batteries are collected or sent back to the manufacturer for recycling. The facility is looking at the use of rechargeable flashlights to cut the costs of purchasing alkaline and the cost of disposal.
Office of Environmental Assistance -- The OEA has purchased alkaline rechargeable batteries for the last year and a half and has been pleased with their performance. All rechargeable batteries are recharged as many times as possible and then collected for management by the Department of Administration's resource recovery program.

Department of Human Services -- Batteries are collected for recycling or returned to the vendor. Rechargeable batteries are returned to Central Stores and disposed by the contract vendor.

Metropolitan Airports Commission -- MAC batteries are recycled. All NiCad and alkaline batteries are collected from the various sites and recycled at approved facilities.

Metropolitan Council – Environmental Services -- Spent Lead Acid Batteries (SLAB) are collected as a special hazardous waste and sent to battery recyclers. For most over-the-road vehicles, used SLABs are exchanged for new ones at the time of service. The used batteries that do accumulate and are stored for recycling are from heavy equipment, electric carts, and standby emergency electric power diesel-fueled generators. Over 19,639 pounds of SLABs were recycled from MCES facilities in 1998 mostly through AA Battery in Minneapolis. This increase was almost 2 ½ times the normal annual average. A change in preventative maintenance procedures brought about by reduced staffing was the cause of so many older batteries having shortened useful lives. Dry cell batteries that are currently standard issue contain less than 0.0025 percent mercury and therefore are not characterized as hazardous waste. The Metro WWTP warehouse normally dispenses over 3,000 pounds of AAA, AA, C, D, and 9V alkaline batteries in a year, which now can be handled as regular solid waste. Nickel-cadmium batteries, which are no longer capable of being recharged, are accumulated for recycling through Recyclights in Bloomington. Dry-cell batteries, which are older than the manufacturers' mercury restriction or cannot be documented to be low mercury still turn up and are stored until they can be disposed of as hazardous waste.

Metropolitan Council – Metro Transit -- Metro Transit continues to recycle all of its spent lead acid batteries (SLABs) and dry cell batteries. This procedure has been in place since the 1960s.

Metropolitan Mosquito Control District -- Spent lead acid batteries are recycled through the District's battery vendor. As new batteries are purchased old batteries are exchanged with the battery supplier for recycling. During the last fiscal year the District exchanged 83 truck batteries or 3,700 lbs. of lead-acid batteries. Batteries are stored at District facilities in acid proof, leak proof tubs until they are transported to the vendor for recycling. Dry cell batteries are collected at each District facility and recycled through local recycling programs. MMCD recycled 229 lbs. of dry cell batteries in 1999.

Pollution Control Agency -- The Waste Reduction and Recycling Committee (WRRC) revised its dry-cell battery collection program in May 1999 by placing collection boxes on each floor, in sub-district offices and at the field operation center. A laminated fact sheet illustrating the types of batteries that can be recycled or disposed of in the trash was posted at each site. In June 1999, Waste Management of Blaine picked up the first shipment, including the following battery types: mercury oxide, lead acid, lithium, nickel-cadmium, and alkaline.

Department of Public Service (Commerce) -- The Weights and Measures Division continues to work with the Pollution Control Agency, posting information to direct motor oil purchasers to recycling stations and to inform automotive battery purchasers that they must recycle old lead-acid batteries. This activity helps increase the collection of these materials and reduces the chance that they will become hazardous wastes through improper disposal.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Batteries are recycled.

Hennepin Technical College -- All batteries, both large and small, are saved and deposited through a recycling facility. This will continue in fiscal year 2000 and beyond. Small batteries purchased are the mercury free types. When ever possible, rechargeable batteries are used for various functions by the departments.

North Hennepin Community College -- All batteries are recycled.

Ridgewater Community and Technical College -- Batteries are saved and deposited through a recycling facility. Batteries that are hazard waste are recycled through the University of Minnesota. Vehicle batteries are recycled through whichever firm the new battery is purchased

Southeast Technical College -- When the college purchases new batteries for vehicles, old batteries are exchanged at time of purchase. Any other lead-acid type batteries are taken to a recycling center. Small batteries purchased are the mercury-free type.

Bemidji State University (BSU) -- Nickel-Cadmium and Lead-Acid batteries are recycled. Mercuric oxide, silver oxide and large lithium batteries are disposed of as hazardous waste. Recycling batteries reduces our disposal cost by approximately five cents for each pound of batteries removed from the waste stream. The environmental benefit is the reduction of toxic metals. Environmental costs are unknown, but we assume that the recycling process would require the consumption of some energy and other resources.

Department of Transportation -- Mn/DOT recycles all dry and wet cell batteries at approved battery recyclers or smelters.

University of Minnesota -- The Department of Environmental Health and Safety collects and hand sorts batteries from all campuses. Batteries are managed for recycling/reclamation where possible. Lead-acid batteries from various University operations are recycled. Rechargeable battery systems are used for various functions by departments.

9. Cleaning Supplies

Department of Administration -- The Materials Management Division, with assistance from other state agency staff, developed specifications for environmentally safe products that have been incorporated into a cleaning supply contract. This contract helps safeguard the health of custodial workers, building occupants and the environment. All products were scored for environmental attributes based on criteria established by the Office of Environmental Assistance. The cleaning supply contract was awarded a 1998 Partnership Minnesota Cooperative Certificate Commendation for Government and Environment. The Plant Management Division uses janitorial products that are appropriate to discard in sewers.

The Plant Management Division uses chemicals packaged as concentrates to reduce packaging waste by 85 percent. The Plant Management Division uses automatic dispensing systems to ensure correct dilutions from concentrates and minimize waste.

Department of Corrections -- **MCF-OPH** – Last year OPH switched to MINNCOR products, which are non-polluting and environmentally safe. The concentrated cleaning products are individually packaged in a portion-controlled envelope that ensures a 1:1 ratio of pack to water for cleaning purposes. The products mix with cold water. Portion Pac containers reduce solid waste. Portion Pacs are biodegradable and have a health hazard rating of two, even in the most concentrated form.
MCF-SCL – SCL is using environmentally friendly products at a minimal cost. The benefit is low sanitary sewer system costs.
MCF-STW – MINNCOR – We try to use only environmentally safe products.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- A low pH cleaner is used.

Hennepin Technical College -- HTC purchases and uses environmentally safe products that have been incorporated into the cleaning supplies vender contract. Products are sampled and tried out before large purchases, and the MSDS's are checked to see if they are safe. Products are evaluated for toxicity, flammability and reactivity. Whenever possible, less hazardous materials are substituted for ones that are harmful. This practice safeguards the health and safety of all the custodial workers, building occupants and the environment. Vender uses by HTC are St. Cloud Restaurant and Supplies, Green Tree, and Sunburst. "Muscle", a products used for cleaning, has been found to be an excellent and safe product. It is especially good for cleaning stainless steel and for doing carpet spot cleaning. There is now an effort being made to eliminate the buying of products that contain butyl or formaldehyde. The goal is to use only plant based or other environmentally safe products.

North Hennepin Community College -- Cleaning supplies are environment-friendly. MSDS sheets are maintained in each custodial closet, and safety procedures are adhered to when products are dispersed and used.

Ridgewater Community and Technical College -- We try to purchase cleaning supplies that are environment friendly. Our employee's are all trained in the AWAIR (a work place accident and reduction) program and Right-to-Know program on the correct way to use each chemical. We have a label program and have labels made for all our products. MSDS sheets are maintained in each custodial area and there is a master set kept in the maintenance department.

Southeast Technical College -- Cleaning supplies whenever possible are purchased from existing state purchasing contracts, which has resulted in safer products being used.

Department of Transportation -- Cleaning supplies are being purchased with automatic system for mixing and dispensing of concentrate. By using automatic mixing and dispensing systems Mn/DOT has experienced less cleaning chemical waste and less packaging waste.

University of Minnesota -- Facilities Management (FM), Twin Cities Campus, initiated a program to centralize purchasing of custodial supplies in an attempt to reduce the number of different custodial products used by their employees. The goal was to optimize supply management and to enhance worker safety and environmental friendliness through a product selection process. FM custodial services cleaned out and disposed of old, unused custodial products from 900 custodial closets in the 250 buildings on campus. FM formed a committee of custodial workers and supervisors to classify and evaluate the 600 products that were being used. They found that 16 different types of floor striper were being used on campus. With the help of peer input, the committee selected 150 custodial products that clean properly, minimize employee exposure to hazardous chemicals, and protect the environment by minimizing harmful discharges to sewer and air.

If a new custodial product is suggested for use a FM, it must go through a safety check, an MSDS check, a vendor demonstration, and trial use by a test group before it is approved. If a new product is added to the list of accepted products, then at least one product serving the same function must be removed from the list. Centralized purchasing of a more select list of custodial products leads to the cost efficiency of larger purchases. The custodial product selection process is designed to minimize air and water pollution and improve worker health and safety.

10. Commuting and Transportation

Department of Corrections -- **MCF-OPH** – A system of video conferencing was instituted some years ago for medical purposes and has evolved to facilitate meetings involving employees from various state institutions. The institutional safety officers, for example, meet via teleconference every other meeting. Hearing officers have used the teleconferencing system extensively to eliminate trips to various institutions for discipline hearings. Video conferencing is a definite plus in the winter in terms of road safety, drive time, and potential weather hazards.
Thistledew Camp (TC) – We encourage staff to ride together when on trips

Office of Environmental Assistance -- The OEA is continuing to test telecommuting for a few staff. These staff members work out of their homes one or two days per week. The result is fuel conservation and reduced emissions from vehicles. Regional OEA staff have frequent phone conferences with central office staff, thereby cutting down on travel. The OEA, along with the PCA, started the Metropass program at the Lafayette Road building in March. Under the terms of this program, employees are eligible to purchase an annual transit pass for an agency-subsidized rate of $60 for the entire year. Employees may use the passes for commuting to and from the workplace, for business travel during the workday and for personal travel at all other times when buses are running. The program raised the OEA bus ridership from 5 percent to 16.6 percent.

Department of Human Services -- The Department of Human Services continues its telecommuting policy. Staff, who have job duties conducive to home office application, have been identified and will be tele-commuting at least one day a week. The pollution prevention from the elimination of the daily commute is substantial. The Department of Human Services' inter-active satellite link to Regional Treatment Centers and other metropolitan and non-metropolitan Minnesota agencies continues to grow and be a success. The ability to tele-conference using this satellite technology has allowed staff to reach a larger audience while reducing travel time, vehicle use and its subsequent pollution and also provides the opportunity for a paper-less exchange of ideas.

Metropolitan Airports Commission -- Preferred parking is offered for car pool vehicles at the MAC administrative office.

Metropolitan Council – Environmental Services -- ***In*** 1998, a specific program--"Walk the Talk"--was aimed at promoting commuting options to MCES employees. Some survey results from respondents were that 72 percent of employees drive alone to work with an average one-way commute of 14 miles taking 25 minutes. Dependence on the private automobile is not unusual in that most treatment plants are some distance from public transit routes. Among respondents to the same survey, 35 percent were willing to try the bus and 27 percent were willing to carpool. Employee awareness was increased during "Walk the Talk" week by publicity, commuting pledges, and drawings for prizes. Each year, MCES participates in the B-BOP (bus, bicycle, or pool) challenge in the spring for its employees.

Pollution Control Agency -- We have a continuing pollution prevention program of promoting alternative transportation that includes: Annual B-BOP Day promotion; Bikeways and Bus Fare newsletters; Guaranteed Ride Home Program; Special Off-Day Parking; Reserved Carpool/Vanpool Parking; Discounted Bike Lockers; Shuttle Van and surveys and planning programs are conducted. In the survey summary dated January 1998, we found 6 percent of MPCA employees biked to work in the summer and 25 percent carpooled on three or more days per week. In March 1999, MPCA implemented Metro Transit's Metropass program.

The idea is that with more transit use, fewer vehicles would be on the road creating air, water, soil pollution, congestion, parking, and urban sprawl. Also, less solid and hazardous waste is generated when vehicles are shared. The program involves a low-priced all-you-can ride bus pass for agency employees. To date about 12 percent of staff are participating. We not only have employees using it to commute from home to work, but also we are encouraging them to use it as an alternative mode between work sites. The business travel aspect of the Metropass saves the state money in parking and vehicle expenses. MPCA staff has talked to several other state agencies and businesses about the benefits of this program and how it can work for them. We were the first state government agency in Minnesota to make the Metropass available to its employees. In June 1999, MPCA staff developed computer spreadsheets for individuals to estimate the cost of operating their personal vehicles. These were made available to staff. We hope to make them available on our Web Site in the future for the public.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Remote computer link systems allow employees to work at home or at another site. This reduces the costs of transportation and pollution to the environment. Car pools and buses are used for students and staff whenever possible.

Southeast Technical College -- The college has purchased two vans to allow larger groups to travel together whenever possible to reduce the number of vehicles used for travel. Interactive video and/or speakerphones are used for meetings between the Red Wing and Winona campuses to reduce travel.

Ridgewater Community and Technical College -- When we can, we car pool between both campus (Willmar and Hutchinson). We have two mini vans, one 16 passenger people mover, one 15 passenger van for use of larger groups to travel whenever possible pus cars.

St. Cloud State University -- SCSU subsidizes bus passes for students and faculty, including evening transportation in the campus area.

Department of Transportation -- Mn/DOT has installed various traffic lanes set aside for vehicles with multiple passengers and has set various park and ride sites promoting car-pooling or busing. Mn/DOT has active Tele-commuting programs both in home based offices as well as a remote facility located in Cambridge, Minnesota. Mn/DOT continues to research and promote various commuting options for the Minneapolis/St. Paul metropolitan area such as light rail, bike trails and pedestrian paths.

University of Minnesota -- The Department of Campus Health and Safety and the Department of Parking and Transportation Services are continually studying and implementing new strategies to reduce automobile traffic to the Twin Cities Campus and more efficiently direct the flow of traffic and pedestrians when they reach the University. Employee population densities are mapped to show critical areas for mass transit lines. Routes for buses have been maintained, in spite of shrinking state funding. Car-pooling is actively promoted through advertisements, reduced parking rates and preferential surface lot locations. Biking and walking routes are promoted (with new signage and special lanes on University roads) and the Twin Cities Campus uses a mass transit system to bus students, employees, and quests from parking lots to various locations on campus. Also, the University administration is promoting students living on-campus and is planning new student housing projects to entice students to live on campus or in the campus community, rather then commuting.
The University's Center for Transportation Studies (http://www1.umn.edu/cts/) provides education, research and outreach services in the area of transportation. The primary goal of the Center for Transportation Studies is to initiate programs to address critical transportation issues. The process is guided by the participation of Minnesota leaders, transportation professionals, and University facially and staff. A supporting goal is that this participation reflects the diversity of the various stakeholder groups affected by transportation. The Center's mission is as follows: As a research and land grant university, the University of Minnesota participates actively in the creation of new knowledge and insight, and in the dissemination of that knowledge and insight through teaching and service. The Center for Transportation Studies is a focal point for strengthening knowledge in transportation.

The Center identifies critical issues in transpiration, and uses multidisciplinary approaches to address them. Center research, education, and outreach programs create an environment for faculty, students, and practitioners from multiple disciplines to collaborate in transportation research and education efforts. It provides leadership and outreach efforts to government officials, private sector representatives, and the public in the application of new knowledge and the implementation of policies, programs, and technology that improve transportation. The environmental benefit is avoided air pollution and fuel consumption.

Board of Water & Soil Resources -- After conducting a successful pilot program, the agency instituted a permanent telecommuting program in January of 1999. Five employees currently telecommute – four are located in the St. Paul office and one in Bemidji.

11. Education, Communications and Training

Department of Administration -- The Resource Recovery Office represents Administration at the Interagency Pollution Prevention Advisory Team meetings. A representative from the Materials Management Division also regularly attends this meeting. The Resource Recovery Office developed pollution prevention training for government print buyers and designers. This training was in partnership with public, private, and not-for-profit entities in the Great Printers Project. The Resource Recovery Office provides sustainability and pollution prevention information to state employees at the annual October Central Stores Product Show and the annual Communications.Media Open House, as well as through periodic "Info to Know" bulletins, onsite presentations and in response to agency requests. The Resource Recovery Office developed a new travel display, promoting environmental purchasing and sustainability concepts in state government that was presented at conferences, meetings and events.

The Resource Recovery Office assisted with statewide Pollution Prevention Week planning, arranged for a pollution prevention message on state employee payroll statements and mailed and posted flyers in buildings about Pollution Prevention Week. The Plant Management Division coordinates departmental sustainability and pollution prevention information through the Resource Recovery Office. Communications.Media informed customers of environmentally preferred alternatives to reduce pollution through its *Fast Facts* newsletter, the Annual Paper Fair and Design event, training classes and its Internet web site: http://www.comm.media.state.mn.us. Communications.Media, the Materials Management Division, and the Resource Recovery Office support Minnesota Statutes, Section 16B.122, by providing state agencies with guidelines for paper stock and printing.

The Materials Management Division worked with the Resource Recovery Office and the Office of Environmental Assistance to provide additional environmentally responsible information through the purchasing training provided to state employees. The Materials Management Division is updating the environmentally responsible purchasing section of the Authority of Local Purchasing training manual that is provided to state employees. The Materials Management Division's Acquisition Management Specialists review each of their contracts to include environmentally responsible goods and services. The Materials Management Division has created a work group that meets monthly to discuss purchasing environmentally responsible products.

.Department of Corrections -- **MCF-OPH** – Video conferencing is becoming a preferred means for convening statewide meetings for safety, policy and procedure drafting, etc. Each videoconference saves time and expense on the part of safety officers and/or upper management and security personnel. **MCF-SCL** – Most all the vocational teachers on site the health and safety officer have received pollution prevention education through continued education at an annual cost of $1,000. The benefit is that they remain current with new and existing legislation.

Office of Environmental Assistance -- The Office of Environmental Assistance OEA and MnTAP's ongoing education programs to encourage waste and pollution prevention is directed at the targeted areas identified through strategic plans. The OEA promoted pollution prevention through programs and activities described in the following paragraphs. OEA provided a grant of $40,000 to the Minnesota Chamber of Commerce for the Minnesota Waste Wise program, a voluntary program designed to help businesses reduce waste. In addition, OEA awarded 32 grants for pollution and waste prevention. (See attached list in Appendix B.)

OEA staff coordinate Interagency Pollution Prevention Advisory Team, developing agendas and facilitating quarterly meetings, recording minutes, and maintaining the mailing list. In fiscal year 99 Governor Jesse Ventura signed a new and expanded governor's executive order for pollution prevention, which includes pollution prevention, waste reduction, and energy and resource conservation. Agencies that regulate activities that generate significant quantities of hazardous waste or use significant quantities of resources and/or toxic chemicals, or whose policies have important effects upon such activities, are required to develop policy statements indicating that pollution prevention is a priority. These agencies are further required to integrate pollution prevention into their regulatory and policy activities as a primary means of meeting standards. IPPAT meetings during fiscal year 99 included discussion of the new governor's order, a strategy for assessing environmental management costs, pollution prevention in building specifications, campus beautification, energy conservation opportunities, pollution prevention planning and reporting, and member agency presentations of their pollution prevention summary reports. The pollution prevention summary reports are consolidated and organized under 34 categories of pollution prevention programs and activities.
The MN GREAT! award program, first organized in 1995, continued in 1999, as part of the Governor's awards program. The awards committee chose the following candidates:

- The Western Lake Superior Sanitary District (WLSSD) for the Mercury Zero Discharge project, a partnership throughout the community to identify and eliminate mercury contributions from schools, hospitals, dentists and industry. The WaterShed Partners, a coalition of 36 public, private, and non-profit organizations, for working collaboratively to develop and implement educational programs to reduce urban runoff in the metropolitan area. The WaterShed exhibit has reached over 200,000 adults and children at nearly 100 different events and venues in the Twin Cities metropolitan area.

- St. Cloud Technical College for developing a CD-ROM program to train automotive specialists on the proper ways of managing the waste generated by the automotive industry. The program provides links to appropriate internet websites, insuring that the learners using the program have consistent environmental information.

- Hennepin County for their Sustainable Design Guide and Rating System, which has been the motivation behind the growth of new partnerships, legislative initiatives, and a wide array of programs and strategies to benefit the environment. The guide and rating system provide a systematic method of incorporating environmentally responsible design and management practices into county facilities.

- Houston County for the ClassCycle Bikes Project of Houston, which removes bicycles from the waste stream. Student technicians repair and refurbish them for public use. A master technician trains the students, and the students run the business, with schedules, pricing, inventory, advertising, bike repair, and sales completely managed by students.

The OEA continued partnerships with other agencies and organizations to incorporate pollution prevention topics and presentations into existing conferences, in order to extend the pollution prevention message to a wide variety of audiences.

OEA's Minnesota Sustainable Communities Network (MnSCN) was started in January 1997. It has continued to grow and currently has 1,819 members as of September 1999. MnSCN seeks to encourage networking, information exchange and better access to assistance among its member individuals and organizations with an interest in sustainability issues. One important component of sustainability is pollution prevention. Close to 1,500 MnSCN members receive a bi-weekly e-mail update on sustainability and many of these members are also listed in a printed MnSCN directory. A digest of examples, ideas, and resources on sustainability is also published. In April 1999, MnSCN sponsored a conference called Taking the Next Step Toward a Sustainable Future, which was held, at the Minneapolis Convention Center, attracting over 500 participants.

The OEA distributes the following materials through its Education Clearinghouse: Source Reduction Now, a detailed guide to implementing source reduction programs in companies and agencies; "Retail Hardware-Best Practices for Waste Management" Guidebook and video; "Transport Packing: Cost Effective Strategies to Reduce, Reuse and Recycle in the Grocery Industry"; "Waste Prevention Pays: Businesses Cut Costs by Cutting Waste" Video from EPA's Teleconference of the same name, produced in participation with OEA. The OEA continued distributing materials developed in fiscal year 98 for the healthcare industry, including the video "Mercury and the Healthcare Professional", and continues to meet with the Healthcare Industry Environmental Management Advisory Group.

The Product Stewardship Team continues to meet six times a year. The goal of this team is to coordinate, educate, and facilitate among state agencies, businesses, units of government and other interested parties, the stewardship of products, so as to reduce the volume and toxicity of the waste stream.

The OEA is continuing to distribute the Design for the Environment (DfE) toolkit, developed to help Minnesota manufacturers integrate environmental attributes into products before they are produced. DfE considers the environmental impact for the entire lifecycle of a product's life, including premanufacture, manufacture, distribution, use and end of life. Once a product is designed, its environmental attributes are largely fixed. The DfE Toolkit allows manufacturers to address environmental impacts at the most fundamental level, product design.

Metropolitan Airports Commission -- MAC employees are trained annually on Spill Prevention, Control and countermeasures (SPCC) and storm water pollution prevention (SWPP) techniques, as required. There is a pollution prevention team that monitors the outfalls and detention ponds around the airport. These employees have continuous input on how to improve the site and/or operations from the "hands on experience" point of view. There is also annual hazardous material training where basic pollution prevention methods are addressed. Recently a comprehensive recycling program was unveiled detailing how/where MAC employees can recycle a wide variety of items. A "recycling guide" was distributed to all employees and is included with new employee orientation.

Metropolitan Council – Environmental Services -- Within the MCES are the Office of Customer Relations and Environmental Education (CREE) and the Industrial Waste and Pollution Prevention (IWPP) section. Both units have provided technical and financial assistance toward the production and distribution of the "Roots of Hazard", a brand new interactive CD-ROM designed for use by fifth and sixth grade school age children. "Roots" teach students how to reduce hazardous household products at the source and how to properly dispose of any that remains as hazardous waste. The Minnesota Office of Environmental Assistance (MnOEA) produced this CD. "No Dumping" flyers--which describe hazardous household products that should not be disposed of to the sanitary sewer system—have been distributed for a few years at public events and are used as "stuffers" in utility billing notices by cities. In 1999, a new conservation brochure, "Reducing Water Usage in Your Home", was prepared by the MCES and also included in Minneapolis water utility bills.

The MCES has been a key member in the WaterShed Partners, a working association of forty-four organizations from various levels of government, schools, and non-profit groups. This past year, the "Think Clean Water" campaign placed advertisements in newspapers and public service announcements on the radio to enlist the public's participation in practices that would prevent non-point water pollution. The comprehensive "Resource Education Guide" was distributed to all metro area cities and counties in the state. Two traveling interactive museum-quality exhibits were produced and appeared throughout the state. WaterShed Partners and the campaign were recognized in 1999 with a prestigious Environmental Initiative Award for "the collaboration to reach truly unique and forward-thinking environmental solutions." Since 1995, MCES continues to distribute the "Non-Point Source Pollution Prevention Environmental Resource Guides" at teacher workshops. These sessions are funded through the Twin Cities Water Quality Initiative (TCQI [sic]) program and are always filled.

The IWPP works in an advisory role as well as a regulatory role with its permitted industrial dischargers. Two issues of the "Open Channel News" have been mailed to permittees. Specific pollution prevention web sites have been prepared for the internet and (internal) intranet. An outreach is made to non-permittees such as dental and medical clinics, furniture strippers, and radiator shops. IWPP staff attended both the Great Lakes Regional Pollution Prevention Roundtable And National Pollution Prevention Roundtable conferences this past year. The IWPP prepared a specific "Mercury Fact Sheet", to address concerns over mercury in the wastewater collection and treatment system, co-authored a monograph on dental waste management for the Water Environment Federation, and conducted a workshop for hospital and county hazardous waste officials on the topic of "Minimizing Mercury in Healthcare Facilities."

Metropolitan Mosquito Control District -- Annually the District conducts training sessions for all District employees in conjunction with the Minnesota Department of Agriculture. A portion of these training sessions is used to review waste management and recycling procedures used by the District. This training includes an overview of regulatory requirements, examples of waste streams produced by the District, handling and disposal procedures, storage requirements, recycling, and emergency spill response plans. Emphasis is placed on reducing the use of hazardous materials, replacing materials with less hazardous counterparts, and recycling.

Department of Public Service (Commerce) -- The Department operates the Energy Information Center, which serves energy consumers and features a toll-free "hotline" staffed full-time by Energy Information Specialists. The Energy Information Center answers questions, provides advice, and mails publications on energy conservation and renewable energy technologies. The Energy Information Center responded to 60,000 telephone, mail and trade show inquiries, distributed over 41, 408 electronic documents and over 239,000 printed publications during fiscal year 1999. The Department estimates energy savings equal to the total space heating needs of between 25,000 and 31,800 homes for one year as a result of contacts and publications distributed.

Minnesota Energy Code – The Department recently amended the Minnesota Energy Code, which became effective in July 1999 for commercial buildings and in April 2000 for residential buildings. In the past year, more than 6,000 residential contractors, as well as architects and building officials, received training on the energy code using materials prepared by the Department. The revised code assures buildings will not only be more efficient, but will also improve indoor air quality and structural durability.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Maintenance staff are trained on chemical use.

Hennepin Technical College -- HTC provides annual training for the Safety Officer and the maintenance staff in hazardous waste management. In the future, plans are being made to train all staff in pollution control education. HTC Safety Committee is reviewing and updating policies and procedures which involve mandatory safety and health training for all staff to include (but not limited to) Environmental Safety, Right to Know, Personal Protective Equipment, and MSDS as well as pollution control prevention. Additionally, training is planned for all staff in Blood Borne Pathogens, Safety and Security / Violence Prevention, Bomb Threats, Evacuation of Disabled Persons, First Aid, CPR. Tornado and Fire. The goal is to raise the awareness of the employee to become familiar with proper waste handling procedures, and other safety and health practices on the job. HTC's Emergency Action Plan is currently being reviewed and revised. A "Waste Abatement Program" training program is being promoted in all departments.

Ridgewater Community and Technical College -- Pollution control and OSHA requirements are a priority of concern for the college. This is an area where we are always training employees. We work with OSHA, Minnesota Department of Labor and Industry, Minnesota Department of Employee Relations safety and Industrial Hygiene Unit, MPCA and Anoka-Hennepin Technical College. Employee training includes Right to Know, AWAIR, PPE, Bloodborne, Respiratory protection, hearing conservation, lockout/tagout, confined space entry, hazardous waste awareness, asbestos awareness, fall protection, machine guarding, walking/working surfaces, ladder safety, fire protection, violence in the work place and safety committees. We now have a safety manager.

Southeast Technical College -- The college provides training to appropriate staff and students on safe handling and disposal of materials. Posters are displayed in each lab area as reminders.

Bemidji State University (BSU) -- The University continues to maintain a curriculum that offers a number of courses that address a wide range of environmental topics. Environmental courses are required to complete the Liberal Arts core. "Focus on the Environment" is one of seven areas in the University's Liberal Education Program. Students pursuing a bachelor's degree must take a minimum of one, three credit course from this area. During fiscal year 1999 pollution prevention messages were provided on the faculty/staff computer list during the week of 9/21/98 as part of Pollution Prevention Week. Procedures and opportunities for participating in waste reduction and recycling activities, both on and off campus, were communicated through the faculty/staff computer information list and the campus newspaper throughout the year. Notices encouraging double-sided copying and explaining the environmental and financial benefits were posted near campus copy machines. The Environmental Advisory Committee was expanded to increase representation from both the student body and faculty. The Environmental Advisory Committee will make recommendations to the University Cabinet on pertinent environmental issues and will work to promote environmental awareness. It is hoped that these educational activities will have a far-reaching impact by serving to heighten public awareness about environmental issues and ultimately have a positive influence on behavior and attitudes. Student exposure to and participation in, these activities, is expected to extend these benefits far beyond the campus, through their example and teachings, when they leave the University.

St. Cloud State University -- The Environmental and Technological Studies Department reflects increased opportunities for pollution prevention emphasis in the region of laboratory procedures.

Department of Transportation -- Mn/DOT conducts quarterly meetings with district/division waste management coordinator, *see "32. Technical Support."* Mn/DOT publishes several environmentally focused newsletters:

- *Waste Matters* (Nationwide distribution) – a newsletter that focuses on waste management, pollution prevention and waste minimization issues.
- *Environmentally Speaking* – a newsletter that focuses on storage tank compliance issues and maintenance site investigations.
- *Minnesota Roadsides* - A newsletter for roadside management

Mn/DOT produced a Bio-mound training video to aid in the construction of compost piles to treat petroleum-contaminated soil. *See "26. Pesticides, Fertilizers" and "31. Tanks (storage)."*
Mn/DOT provides training to cities and counties on traffic management systems. *See "12. Electronics."*

University of Minnesota - The University publication "Courses on the Environment, A Student Guide to University of Minnesota Courses on Environmental issues on the Twin Cities Campus, 1996-1999" lists 523 environmental courses for 54 different departments, many of which deal directly with pollution prevention. Two courses in particular cover pollution prevention education. The first is an interdisciplinary course called "Preventing Pollution: Innovative Approaches to Environmental Management," which is offered jointly through the following departments: Civil Engineering, Honors Seminar, Management, Public Affairs and Public Health. The second course is called "Environmental Engineering for Chemical Engineers," offered through Chemical Engineering and Materials Science, which educates senior and graduate I.T. students in incorporating pollution prevention principles early in the engineering design process.

The department of Environmental Health and Safety conducts annual training in hazardous waste management. The training covers the basics of pollution prevention. Approximately 2,500 employees are trained annually. The training is offered through classroom presentations and over the web. The web based training program is available on the Environmental Health and Safety home page (http://.dehs.umn.edu/slide1.html).

The Waste Abatement Committee made up of members from many key departments, coordinates pollution prevention projects at the University of Minnesota. The committee communicates information to new employees through orientation programs and to existing employees through in-house vendor trade shows sponsored by the Purchasing Department.

The Minnesota Technical Assistance Program (Mn TAP), located in the Department of Environmental and Occupational Health, in the School of Public Health at the University of Minnesota, continues to provide technical assistance in the areas of industrial and solid waste management and pollution prevention to Minnesota's manufacturing and service industries. MnTAP provides technical assistance to Minnesota businesses through the following services: 1) telephone assistance, 2) site visits, 3) intern programs, 4) presentations and workshops, 5) technical publications, 6) library, and 7) materials exchange. MnTAP averages 150 calls per month and 140 site visits a year.

The University's Waste Abatement Committee is working towards a pollution prevention/resource conservation web page that will promote and provide instruction and information about self-audits and other pollution prevention/resource conservation techniques. Education of the current and future generations on the importance of pollution prevention and resource conservation is one of the most important thrusts in developing a sustainable world.

12. Electronics

Department of Administration – The Materials Management Division contracts provide Energy Star compliant computers and copiers. The Materials Management Division provides for the reuse of computers and other electronics through its Surplus Services program. Computers are provided to Minnesota K-12 schools in collaboration with the departments of Corrections, and Children, Families and Learning. The program accepts personal computers no longer needed by State agencies and private businesses and through the use of prison inmate labor, refurbishes and distributes them throughout K-12 schools. Surplus computers are also distributed to township government offices, a program which earned a 1997 Partnership Minnesota Cooperative Public Award for outstanding achievement.

Department of Corrections -- **MCF-OPH** – Electronic toilets and showers are used where applicable for the dual purpose of saving energy through regulation of water and reduction in inmate vandalism. **MCF-SCL** – We recycle TV's, fluorescent bulbs/lights, computers, and monitors at a cost of $1,000 – 2,000 annually. The benefit is that we achieve compliance with legislation and reduce landfill costs.

Office of Environmental Assistance -- In fiscal year 1999, the OEA continued its active engagement in state and federal environmental policy initiatives in the computers and electronics manufacturing sector. These efforts include Design for Environment (DfE), pollution prevention, source reduction and end-of-life management strategies for computers and other electronic appliances. Ongoing efforts began in fiscal year 1998 and continued through fiscal year 1999. The OEA facilitated many product stewardship discussions and helped draft language for relaxed regulations for old CRTs managed for the purpose of recycling back into CRTs. Rules are currently being promulgated by the US EPA. OEA was also involved in market development efforts for material found in waste electronics and broader education efforts for governments, businesses and residents on options for managing waste electronics. OEA staff is working with the Department of Administration to develop contract language for purchase or lease of new computer equipment and for disposal of old equipment. The OEA has developed a demonstration project for removing used household electronic and electrical products from municipal waste. Minnesota's Electronics Recycling Project draws on the experience of local and state government, nonprofits, and several large corporate partners: Sony Electronics, Inc., Panasonic/Matsushita Electric, the Waste Management-Asset Recovery Group (WM-ARG), and the American Plastics Council. Sites in more than 30 counties throughout the State are collecting used products over a three-month period ending in October, 1999. Everything collected during the project will be processed for recycling by WM-ARG. A final report on the project will be available early in 2000.

This public-private partnership is a cooperative venture designed to test collection strategies and evaluate collected scrap for processing costs and value. All participants at collection events will be asked to complete a survey; information obtained will provide demographic and attitudinal information, as well as an inventory of products brought to the sites. At the end of the project, that inventory will be compared to market data provided by WM-ARG about the scrap value of material taken from the used products. In addition, each collection site host will report cost data to the OEA, making it possible to compare costs of a wide variety of collection methods in different demographic and geographic settings. With this information the principal partners in the project will estimate the cost of conducting a permanent, statewide program, and will explore how to pay for such a program.

Residents can bring anything with a cord or an imbedded battery to the collections. Exceptions to this rule include: photocopy machines; air conditioners; and white goods (including microwaves). In a 1995 report to the Minnesota Legislature, the OEA identified electronic products that contain materials to keep out of municipal waste as well as the components of those products to target. Priority components include: televisions and computer monitors (cathode ray tubes, or CRTs); electronic circuitry; batteries; mercury-bearing components; and PCB-bearing components. Collections are being conducted in association with household hazardous waste permanent facilities and one-day collection events, and through a variety of permanent and one-time drop-off recycling and clean-up events. Other collection strategies tested during the program include retail, curbside, and small businesses and institutions at specific sites.

The project also emphasizes market development activities for the secondary materials processed by WM-ARG. While all materials will be managed through available markets, some material will be managed through best-available markets. This emphasis is an attempt to find ways to lower the cost of recycling these products, or to add value to recycling efforts. Using these criteria, some CRTs will be sent to east coast markets to be reused as new CRTs, and some of the engineered plastics will be evaluated for the potential to reuse them in newly manufactured original electronic products. Plastics will be evaluated for resin types, ability to segregate residential streams, existing markets, and ability to incorporate with virgin resins to mold new high-end product. For more information about the project contact Tony Hainault at the OEA at (651) 296-3417 or consult the OEA's website at www.moea.state.mn.us/plugin.cfm.

Department of Human Services -- Electronic equipment (computers, printers, and calculators) are donated to schools. The Department of Human Services has donated its surplus computer equipment to agencies that have sustained equipment damage from the 1998 tornadoes. The Department of Human Services continues to follow a "Brown Goods Disposal Policy". That policy outlines the procedures for disposal of obsolete or damaged electronic equipment. According to that policy, equipment that cannot be donated is picked up by an electronics recycling vendor for recycling and disposal.

Metropolitan Airports Commission -- Electronic equipment that is no longer useful is taken to a facility for disassembly where metals are recovered and other constituents recycled.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Outdated computers are recycled.

Hennepin Technical College -- Electronic toilets, and air hand dryers are used where applicable. This has a dual purpose of energy saving, and regulation of water, and increased sanitation practices. TV's and fluorescent bulbs and lights are recycled. Electronic equipment is updated as much as feasible until the item becomes obsolete. It is planned that unwanted equipment will be donated, or sold to keep these materials out of the landfill system.

North Hennepin Community College -- Discarded electronics are disposed of appropriately.

Ridgewater Community and Technical College -- We handle old computers four ways. If they are a 486 or better we donate them to Minnesota computers for schools refurbishing program. If we have some that are older but are still in working order we put them on the state sale. If they are not in working order we have them managed through Retrofit Recycling. We also donate some to NLS for refurbishing. All other old electronic equipment is also recycled through Retrofit Recycling.

Southeast Technical College -- Old computers are sold to the public through advertised sales. Scrap electronic equipment is recycled through vendors from the MnTAP list.

Bemidji State University (BSU) -- The University has a continuing program for recycling obsolete and non-functioning electronic equipment. During fiscal year 1999 electronic recycling included more than 100 computers, monitors, and key boards, printers, 100 pounds of used smoke detectors, and several boxes of computer cables, phones, and other equipment. Recycling of electronic equipment will continue. Recovery and reuse of these materials prevents the introduction of the metals and other waste materials into the environment and reduces the demand for virgin material. An unknown amount of energy and other resources are involved in the transport, processing and handling of these materials.

St. Cloud State University -- The business office provides for the reuse of some computers, electronic equipment and other property through the surplus property resale program. Other electronic equipment (six shipments totaling about 25,000 pounds with a net cost of $2953.67) is recycled for somewhat offsetting commodity and precious metal credits. Styrofoam from computer, electronic, and other shipping cartons is recycled.

University of Minnesota -- The University of Minnesota statewide system collects all electronic equipment, redistributes what it can within the University, then pays to the have the rest sent to a licensed demanufacturer. The demanufacturer markets a portion of the equipment (sells the equipment as is or as components), recycles a portion (particularly scrap and precious metals), and properly disposes of the remainder. The University has worked extensively with the Minnesota Dept. of Administration and other agencies to develop a state wide electronics recycling contract.

The University's Computer Repair Service (CRS) and Como Recycling Facility (CRF) both provide collection of unwanted computer systems. Both programs market the usable computers back to the University community employing web pages and showrooms (CRS for a charge and CRF for free). CRF also manages a web-based exchange program (http://www1.umn.edu/recycle/reuse.html), referred to as the Virtual Warehouse, that allows interested parties to market or buy computers and other electronic equipment on-line without the middlemen. The University recycled approximately 200,000 pounds of electronic material in the past fiscal year. It costs approximately $.10/lb to recycle electronic equipment. Recycling electronics provides resource conservation and avoids heavy metal contamination of soil and groundwater.

13. Energy - Lighting

Department of Administration -- The Division of State Building Construction participates with utility companies to retrofit existing building lighting systems to reduce energy consumption. The Division of State Building Construction specified automatic turn-off switches for all overhead lighting in its remodeled offices. The Plant Management Division recycles incandescent bulbs to prevent solid waste disposal. The Plant Management Division coordinates building lighting retrofits with the Division of State Building Construction and Northern States Power Company to reduce energy consumption, thereby decreasing pollution levels. The Materials Management Division procures only reduced mercury fluorescent lamps. The Materials Management Division purchased solar-powered highway warning signs for the Department of Transportation. The Travel Management Division minimizes lighting through the use of energy efficient lights.

Department of Corrections -- **MCF-FRB** – FRB retrofitted ballasts to electronic fixtures at a cost of about $20,000.
MCF-OPH – New clear lenses were installed in inmate rooms to increase foot-candles to meet American Correctional Association (ACA) requirements without the need to increase bulb wattage. Fluorescent bulbs, as well as HIDs, are recycled through Recyclights. In excess of one ton of bulbs was shipped to Recyclights this summer.
MCF-RW – Used lamps (fluorescent and high-intensity discharge) are continuously collected. Goodhue County Recycling Center accepts bulbs for a fee.
MCF-SCL – The facility light system was replaced in 1993, using the NSP conservation lighting retrofit program. The cost was $252,000. Long-term cost savings and energy conservation are the benefits. The cost savings are about $2,000 per month after a seven-year payback.
Thistledew Camp (TC) – We do daily building checks to make sure lights are off.
MCF-WR/ML – Used lamps (fluorescent/high intensity discharge) are continuously collected. A shipment of nearly 1,000 lamps was made in June of 1999.

Office of Environmental Assistance -- The OEA encourages energy conservation through its grants.

Department of Human Services -- Regional Treatment Centers continue to upgrade their lighting from incandescent lights to fluorescent lighting.

Metropolitan Council – Environmental Services -- Several retrofits to energy-efficient fluorescent lamps or high intensity vapor lamps have taken place at MCES facilities. However, unlike incandescent lamps, these alternatives are considered as a special hazardous waste due to their mercury content. In 1998, over 4,250 lamps were recycled through Recyclights in Bloomington. Various fluorescent lamp change-out programs have been underway to replace older lamps with the new, thinner varieties (F30T8) that contain less mercury and are even more energy -efficient. Some facilities have installed motion sensor switches, which turn off room lights if no motion is detected within 15 minutes.

For example, by utilizing the unique properties of carbon dioxide (CO_2) in its supercritical state, relatively large volumes of solvents are no longer necessary for sample extraction or cleanup of concentrated extract. Furthermore, there is no longer a need to evaporate solvents in laboratory hoods. Some methods requiring up to a liter of solvent can now be performed with a few milliliters. In 1997, the SFE system of PCB analysis was brought on-line. Reductions in the use of methylene chloride have been over 90 percent and reductions in the use of acetone have approached 75 percent. The SPE florisil cleanup technique has reduced the use of acetone and hexane and has eliminated the uses of mercury and ethyl ether altogether for that procedure. The SPE Empore™ disk will enable the Lab to eliminate methylene chloride from the PCB/Pesticide method. A constant goal is to reduce the use of organic solvents such as methylene chloride, hexane, and acetone to the lowest levels possible. During 1998, the Lab switched to a micro-technique for cyanide analysis, further reducing the use of toxic chemicals. The problem still remains, however, in obtaining the approval of new techniques from regulatory agencies for use as standard analytical methods. It is ironic that the U.S. EPA promotes pollution prevention yet retains old laboratory methods that generate hazardous waste!

In 2000, the Lab will move into a new facility. Pollution prevention efforts in the new building construction have involved the use of "waste" heat generated elsewhere at the Plant during the sludge incineration process. In addition, variable volume air handlers have been incorporated to reduce demand on the heating, ventilating and air-conditioning system for times when air usage will be lower. Lastly, recycled materials have been utilized in the construction of the building wherever possible within the scope of the project.

Metropolitan Mosquito Control District -- The District operates entomology labs at the St. Paul facility which use ethyl alcohol to preserve insect specimens collected in the field. Improvements in the lab procedures to recapture, filter and re-use ethyl alcohol as much as four times before it is disposed of has led to a 77 percent reduction in the amount of alcohol used, resulting in an annual savings of $1,310.00 for the District.

Pollution Control Agency -- The MPCA Air Quality Lab has added a Temperature and Humidity-controlled room for the handling of PM2.5 filters and additional refrigerator space for the storage of PM2.5 filters to meet EPA guide lines. Additional counter and cabinet space better accommodate Criteria Monitor Calibration/Maintenance/Analysis and reduce nuisance noise levels in the lab, in addition to creating more desk work space in the Lab. They also added Tank Tie Downs in the Tank/Hazard Storage Room to comply with State Fire Marshall Code.

Department of Public Service (Commerce) -- The Weights and Measures Division receives petroleum samples from various companies for testing. The waste remaining after testing is either returned to the petroleum company for further refining or added to the Division vehicle tanks.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC Photo lab produced a small amount of hazardous waste, which is collected and stored in an approved container. This is disposed of through a vender. The Dental lab produces a very small amount of heavy metals and this is collected and recycled through a vender.

North Hennepin Community College -- NHCC has a MacNeil Environmental contract at a cost of $2,600.

Ridgewater Community and Technical College -- The labs do produce hazardous waste and are all handled through the University of Minnesota hazardous waste recycling program.

Southeast Technical College -- Southeast Technical College does not have any science laboratories where hazardous chemicals would be used. Laboratories for the college consist of shop areas for trade and industrial programs where students can gain hands-on experience in their chosen technical program.

Bemidji State University (BSU) -- The use of microscale techniques in chemistry laboratories will continue. In fiscal year 1999 the Chemistry Department reviewed its laboratory class experiments with the goal of reducing waste generation. A waste intensive experiment was removed from the curriculum as a result. The laboratory class review will continue and alternative experiments will be incorporated during the school year. Microscale use reduces the volume of waste generated as compared to macroscale techniques, reducing hazardous waste costs and chemical costs. Equipment costs are somewhat higher for microscale compared to macroscale experiments. The laboratory class review resulted in eliminating approximately 35 L of waste per year from the program.

St. Cloud State University -- MacNeil Environmental Inc. trained Biology, Chemistry, Earth Science, Environmental and Technical, and Physics staff and faculty last winter on pollution prevention and waste minimization as part of OSHA Laboratory Standard training. They have assisted the expansion of our hazardous waste disposal and recycling program. The Chemistry Safety Committee and Chemical Hygiene Officer have been instrumental in fostering better lab user training, labeling, eyewash/shower inspection and hazardous waste control.

Department of Transportation -- Mn/DOT materials laboratories are researching analytical procedures that eliminate various chemicals used during quality assurance testing of bituminous. Several successes have been experienced. Several Colorado vacuum extractors have been replaced with Ploog Centrifugal extractors. This change in equipment resulted in approximately 60 percent reduction of 1,1,1-trichloroethane used. Research to find a substitute chemical for 1,1,1-trichloroethane has been conducted. The laboratory test results achieved by using Zecol, along with a few procedural changes, appears the same as when 1,1,1-trichloroethane is used. Further research to reduce the amount of chemicals used during quality assurance testing was conducted. Mn/DOT purchased 9 nuclear density machines for the materials laboratories statewide. These machines are expected to drastically reduce or possibly eliminate the use of 1,1,1-trichloroethane or Zecol.

Several analytic furnaces have been purchased for testing. The results of these tests will be used to compare results from the current method using 1,1,1-Trichloroethane or Zecol. These furnaces are hoped to drastically reduce or possibly eliminate the use 1,1,1-trichloroethane or Zecol. One Mn/DOT materials laboratory has substituted vinegar for Muriatic acid. Muriatic acid was used to clean air pots and other laboratory equipment. It was found that if the equipment were allowed to soak in vinegar overnight, the equipment would wipe clean the next day. The amount of analysis run by Mn/DOT's Material Laboratories, requiring the use of 1,1,1-trichloroethane, has decreased due to a change in quality assurance testing specifications. This has decreased the amount of 1,1,1-trichloroethane used.

University of Minnesota -- The University of Minnesota includes pollution prevention as part of the chemical waste management training for all laboratory workers. The training manual provides suggestions, information resources and reporting documents (http://www.dehs.umn.edu/guidebook/index.html). The University of Minnesota Department of Environmental Health and Safety has initiated a pilot project to identify and recycle via distillation laboratory waste solvents that are amenable to distillation and are marketable to University laboratories. Initial successes have produced marketable hexane, acetone and acetonitrile. The projected cost savings to the University, if the distillation and marketing focused solely on acetonitrile, would be $800 disposal costs avoided and $30,000 solvent purchase avoided for the annual system capacity of 1200 Liters of recycled acetonitrile. Total projected annual costs are $10,800, which yields net annual savings of $20,000.

20. Materials Exchange

Department of Administration -- The Travel Management Division's material exchange is accomplished through Surplus Property when property has useful life remaining.

Department of Corrections -- **MCF-OPH** –Rechargeable batteries are returned to the vendor by state contract.
MCF-SCL – Recycle of cardboard ($2,800); pallets ($50); metal (scrap iron) ($1,500); aluminum pop cans ($1,289); pallet recycle ($35); scrap demolition ($500).
Cost = Recycling of pallets and scrap demolition costs $550 – Revenue from the balance is $5,624 – however, the labor to package products negates savings. Benefit – No landfill disposal costs

Office of Environmental Assistance -- In 1993, the OEA formed the Minnesota Materials Exchange Alliance, a group composed of counties and agencies interested in maximizing materials exchange opportunities. The mission of the Alliance is to develop an effective materials exchange infrastructure in Minnesota and to foster coordination and greater utilization of the state's potential for reuse. The statewide success rate overall is 32percent.

Materials Exchange Programs in Minnesota - contact numbers

- Northeast Minnesota Materials Exchange -- (218) 722-3336 ext. 440
- Olmsted County Materials Exchange -- (507) 285-8231
- Southeast Minnesota Recyclers Exchange (SEMREX) -- (507) 457-6464
- Metro Area eXchange (MAX) -- (612) 627-4646 or toll free (800) 247-0015
- Southwest Minnesota Materials Exchange -- (507) 372-8227
- Minnesota Technical Assistance Program (MnTAP) -- (612) 627-4646 or toll-free (800) 247-0015

Department of Human Services -- Brainerd RHSC's x-ray machine will be donated or sold for a nominal fee to another user.

Metropolitan Airports Commission -- MAC has a listing with the Minnesota Materials Exchange to facilitate the reuse of the many pallets that are collected from various areas of the airport: MAC has contacted organizations that have a listing on the Minnesota Materials Exchange for pallets wanted, as well.

Metropolitan Council – Environmental Services -- MCES has utilized materials exchanges for surplus goods that otherwise would have been handled as hazardous waste. Exchanges have been made with the University of Minnesota, through the Minnesota Materials Exchange Alliance, and directly with industrial users.

Pollution Control Agency -- We had a re-useable table set up during the 1998 Pollution Prevention Week and Earth Week. Staff is encouraged to bring in items that they no longer want and other staff can help themselves to the items that they want. It seems like a good time for people that like to gather odds and ends that they use for holiday crafts and many staff find treasures to take home and reuse!

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC recycles paper, cardboard, and carpet. This process will be reviewed and revised as needed in the future.

Southeast Technical College -- Materials exchange newsletters are read to determine if any materials listed could be used for college needs. So far, we have not been able to find a use for any surplus materials, or to dispose of through the materials exchange program.

St. Cloud State University -- Carpet and cardboard are recycled; also lard and cooking oil. A local farmer's hogs are fed left over food.

University of Minnesota -- The University Department of Environmental Health and Safety operates a chemical redistribution program (http://www1.umn.edu/recycle/reuse.html) that finds users of unwanted but usable chemicals within the University community. The program distributes approximately 1000 kg of chemicals per year that would otherwise be disposed of as hazardous waste. The University Facilities Management Como Recycling Facility (CRF operates a Reuse Program for redistribution of unwanted computers, office furniture and equipment, and laboratory furniture and equipment (http:/www1.umn.edu/recycle.html). The target audience is the University community and non-profits. Available items are listed and often shown on their web page. A new CRF web-based program called the Virtual Warehouse lists items available for sale/redistribution at their current locations. Items are marketed and exchanged without the extra handling and transportation required to take them to the central warehouse.

21. Office Supplies

Department of Administration -- The Division of State Building Construction specifies the purchase of soy-based inks for all writing instruments, if available. Also, the division purchases water soluble, non-toxic marking instruments, whenever available. The Material Management Division's Central Stores and S&T Office Products sold 2,244 recycled products, up from 2,226 products in fiscal year 1998. Sales totals for recycled products in fiscal year 1999 were $1,749,702 at Central Stores and $261,748 through the S&T catalog. This is up from fiscal year 1998 totals of $1,537,757 for Central Stores and $233,315 for S&T.

The Material Management Division's Central Stores added products to contract #400193 that are made from 100 percent recycled paper containing 30 percent post-consumer waste, and printed with soy-based ink. The covers on books and planners are made from 50 percent recycled fiber. The Materials Management Division and the Resource Recovery Office, in coordination with the Office of Environmental Assistance, have concluded a pilot program to test the performance of a new recycled copy paper that is 100 percent post-consumer content and is processed-chlorine free. This paper will be available from Central Stores this fall. The Risk Management Division continues to request soy-based ink for printing orders and continues to recycle printer and typewriter toner cartridges. The InterTechnologies Group refills small spray bottles with glass/desk cleaner from gallon containers to avoid the use of aerosol cans. The InterTechnologies Group uses recycled laser printer cartridges.

Department of Corrections -- **MCF-LL** – Office supplies are recycled internally or by outside vendor. There are ongoing efforts to further reduce pollution as opportunities arise.
MCF-OPH –Laser cartridges and Telephone books are recycled rather than put in the trash.
MCF-SCL – We use Shred-It Recycling for a large portion of our office products at a cost of $9,445. This provides cost savings to the landfill and provides products for reuse.
Thistledew Camp (TC) – We recycle clean paper products.

Office of Environmental Assistance -- The OEA changed copier machines to Savin IKON, which has a non-removable toner cartridge that is made of high-density polyethylene plastic. This is recyclable but has ink that needs to be removed. The OEA and several other agencies participated in a pilot project to test a 100 percent process chlorine-free paper. The Department of Administration intends to make that paper available on contract when they prepare a new contract this fall.

Recycled paper is used exclusively in the office, whenever it is available. Letterhead and envelopes contain 100 percent post-consumer recycled paper content. The OEA continues to use water-based correction fluid instead of solvent-based fluid.

The OEA computers are cleaned with pressurized carbon dioxide instead of chlorofluorocarbons. OEA audio, video, and digital tapes are reused, as well as computer discs. For all internal meetings, staff specifies and purchases lunches and break food and beverages from vendors who offer low- or no-waste packaging and reusable dishware. This reduces waste and supply costs. We employ washable linens in our kitchen and in restrooms.

Metropolitan Airports Commission -- Products used are from recycled items whenever possible. Printer toner cartridges are returned to the manufacturer for remanufacturing. Recycled paper is used in the copy machines, whenever possible. MAC employees separate all types of recyclable items. The private cleaning companies are required to keep recyclable items separate from the trash. Large containers are located outside each MAC building for separate storage of trash, cardboard/paper items, and cans/bottles.

Metropolitan Council – Environmental Services -- Office supplies, particularly paper goods, are frequently purchased with recycled and post-consumer recycled content material. Laser toner cartridges for personal computer printers are collected and sent to a vendor where they are prepared for re-use at the MCES.

Metropolitan Mosquito Control District -- The District specifies paper with a minimum 25 percent post-consumer fiber content for printers and copy machines when ordering from vendors. Reconditioned, re-inked laser printer cartridges and recycled inkjet cartridges are purchased and used whenever possible. However, the District has found that the performance and quality of recycled printer cartridges does not approach that of new printer cartridges. Used laser printer cartridges are collected and returned to office supply vendors for reconditioning whenever possible.

Pollution Control Agency -- The Central office is planning to have reusable visitor badges available by the end of 1999. We currently use paper labels. There are many advantages to reusable badges: less paper waste, easily distinguishable, improved security, and they do not damage clothing. The Metro District participated in a pilot project with several other state agencies to test a new type of recycled paper. Currently, the paper used by the agency is 30 percent post consumer content. The Office of Environmental Assistance and the Department of Administration sponsored the project. The new paper, distributed by Badger, is 100 percent post consumer content and chlorine free. The paper was used in photocopy machines and laser printers for six weeks from April 15 to May 31. Feedback from staff was positive on the performance of this product. A decision to include this paper on the state contract will be made in August 1999. Efforts to reuse existing supplies whenever possible were continuously made throughout 1999. Each floor has a designated storage area for reusable items such as file folders, 3-ring binders, and a variety of miscellaneous office accessories. MAPS users are encouraged to purchase writing tablets that contain the highest percentage of post-consumer content material from the Central Store state contract. The MPCA Waste Reduction and Recycling Committee (WRRC) continued to sponsor pad-making parties with staff who volunteer to make one-sided paper pads with used paper over their lunch hours. This event is usually scheduled once a month. Each MPCA staff member received a one-sided paper tablet courtesy of WRRC in May 1999.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- The college uses recharged laser printer cartridges.

Hennepin Technical College -- Rechargeable batteries are used for two-way radios and other small appliances. Pop cans, glass, plastic, paper, cardboard, small batteries, and carpet are all recycled through a vender.

North Hennepin Community College -- We recycle as much as possible: paper, cans, glass, plastic, and cardboard. This is covered by the trash-hauling contract, the actual cost of which depends on the amount hauled. We also use Security Shred-It to destroy and recycle confidential data at an annual cost of $3,600.

Ridgewater Community and Technical College -- We recycle everything that is possible. Cardboard, pop cans, glass, plastic, paper, books and magazines.

Southeast Technical College -- Office supplies are purchased off state contracts or obtained through surplus properties whenever possible. The business office provides a central store for all college office supplies. Staff requisitions supplies.

Bemidji State University (BSU) -- Copy machine paper with 30 percent-recycled content is now purchased for use in all campus copy machines. The paper costs approximately $1600/year more than paper previously purchased. The environmental benefits are reduced environmental impacts associated with the production of virgin paper.

St. Cloud State University -- SCSU uses paper with 50 percent recycled content and 20 percent post-consumer fiber content extensively. Office paper is recycled. Recycled photocopier toner cartridges are purchased. Ink and toner cartridges are recycled. Posting surplus supplies for use in other departments by e-mail is encouraged.

Board of Water & Soil Resources -- All offices recycle office paper.

22. Oil, Oil Filters

Department of Administration -- A team comprised of Materials Management Division, Travel Management Division, State Patrol, Department of Natural Resources, and Department of Transportation staff developed a contract for oil change and lubrication for government vehicles that offers re-refined oil and new oil at the same price. As a result, agencies may select the vendor that best meets their needs, while encouraging the conservation of a nonrenewable resource. The Materials Management Division has a contract for bulk re-refined motor oil. The Travel Management and Plant Management divisions' oil filters are drained for 24 hours in order to qualify as solid waste, as opposed to hazardous waste. Re-refined oil is also used for oil changes. The Plant Management Division participates in a used-oil recycling program. The Materials Management Division, in conjunction with the Department of Transportation, developed a contract for the management of used oil sorbents and filters for energy recovery.

Department of Corrections -- **MCF-FRB** – We contract with Safety Kleen. Costs were $500 in fiscal year 1999.
MCF-LL – Oil is recycled internally or by an outside vendor. We have ongoing efforts to reduce pollution further as opportunities arise.
MCF-OPH – Approximately 50 gallons/year of used oil and 25 gallons of recyclable refrigerant oil are picked up and recycled by a local vendor. He will also recycle grounds-equipment oil filters. Automotive oil filters are recycled by Rick's 36.
MCF-RW – All waste oil and oil filters are collected and recycled.
MCF-SCL – Our oil and oil filters are collected for recycling with Eastside Oil company in St. Cloud, Minnesota, at a cost of $200. The benefit is that they are not disposed of in a landfill, and there is no ground contamination.
MCF-STW – MINNCOR – Used oil is used for fuels – used oil filters go to scrap steel dealers and are recycled.
Thistledew Camp (TC) – OSI picks up waste oil and oil filters.
MCF-WR/ML – Oil and oil filters have been collected since the onset of the facility. Oil is collected in 55-gallon drums, as are oil filters. The oil is pumped from the drums and burned for energy recovery. This service is free and there was 355 gallons of oil recovered during fiscal year 1999. Oil filters have a cost of $75.00 per 55-gallon drum for disposal. The facility had one drum of oil filters picked up during fiscal year 1999.

Department of Human Services -- Oil filters are drained and picked up for disposal by a contract vendor.

Metropolitan Airports Commission -- MAC recognizes the need to collect used oil from non-business tenants at the Reliever airports. This reduces the chances of possible ground water and soil contamination from the oil being "dumped out back" or thrown into the dumpster. Oil generated by non-business tenants and MAC operations is stored in tanks provided by MAC and collected periodically by a permitted vendor. It is then recycled or re-refined. Oil filters generated by maintenance activities are drained, crushed and recycled at an approved facility.

Metropolitan Council – Environmental Services -- Used oil and oil filters are handled as special hazardous wastes. The used oil is collected and stored at MCES facilities and transported by licensed haulers for burning as fuel. Used oil filters are drained and, at the larger facilities, crushed. The residual oil is collected and the crushed metal filters are recycled with scrap iron and steel by a licensed hauler, such as OSI Environmental, Inc. In 1998 over 6,500 gallons of used oil were transported and approximately 1,770 pounds of used oil filters were recycled.

Metropolitan Council – Metro Transit -- All used oil and oil filters are recycled. Used oil has been sold as a fuel since 1985. Used oil filters have been eliminated from the waste stream and recycled since 1993.

Metropolitan Mosquito Control District -- Used oil and used oil filters are recovered and recycled through a recovery vendor. For the past accounting period the District recycled 567 gallons of used oil and 555 pounds of used oil filters. Re-refined oil is being used in the District's light duty-vehicles to help create a market for re-refined products. MMCD continues to follow a fleet-maintenance procedure of extending the mileage between oil changes for District owned vehicles. Currently oil changes are every 5,000 miles for light-duty vehicles, which is most of the fleet, and 3,000 miles for heavy-use vehicles. This fleet maintenance procedure has been in effect for almost 4 years. During this time MMCD has not experienced any fleet problems related to the extended mileage program. MMCD will continue to monitor the condition and performance of the fleet for any impacts due to the extended mileage.

Department of Military Affairs -- The Department of Military Affairs has been able to realize significant savings in the use of oil by testing oil in their equipment to determine whether it needs changing. If the properties remain the same, they don't change the oil.

Department of Public Service (Commerce) -- See batteries.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- AHTC staff recycle used oil.

Hennepin Technical College -- All used oil is collected and saved in barrels. It is then picked up and recycled by a vender. Oil filters are collected, drained and disposed of through the "Safety Klein" vender services.

North Hennepin Community College -- We store used oil and filters in approved containers, and recycle them through a local recycling vendor. The annual cost is $300.

Ridgewater Community and Technical College -- The oil and filters that are used in the shops are recycled through Safety Kleen services.

Southeast Technical College -- Oil and oil filters are recycled following all current regulations. Oil changes on customer vehicles in our Auto Mechanics technician program are kept to a minimum to reduce the amount of oil and oil filters collected.

Bemidji State University (BSU) -- University vehicles are maintained through a contract with a local service station. Waste oil is blended with other fuel and burned in the contractors heating equipment. Oil filters are drained and recycled. Waste oil from other campus sources is recycled through the Beltrami County Solid Waste Services. This practice reduces contractors' heating fuel costs and reduces potential for oil and toxic metal pollution as well as the negative environmental impacts associated with producing fuel that would otherwise be used to heat the contractor's premises. Energy and other resources will be consumed during the production and use of the equipment and supplies used to manage the oil recycling activities.

St. Cloud State University -- Oil filters are drained for over 24 hours to qualify as special hazardous waste; motor oil is collected and recycled.

Department of Transportation -- Mn/DOT has installed approximately 67 waste oil burners in 67 maintenance shops. The waste oil burners allow Mn/DOT to burn waste oil as a supplemental heat in our maintenance shops. This has resulted in lower utility bills. Mn/DOT has changed from using non-burnable clay sorbent, which was landfilled, to a burnable sorbent. These burnable sorbents are now used as waste-derived fuel for the generation of steam and electricity. Mn/DOT recycles all oil filters. The waste oil burners allow Mn/DOT to burn waste oil as a supplemental heat in our maintenance shops, which results in lower utility bills. Used oil sorbents were being landfilled. Now they are being burned to generated steam and electricity in a more environmental sound waste to energy technology. *See "14. Energy – Production."*

University of Minnesota -- The University of Minnesota collects its used oil and oil filters for energy recovery and materials reclamation.

23. Paints, Coatings, Stripping

Department of Administration -- The Materials Management Division specifies no-lead paint for traffic marking and equipment paint. The Materials Management Division is working with the Office of Environmental Assistance to develop a contract for recycled paint. Volunteers are currently being sought to participate in the recycled paint pilot project, which will be used to show the efficacy of using and procuring recycled paint. The Plant Management Division makes solvent-free paint available to state agencies and political subdivisions through its state contract. The Plant Management Division tests the use of latex-based duct sealant compounds. The Plant Management Division uses nut chips with shot-peening equipment to remove paint and gasket materials.

Department of Corrections -- **MCF-LL** – Paint is recycled internally or by outside vendor.
MCF-OPH –Latex paint products are used where possible. Oil based paints are used only in those locations with heavy use. Paint residue and waste is disposed of through the institution's hazardous waste hauler and incinerated by the hazardous waste vendor. MCF-OPH is a VSQG, generating only about 100 gallons of hazardous waste/year.
MCF-RW – Used oil-base paints are collected and recycled.
MCF-SCL – Painting, coating, and stripping sludge are collected and reduced properly at a cost of $2,000 annually. This keeps hazardous products out of the landfill and ditches.
Thistledew Camp (TC) – We use the Clean Shop Disposal for these items.
MCF-WR/ML – Paints and solvents are collected and removed from the facility by an MPCA licensed hazardous waste hauler. The facility averages about 15 – 20 gallons of liquid waster per month. This average is consistent and it is not anticipated to fluctuate up or down. Paint booth sludge is collected and removed by the same hazardous waste hauler. Latex paint is always used whenever possible for the replacement of oil-based paint

Metropolitan Airports Commission -- The MAC Paint Department retrofitted its paint application vehicles to allow for latex, water-based paints to be used when striping runways and taxiways. This minimizes the use of solvents that were in the non-latex paints. The Paint Department also uses paint that has been inadvertently left by contractors after construction is complete. The painters will use viable paint as a base coat thus reducing the amounts of paint disposed of as a hazardous waste.

Metropolitan Council – Environmental Services -- The Paint Shop at the Metro WWTP continues in its relevant on-going pollution prevention activities such as direct-to-metal, water-based paints and epoxies which eliminate the use of approximately 1,000 gallons of solvent-based primer and 100 gallons of paint thinner each year. Used polystyrene paint arrestors are dissolved in waste thinner, thereby eliminating one hazardous waste stream entirely. Cleaning and paint removal alternatives have eliminated the generation of almost 4,000 pounds per year of sandblast media as hazardous waste. Black Diamond media used in combination with the proprietary Blast-Ox compound does not exceed hazardous waste levels when analyzed for TCLP. Blast-Ox is dusty, however, and is not suitable for use in confined spaces. In one instance where this additive was not used, the waste blast media exceeded TCLP thresholds for lead. Arrangements were made to deliver the media to Gopher Resource Corporation in Eagan to use as feedstock material for lead smelting. This alternative was better than having to handle the media as hazardous waste and to ship it out of state at four times the cost of the feedstock option. A baking-soda base blast media, Armex, is used to strip coatings and clean machinery such as motors and pumps. The Paint Shop received a Special Recognition award from the MN GREAT! program in 1995 for these activities and savings estimated at $26,000 annually.

Pollution Control Agency -- The new Brainerd Office will feature low-VOC paint and finishes, high recycled-content resilient carpeting and flooring, and recycled-content or recycled styrofoam ceiling tiles.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- AHTC has stopped stripping all floors each year.

Hennepin Technical College -- TC uses only environmentally safe paints, coatings, and stripping whenever possible. These products are odor-free and do not use an oil-based paint. Old paint is stored in approved containers and is collected and disposed of by a vender. When the Automotive department uses these products, the waste remains are recycled through the vender "Safety Kleen". Latex paints are used whenever possible.

North Hennepin Community College -- We use latex paint only, no oil-base paint. Opened paint is stored in approved containers and, as needed, disposed of through Hennepin County.

Ridgewater Community and Technical College -- We use latex paint products in the classrooms. Water-base epoxy is used in the hallways, bathrooms and other heavily used areas. The empty paint cans are allowed to dry and then disposed of properly in trash dumpsters. Partially used and unused paint products are recycled through Safety Kleen services. We have talked to MnTap about recycled latex paint and plan to try the program out.

Southeast Technical College -- Latex paints are used whenever possible by our maintenance department instead of oil-based paint products, and old paint is often used as a primer rather than purchasing primer paint. The auto body technician program is using automotive paint with lower VOC ratings. Band and String Instrument repair technician and Carpentry programs use strippers and refinishing products. Safer products are considered when possible. All products are stored, used, and disposed of following regulatory requirements.

Bemidji State University (BSU) -- Electrostatic painting and low VOC paint are used whenever possible.

St. Cloud State University -- SCSU has converted all possible coatings to water-based products, including paint, varnish, and traffic stripping paints, to limit VOCs.

Department of Transportation -- Several Mn/DOT districts are using 110-gallon returnable paint totes instead of 55-gallon single-use drums. This eliminated waste 55-gallon paint drums. Several Mn/DOT districts have switched entirely to a heavy-metal-free latex pavement marking/striping paint. This eliminated an entire hazardous waste stream (lead, chrome, and toluene) generated during pavement marking and striping operations in these districts. *See "16. Heavy metals."* Mn/DOT has replaced several "bleeding" paint guns with "airless" paint guns located on the road striping trucks. The change in equipment results in a reduction of the amount of toluene used for cleaning and flushing by approximately 50 percent. Mn/DOT then reuses the used toluene, by one of two methods, which further reduces the amount of toluene purchased.

Method 1: The paint solids in the used toluene are settled out in the bottom of a 55-gallon drum, creating two distinct layers. The top layer of toluene is than taken off and reused for cleaning or thinning and the bottom layer is managed as a hazardous waste.

Method 2: The used toluene generated by flushing and cleaning the paint lines that has not separated into two layers can be reused as a thinner when thinning of solvent based striping paint is needed. Mn/DOT has purchased a new parking-lot-pavement striping machine that is capable of utilizing latex paint, thus eliminating the use of toluene as a cleaning solvent. Mn/DOT has purchased a new road striping truck and is retrofitting older road striping trucks to be capable of utilizing latex paint, thus eliminating the use of toluene. All vehicles purchased by Mn/DOT are specified to have heavy-metal-free coatings and paints. *See "16. Heavy metals."*

University of Minnesota -- A collaborative decision by University officials and a host of other agencies brought about the coating of the interior walls of the new $35 million University Gateway center with used paint. The project is part of a "green" building initiative spawned by the Minnesota Office of Environmental Assistance, the University's Waste Abatement Committee, Hirshfield's Painting Mfg. And the Minnesota Painting and Wallpapering Employers Association. Though recycled paint is not new to Minnesota, the Gateway venture will signify the largest commercial use of recycled paint thus far in the state. Once completed, the Gateway project will illustrate to the greater community that recycled paint isn't just a raw concept but a quality alternative to virgin paint. From an application standpoint it will demonstrate that it's an industry-grade paint that can be purchased by contractors and used effectively.

A one-day paint drive collected more than 1,000 gallons of different color, gloss and quality paints from members of the Minnesota Painting and Wallpapering Employers Association. The paint was inspected, mixed, and tested by Hirshfield's Painting Mfg. 1,100 gallons of recycled paint will coat a majority of the Gateway interior walls. The only areas exempt from the paint are ceilings and doorframes, which require a different product. Success with the Gateway building will hopefully convince project coordinators at other University renovation and construction sites to use the recycled paint, as well.

24. Parts Cleaning

Department of Administration -- The Plant Management Division shares used cleaning solvent with the Travel Management Division to be reconditioned for future use.

Department of Corrections -- **MCF-FRB** – Recycled quarterly – cost of about $1,600 in FY 1999
MCF-FRB (MINNCOR) – We purchased and installed a lacquer thinner recycler in the vehicle refurbishing shop. We will continue using a recycler at a cost of $3,500. The savings in disposal costs are approximately $1,500 annually. This practice decreases the use of virgin (clean) thinner for spray gun cleaning.
MCF-LL – Cleaning solvents are recycled internally or by an outside vendor.
MCF-OPH –A recyclable parts cleaning process is used.

MCF-RW – This material is used in the automotive shop, collected in waste drums, and recycled.
MCF-SCL – Our parts washer uses a small amount of product, about 30 gallons/year, and it is disposed of as a hazardous waste at a cost of $200. This makes possible compliance with legislation and eliminates groundwater and soil contamination.
MCF-STW – MINNCOR – The cleaning solvents that we use are recycled in-house, or by our hazardous waste vendor, or used for fuels.
MCF-WR/ML – The facility purchased 5 parts washers during fiscal year 1999. This move was made to prevent the costs of leasing and the continuous pickup of solvent. The solvent in the new parts washers is filtered in the unit itself and can be used for an extended period of time before needing to be disposed. This move has been an economic benefit as well as an environmental one because of reduced hazardous waste generation.

Department of Human Services -- A contract vendor manages the parts cleaning solutions.

Metropolitan Airports Commission -- This program continues to be managed by a solvent parts-washing vendor. Recent changes to machines and service schedules have dramatically reduced the amount of waste solvent produced. In addition, MAC Maintenance (mechanical) is continually using more environmentally friendly solvents and have plans in the future to incorporate more solvent-free parts (aqueous) washers (with recirculating filters) into the system. Maintenance personnel would eventually like to eliminate solvent parts washers from the maintenance shop.

Metropolitan Council – Environmental Services -- There are over two dozen parts washers at MCES facilities, and approximately 720 gallons of solvent was recycled in 1998. The solvent is petroleum-based and is serviced by Safety-Kleen, Inc. as a hazardous waste largely due to its low flash point. To date, various experiments with alternative, non-hazardous solvents have not met with widespread user and regulatory acceptance. However, one facility, after review of its operational needs, discontinued use of the parts washer altogether. Trials with other parts cleaning options will continue. Carburetor cleaner is no longer in widespread use due to the increase in vehicles that are now fuel injected.

Department of Military Affairs -- Weapons cleaning has been a major issue with the Department of Military Affairs. There is a new weapons cleaning building that substitutes steam cleaning for the use of solvents. It will be able to clean weapons of sizes from rifles to cannons. The same principle operates in parts cleaners and small weapons. The department uses aqueous parts washers and steam cleaning.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Solvents are collected and stored prior to being picked up by an approved vender.

Ridgewater Community and Technical College -- Very little is used any more, but what is used is recycled through Safety Kleen service.

Southeast Technical College -- Parts cleaning is done using a Safety Kleen parts cleaning solution that requires only two to three changes per year compared to six in the past.

St. Cloud State University -- SCSU is experimenting with more environmentally friendly brake cleaner and parts washer fluids in the auto repair shop. The Art Department and print shop use a solvent-recycling service that provides them pollution prevention "WE CARE" ® training.

Department of Transportation -- Mn/DOT is actively researching substitute products and systems to reduce (by 90 percent or more) the amount of hazardous waste generated through parts washing in maintenance shops. Both petroleum and aqueous solvents and systems are being tested and evaluated. The systems currently being used and tested are petroleum solvents with a separate filtration system, petroleum solvent with a detachable filter, aqueous solvent with continuous in-line filtering, and a heated pressurized aqueous system (dishwasher type). More than 24 different solvents, soaps and systems are being evaluated. *See "29. Procurement, Materials management."*

University of Minnesota -- The University of Minnesota has an ongoing program of using parts cleaning services, such as Safety Kleen, which recycle the dirty solvent. Evaluation of more environmentally friendly parts cleaning products is being undertaken in individual shops. U of MN – Duluth Facilities Management switched from a solvent recycling service to a product (ZEP Z-142) that is non-flammable and is perpetually cleaned by a recalculating filter system. Filters periodically need to be disposed of but the solvent does not need to be shipped off site for recycling or disposal. They have been able to eliminate 120 gallons of solvent waste per year.

25. Personal Care

Department of Corrections -- No comments

Department of Human Services -- The St. Peter Regional Treatment Center's Diaper Project, a program of using washable under pads/diapers instead of disposables. This project continues to result in a ripple effect, which reduces the need for bed linen services, reduces the solid waste sent to the landfill, and provides cost savings per unit used. The program has expanded to include nearly all of the care units where disposable diapers had been previously used. St. Peter Regional Treatment Center has presented its program to other groups for application in their facilities.

Minnesota State Colleges and Universities:

Hennepin Technical College -- The college does not use personal care products.

Southeast Technical College -- Personal care products are used in the Cosmetology department. Students are taught proper usage and application methods. Material safety data sheets are kept on all products used. Past dated products are disposed of properly. Most can be sewered after receiving approval from our local wastewater official.

26. Pesticides, Fertilizers

Department of Administration -- The Plant Management Division follows pollution prevention practices during the planting and care of landscaping by its Grounds Services staff. The Materials Management Division has undertaken an extensive process change in the area of pest control services by moving to integrated pest management, a process to achieve long-term, environmentally sound pest suppression and prevention through the use of a wide variety of technological and management practices. The Plant Management Division participates in a Public Land Task Force addressing integrated pest management practices. The Materials Management Division and Resource Recovery Office coordinated with other state agencies to plan integrated pest management activities.

Department of Agriculture – The Agronomy /Plant Protection Division has ongoing projects that are instrumental in educating rural, suburban and urban Minnesota in the proper best management practices (BMP) of pesticide use and disposal. The Agronomy/Plant Protection Division received a MN GREAT! award this year for its participation in the WaterShed Partners, a coalition of 36 public, private, and non-profit organizations, for working collaboratively to develop and implement educational programs to reduce urban runoff in the metropolitan area.

The ongoing empty pesticide container and pesticide waste programs within the Agronomy/Plant Protection Division have educated many rural farmers on the best use and proper disposal of pesticides. The Sustainable Agriculture program is now in its 11th year of existence and is a good example of how farmers can learn alternative practices to pesticide applications by receiving grants to help them in becoming a sustainable farm. A copy of this year's Greenbook can be obtained from the Minnesota Department of Agriculture. The Agronomy Plant Protection information can also be obtained from the Minnesota Department of Agriculture's web page: www.mda.state.mn.us.

Department of Corrections -- **MCF-FRB** – We buy only what we use and contract with Plunkett's.
MCF-OPH –Purchasing is limited to only the amount that can be used. It is stored out of the weather to prevent any possible pollution through spillage or leaching.
MCF-RW – This facility uses fertilizers on the lawn once a year, approximately forty acres.
MCF-SCL – Our pesticide and fertilizers are applied only by trained personnel at an annual cost of $100. Trained personnel use less product and this also minimizes soil and water contamination.

Department of Human Services -- The St. Peter Regional Treatment Center's grounds crew continues to use adjusted application ratios for herbicides, pesticides, and insecticides. It has been found that the effective rates of application can be much less than the manufacturer's recommended ratios. In some cases, the manufacturer recommended application is as much as two times the effective application. Herbicide is applied during optimal weather and moisture conditions and unsightly weeds, such as dandelions, are targeted for control, eliminating broadcast applications.

Metropolitan Mosquito Control District - MMCD is committed to control materials that have low environmental impact and selectivity for target species. Control materials evaluations have shown that the pesticides selected by MMCD for use in controlling pest insects do not display any "hazardous" characteristics. By selecting control materials that rate high in environmental compatibility, MMCD has reduced the risk of environmental pollution and has eliminated significant costs associated with storing, transporting and disposing of hazardous wastes. As was reported in the last IPPAT report MMCD was testing laginex, a promising new biological mosquito control product based upon the fungal mosquito parasite Lagenidium. Lagenidium is totally specific to mosquitoes, meaning that it will not harm non-pest organisms in the environment. Lagenidium contains no toxic chemicals, preservatives or inert ingredients. Testing in 1998 and 1999 has shown laginex to be effective in the control of larval mosquitoes in wetland breeding sites. The District will continue efficacy tests of laginex over the next season and will decide at that time if laginex will be incorporated into the District program as a control agent for mosquito larvae.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC greenhouse uses "beneficials" as an alternative to pesticide use. This is also the case for landscaping, unless there is an infestation, when environmentally safe products are used, such as "Chem Lawn" which is provided through a vender. HTC is in the process of achieving a long-term environmentally sound pest suppression program through a variety of technological, environmental and management practices.

North Hennepin Community College -- All herbicides, pesticides, and fertilizer are applied by licensed contractors. Annual costs are $1,800 for herbicide; $1,200 for pesticide; $4,500 for fertilizer.

Ridgewater Community and Technical College -- Pesticides, herbicides, and fertilizer are applied by licensed trained employees. Broadleaf and perennial weeds control is only applied once a year in early fall. Fertilizer is only applied on areas around the building and football field. Crabgrass control is only applied in areas where there has been a problem. All containers are triple rinsed and returned to the once-a-year county pesticide container collection.

Southeast Technical College -- The college has reduced applications of pesticides and fertilizers from two to one per year, except for the lawn area by the buildings. A contractor who is a licensed applicator is currently doing this area. When the remaining stock of product is used up we plan to contract all of this work out to a licensed professional.

Bemidji State University (BSU) -- During fiscal year 1999 the college deferred application of herbicide and fertilizer on lawns around the single-parent family housing dormitory in response to concerns by residents about possible exposures to children. Future applications will be reviewed. A cost reduction of up to $350 may be realized; however, final billing has not yet been received. The practice would result in a reduction in the consequences associated with use of chemical herbicides.

Department of Transportation -- Mn/DOT uses tons of animal manure annually as a nutrient source in the compost treatment of petroleum contaminated soils. After these soils have been treated, the soil is used as topsoil amendment along Mn/DOT right-of-way. *See "31. Tanks."* Mn/DOT is researching biological control of various weeds as an alternative to herbicides used on roadside vegetation. Flea beetles are being used to control leafy spurge in the twin cities metropolitan area. Biological control will hopefully reduce or eliminate the use of some herbicides. Mn/DOT is researching biological control of rodents as an alternative to pesticides used along roadsides. American Kestrel nest boxes have been installed on Mn/DOT right of ways in the twin cities metropolitan area. The purpose is to provide habitat and encourage the American Kestrel "Sparrow Hawk" to nest along the right of way. Part of the Kestrels' diet is meadow voles. Meadow voles create numerous problems with roadside vegetation. Poisonous rodent baits have been used in the past with various successes. These nesting boxes will hopefully reduce or eliminate the use of such poisons.

University of Minnesota -- The University of Minnesota is a world leader in agriculture research and education, which includes extensive efforts in the development of and safe and environment-friendly use of pesticides and fertilizers. Special areas of expertise are integrated pest management (http://www.ipmworld.umn.edu) and sustainable agriculture (http://misa.umn.edu). The University's College of Agriculture, Food and Environmental Sciences (http://www.coafes.umn.edu/), Extension Services (http://www.extension.umn.edu/) and Biosystems and Agricultural Engineering (http://wwww.bae.umn.edu/) are major providers of training, research, and outreach services to Minnesota and the world in this area.

27. Policy Statement

Department of Administration -- The Department of Administration specifically addresses pollution prevention as a top priority of the Department of Administration. See Appendix C for the Department of Administration Policy on Environmental Materials Management (Exhibit 1) and the Minnesota Department of Administration Priorities for Environmental Materials Management (Exhibit 2). The Resource Recovery Office in the Plant Management Division encourages pollution prevention and promotes the preferred waste management practices contained in Minnesota Statutes, Section 155A.02, during the acquisition, use, maintenance, and discard of materials. The Plant Management Division's Mission Statement (see Exhibit 3 in Appendix C) encompasses pollution prevention and other environmental concepts.

The Plant Management Division revises and updates employee position descriptions as a continuous process, requiring each employee to be individually accountable for achieving environmental stewardship as a function of his/her job responsibilities. Employees are to follow state and federal requirements and shall identify opportunities to implement the following values:

- Conservation of energy and environmental resources
- Prevention of pollution
- Promotion and education
- Integration of environmental stewardship into all workplaces and services.

Department of Agriculture – In compliance with Executive Order 91-7, pollution prevention is a priority for the Minnesota Department of Agriculture. The Department's objective is to undertake activities to reduce the generation of hazardous waste and use of toxic solvents and pesticides. The primary goal is to prevent pollution at its source and to reduce waste and emissions that can have an adverse impact on the environment.

Department of Corrections -- Policy Statement - See attached policy statement in Appendix D.

Office of Environmental Assistance -- Pollution prevention means eliminating or reducing pollution at its source. This includes utilizing raw materials and other resources more efficiently, substituting benign substances for hazardous ones, and producing products without toxic constituents. Pollution prevention helps to protect human health, strengthen our economy, and preserve our environment.

The Minnesota Office of Environmental Assistance (OEA) gives priority consideration to pollution prevention in its programs and activities as required by Governor's Executive Order 91- 17. The OEA is committed to excellence and leadership in preventing waste and pollution and strives to be a model for other agencies and organizations. We believe that pollution prevention in our workplace will lead to healthier and more efficient employees, saving of public funds, and less waste introduced into the environment.

The OEA stresses the preventive approach as the preferred approach for environmental protection in its policy-making activities. In reports, testimony, and strategic planning, the OEA staff will promote pollution prevention as the top of the environmental protection hierarchy. Each member of the OEA staff is responsible for preventing pollution by reducing their own waste generation at work. Specifically, staff is directed to give consideration and preference to pollution prevention options when purchasing supplies and equipment, traveling to meetings, using equipment in the office, photocopying documents, and in ordering office furniture.

The OEA will demonstrate cost-effective alternatives that reduce all environmental impacts in its office and lease agreements. It will also work cooperatively with other tenants to promote the prevention approach building-wide. The OEA will also build partnerships with all stakeholders to promote the preventive approach to environmental protection. These stakeholders include other state agencies, local governments, businesses and business groups, schools and higher educational institutions, financial and economic development institutions, non-profit organizations and citizens.

In order to pursue and monitor this pollution prevention policy and as part of the OEA's participation in Minnesota Waste Wise, a coordinating team with representatives from each unit is established that will meet regularly to discuss and stimulate the increased implementation of pollution prevention activities at the OEA. This team will measure the effectiveness of its efforts and will meet with the OEA director at least quarterly for updates about the OEA's progress.

Department of Human Services -- The Department of Human Services is committed to protecting the environment. In keeping with this policy, our objective is to reduce waste at its source. We strive to minimize the adverse impact on the air, water and land through pollution prevention. By successfully preventing pollution at its source, we can achieve cost savings, increased operational efficiencies, improve the quality of our services and maintain a safe and healthful work place for our employees.

Metropolitan Airports Commission -- The Metropolitan Airports Commission (MAC) recognizes pollution prevention as an integral part of its services. The MAC's strategic plan reflects its commitment to environmental protection. The MAC is committed to providing excellence and leadership in protection of the environment. In keeping with this position, our objective is to reduce waste and emissions. The MAC strives to establish sound environmental strategies that lessen adverse environmental impacts on the natural environment and the surrounding communities. We encourage our tenants to do the same. The MAC promotes taking a proactive approach to environmental protection and supports cooperation with other regulatory agencies. The MAC is aware that meeting this commitment will require the cooperative efforts of its entire staff and tenants.

Metropolitan Council – Environmental Services -- The Metropolitan Council's Administrative Policies and Procedures, section/number 1-2a, is titled Environmental Sustainability. This section contains a sub-section with policies that are consistent with the Governor's Executive Order 99-4. Please refer to Attachment 1 in Appendix E.

Metropolitan Mosquito Control District -- The Metropolitan Mosquito Control District is committed to protecting the environment. It is the policy of the District to significantly reduce and whenever possible, eliminate the release of toxic pollutants and the generation of hazardous and other wastes. By successfully preventing pollution at its source, we can improve the quality of the environment we live in and maintain a safe healthy workplace for our employees. Environmental protection is everyone's responsibility.

The MMCD is committed to being a good neighbor and operate in strict compliance with federal, state, and local environmental laws. Meeting this commitment requires the cooperative effort of all MMCD employees. Technologies and methods that substitute non-hazardous materials and utilize other source reduction approaches will be given top priority for integration into MMCD operations

Department of Public Service (Commerce) -- The Department of Public Service considers protection of the environment to be a high priority. We provide leadership in developing, advocating and implementing equitable, cost-effective policies regarding energy, telecommunications and standards for weights and measures. In the area of energy policy, protection of the environment through reduction of pollution associated with traditional energy sources is a major goal of the Department. We are committed to lead, by example, through the reduction of energy use, the use of toxic pollutants, and the generation of hazardous waste in our own Department.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC specifically addresses pollution prevention as a top priority. The Safety Committee is considering developing a policy and procedure on recycling and trash management along with an awareness program and staff training.

North Hennepin Community College -- MacNeil Environmental contract

Ridgewater Community and Technical College -- In the past we had a contract with MacNeil Environmental and this past year we changed and now work with Anoka-Hennepin Technical College.

Southeast Technical College -- A policy does exist on recycling. Through recycling efforts the college reduced rubbish removal services from twice a week to once a week service mainly through recycling office paper and cardboard and increasing some dumpster sizes.

Bemidji State University (BSU) An environmental policy statement was adopted in 1991 and revised in 1998. If successfully implemented, the provisions of the policy should initiate a broad range of environmental benefits.

Department of Transportation -- Mn/DOT is committed to excellence and leadership in protecting the environment. In keeping with this policy, our objective is to reduce waste and emissions. We strive to minimize adverse impact on the air, water, and land through excellence in waste stream management. By preventing wastes, we can achieve better protection of the environment, a safe and healthy work place for employees, and more efficient operations. Mn/DOT's environmental guidelines include the following:

Preventing pollution by reducing and eliminating the generation of waste and emissions at the source is a prime consideration in research, design, and field operations. Mn/DOT is committed to identifying and implementing pollution prevention opportunities by involving all employees. These opportunities include: new methods, technologies, and product substitution.

Mn/DOT is committed to developing a waste stream management system that proactively addresses the wastes that are unavoidably produced in our operations. Environmental protection is everyone's responsibility and is highly valued at all levels within Mn/DOT. Mn/DOT seeks to demonstrate its commitment by adhering to all environmental regulations. We promote cooperation and coordination between industry, government, and the public toward the shared goal of preventing pollution at its source.

University of Minnesota -- See Attachment in Appendix E.

28. Printing

Department of Administration -- The Materials Management Division includes the following statement in all solicitations for printing:

> **Environmental Health and Safety Requirements:**
>
> By responding to this bid, the company certifies that it is in compliance with applicable state and federal laws related to environmental health and safety. If you have any questions, you should contact the Minnesota Technical Assistance Program (651.627.1910 or 800.247.0015). They can also provide a compliance checklist, which outlines federal, state, and local environmental regulations affecting printers in Minnesota.

Communications Media offers customers Launch! Software that allows them to send electronic files (a 1997 Minnesota Great! Award-winning project).

Communications Media uses equipment to reduce waste including a water flow meter to reduce water use at PrintComm and silver waste recovery equipment in processing areas at both PrintComm and silver waste recovery equipment in processing areas at both PrintComm and DocuComm. Communications Media participates in the Great Printers Project and has a goal to complete experimentation of "no VOC" replacements for litho wash and deglazer.

The Minnesota Office of Citizenship and Volunteer Services continues to use soy-based inks for its entire stationer, brochures.

Department of Corrections -- **MCF-OPH** –Industry's printing program consists of lettering on vinyl. Only the amount of ink to be used is distributed daily and strictly accounted for by staff.
MCF-RW – Photo fixer is collected and recycled – approximately 20 gallons/year.
MCF-SCL – Our print shop personnel recycle and minimize the use of paper products. This practice uses less paper products, and soy inks are more environmentally friendly.
MCF-WR/ML – MINNCOR Industries has a print shop at Moose Lake. There have been no changes in this shop area in regards to waste. The planned activities for fiscal year 2000 will be the disposal of photo fixer silver solution of about 30 gallons.

Office of Environmental Assistance -- As part of its internal practices, the OEA uses recycled uncoated paper containing at least 20 percent and usually 100 percent post-consumer fiber. Whenever possible, the OEA chooses paper stock manufactured using no chlorine or chlorine derivatives and specifies soy-based ink for all printing jobs. The OEA is helping the Department of Administration improve its environmental specifications for print jobs.

Metropolitan Airports Commission -- The MAC continues to utilize companies that use soy-based inks and environmentally friendly products.

Metropolitan Council – Environmental Services -- MCES staff have attended a workshop sponsored by the Minnesota Environmental Initiative (MEI) on the "Great Printers Project". A "Great Printer" makes a voluntary commitment to comply with environmental regulations and to practice pollution prevention. Vendors who are participants in the project are always considered when a bid request is going out.

Metropolitan Mosquito Control District -- The District currently asks printing vendors to use paper that has high post-consumer content and is chlorine-free for all outside printing projects. The District also asks for environmentally safe inks for District brochures, informational pamphlets, fact sheets and yearly reports. During fiscal year 1999 MMCD specifically targeted Minnesota Great Printers for printing projects that were done by commercial printing vendors.

Pollution Control Agency -- MPCA support staff developed an in-house process to print business cards on color printers or standard laser printers with black ink versus buying a box of 500 cards from the state contract vendor each time a staff person changes their position or job title. A template was created and detailed instructions were provided for support staff. This option reduced the use of paper and saved the agency a significant amount of money after the reorganization was complete, since all staff needed new business cards. In 1999, the agency decided to replace a majority of its mid-size photocopiers with four OCE photocopiers that greatly enhanced service, productivity and technology. The OCE machines have been networked to the PC's of key users. Savings have resulted from lower overage charges and reducing the amount of paper we use by forwarding print jobs directly to the copier. This new technology saves paper through two-sided printing and fewer jam occurrences.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC uses electronic files whenever possible. This reduces waste. The use of soy-based inks is being explored. Double-sided copies of paper are promoted where it is necessary to have a hard copy. The print shop is planning to centrifuge the ink rags and extract ink for waste management disposal, and then plans to have the rags washed for reuse. A search is being done to identify a non-hazardous solvent in the printing process.

North Hennepin Community College -- Photocopying is done on-site. Printing is usually contracted for off-site.

Southeast Technical College -- The college does not have a printing department; however, staff are encouraged to make double-sided copies when possible.

St. Cloud State University -- SCSU recycles books, directories, and newsprint.

Department of Transportation -- Mn/DOT sign shops have changed from inks containing heavy metals to heavy- metal-free inks. This eliminated a hazardous waste stream. Mn/DOT sign shops have changed from a hazardous screen wash (MEK) to a non-hazardous screen wash. This eliminated a hazardous waste stream. The elimination of two hazardous waste streams has saved thousands of dollars annually in disposal costs. Furthermore, potential hundreds of thousands of dollars have been saved through the elimination of the environmental liability associated with the generation, handling and disposal of hazardous waste.

University of Minnesota -- The University of Minnesota Printing Services, Twin Cities Campus, has established several tactics to prevent pollution:

- Installed a Devek system, which allows recycling and reuse of developer in their film processing. The developer can be used four times instead of the single use in the past.
- Installed an X Rite silver recovery machine which recovers silver from photo fixer. The department recovers 28 pounds of silver annually.
- Migrated some press work to Xerox machines. Use of toner type process eliminates ink and press-wash wastes.

29. Procurement

Department of Administration -- The Materials Management Division has established numerous contracts that represent efforts to encourage sustainability in state government daily activities. These contracts include: hazardous waste management, pesticide collection, hazardous spill emergency response, used oil sorbent and filter management, fluorescent and HID lamp recycling, dairy (mercury) manometer management, and waste paper sales. The Materials Management Division has developed environmentally responsible products and services contracts estimated in excess of $39 million per year. (See Exhibit 4, Environmentally Responsible Products and Services.)

Department of Agriculture – The Laboratory Services Division continues to utilize the 20-liter nowpack container system for methylene chloride. This system has helped reduce glass bottles that were placed in the local landfills. The system also helps reduce the exposure of the analysts to methylene chloride fumes. Laboratory purchasing personnel continue to work with senior staff to find other alternatives than glass containers for chemicals that are purchased in large quantities.

Department of Corrections -- **MCF-OPH** – Staff have been urged to utilize the safest, least pollution product available, not only for protection of the environment, but also for safety of staff and inmates. Waste is reduced by use of good purchasing techniques.
MCF-Stillwater (STW) MINNCOR – In general, as part of our annual hazardous waste training, we discuss reducing our generation of hazardous waste by being aware and careful about the type and quantities of products we purchase. We also ask that all staff keep reviewing our manufacturing processes and make suggestions about new processes and products that will help improve efficiency and reduce hazardous waste generation.

Office of Environmental Assistance -- The OEA strives to purchase environmental products whenever possible. Since the creation of its market development program, the OEA has promoted buying recycled products as a means of supporting the recycling infrastructure. Over the years, OEA staff has held "Buy Recycled" trade shows and conferences, developed fact sheets, trained state purchasers about recycled content products, and much more. 1999 efforts include an expanded procurement focus that continues to include other environmental characteristics, such as toxicity reduction, durability, recylability, energy efficiency, etc. This is referred to as environmentally preferable purchasing (EPP). OEA is working closely with the Department of Administration's acquisition specialists to incorporate environmental specifications into several state purchasing contracts.

Several on-going projects are:

- The OEA is working with the Dept. of Administration to encourage the use of reusable crates, rather than disposable boxes, when state agencies contract with professional movers.
- The OEA is working with architects to encourage the use of resource efficient materials and practices in new state buildings under construction.
- The OEA is working with the Dept. of Administration to promote environmental purchases and building practices in state-leased buildings.
- Through a grant to the Institute for Local Self-Reliance, the OEA continues to help to promote environmentally preferable chemicals via the Internet.
- When appropriate, the OEA documents and shares its results with other states as well as MN businesses, schools, and general consumers.
- The OEA promotes environmentally preferable contracts to state agencies and local political subdivisions. The OEA has made procurement information available via its website and links to the Dept. of Administration's site.
- The OEA is helping the Department of Administration update the Purchasers Training Manual and prepare a workshop to include topics on environmental purchasing.

- OEA's website has been expanded to include information to help local purchasers buy recycled products, and OEA is working with the metro counties to develop a resource for state, local, and school purchasers to help them identify a variety of environmental products.
- The OEA plans to continue to work closely with the Department of Administration to incorporate environmental specifications into other state contracts, such as the contracts for pest control, personal computers, and paint and to add recycled plastic decking to the state contract for piers and docks.
- The MPCA and OEA are working jointly to develop native landscaping in our grounds areas that require less water and pesticide application.

Metropolitan Airports Commission -- Whenever possible the MAC Purchasing Department incorporates requirements for the use of environmentally sound products when procuring goods and materials for the airports. In addition, MSDSs are reviewed to reduce the amounts of environmentally detrimental product usage. Preventing pollution by reducing and eliminating the generation of waste and emissions at the source is a prime consideration.

Metropolitan Council – Environmental Services -- Procurement and materials management is essential to the beginning and sustaining of a pollution prevention program. In previous sections of this report, various efforts have been described in the purchasing of recycled and recyclable materials and in product substitutions. Recycling of paper, metal cans, and clear glass containers occurs at all MCES locations. At the larger facilities plastic and metal drums, scrap metal, wood pallets, cardboard, and packing materials are reused as much as possible and eventually recycled. A new materials management information system is being installed which has the capabilities for "screening" purchases for pollution prevention considerations such as environmental and health rankings and recyclability and recycled-content material.

Metropolitan Mosquito Control District -- The Recycling and Hazardous Materials Team reviews products used by MMCD for user/environmental friendliness. The team locates and purchases users/environmentally friendly replacement products for products determined to be unsuitable for use by MMCD staff. MMCD is committed to "Zero Generation" of hazardous waste or toxic chemicals targeted for reduction in the Minnesota-50 Project. The District's intent is not to purchase any material which contains any of the ingredients listed by the United States Environmental Protection Agency (EPA) as "Inerts of Toxicological Concern" (List 1), or "Potentially Toxic Inerts/ High Priority for Testing" (List 2). As reported in last year's IPPAT report, the District negotiated with primary vendors who supply the District with BTI for material packaging that is recyclable or returnable. BTI is a natural soil bacteria in a dry granule form that is used for the control of mosquito larvae in wetland breeding sites. In an average year the District will dispose of 20,000 paper Bti bags (15,000 lbs.) which have a plastic or metallic paper lining. This lining makes it impossible to recycle the bags with a recycler so the bags are incinerated or land filled.

The District's primary vendor of Bti was finally able to develop a recyclable poly bag that would satisfy packaging, short term storage and transportation problems and was made from a recyclable plastic. However the District has been unable to find recyclers who will process the poly bags for recycling. There is reluctance on the part of the recyclers to accept the bags since they contained a pesticide. For the time being the District is forced to landfill or incinerate the poly bags until a recycler is found.

Pollution Control Agency -- The Central Office has established a landscaping committee to create a natural garden area in the front of our building in place of mowed grass. The garden will be planted this October and next spring. This garden will meet several goals: less watering, less pesticides, colorful/attractive seasonal entrance, and an extra benefit for wildlife (butterflies, birds, insects). The new Brainerd Office will be reviewing and approving all exterior landscaping plans. They have requested that native, drought-tolerant landscape plants be used around the building. The Central Office is starting an extensive composting project in September 1999. This project will allow all compostable materials to be collected separately from non-compostables and sent to SKB in Rosemount. The compostable material will include cafeteria food waste, napkins, and maybe paper plates, cups and utensils.

The paper waste from bathrooms and office areas will also be composted. It is estimated that this new composting option may remove up to 80 percent of our garbage that is currently disposed as solid waste. In 1998, MPCA recovered the following types and amounts of materials for recycling or reuse:

- Laser Cartridges – 910 Lbs.
- Typewriter Ribbons – 50 Lbs.
- Appliance Batteries – 600 Lbs.
- Compost/Food Waste from all floors – 15,600 Lbs.
- Fluorescent Lamps – 15,000 Lbs.
- Packing Peanuts - 150 Lbs.
- Comb Binders – 30 Lbs.
- 3-Ring Binders (150 boxes) – 6,000 Lbs.
- TYVEK Envelopes – 360 Lbs.
- Plastic Transparencies – 120 Lbs.
- Dry-Cell Batteries – 250 Lbs.

The new Brainerd Office is recycling all compostable food wastes into a worm farm!

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC practices the process of competitive bidding and follows state contracts whenever possible. Materials management practices involve relocating products and equipment to other departments, trading, selling at public auction or donating items, rather than disposing of materials.

Ridgewater Community and Technical College -- Most of our products are purchased through a competitive bidding process following state contracts when possible. We are always looking for products that are environmentally friendly. Procurement of products is done through a competitive bidding process following state contracts when possible. Materials management practices involve relocating products and equipment to other departments, trading, selling at public sale when possible rather than disposing of materials.

St. Cloud State University -- SCSU uses toilet paper and towels of 100 percent total recycled fiber content and 90+ percent post-consumer fiber content.

Department of Transportation -- Mn/DOT has made available to all Counties and Cities that use Mn/DOT's striping paint contract, metal free water based pavement marking/striping paint. This provides for pavement marking and striping operations to be regulatory non-hazardous by eliminating all lead, chrome, and toluene. Mn/DOT has developed and implemented a strategy to expedite the process of eliminating and/or reducing waste streams. This strategy is designed for involvement and input from all interested parties, including other governmental agencies, up front. It is a nine-step process that ends with a report that includes a full circle cost analysis, product(s) recommendation, and in some cases vendor contracts. The report aids Mn/DOT buyers in making purchasing decisions that are environmentally and economically sound. Mn/DOT has completed two studies/reports (sorbents and asphalt release agents). A study on parts washer solvents and systems is continuing. During fiscal year 1999 Mn/DOT has worked with the Department of Administration to design a program that would allow Mn/DOT, and any other state agency, to run a report giving the total volume of a commodity purchased. This will aid in calculating cost saves after implementing a pollution prevention/waste minimization project. A base line of dollars spent on hazardous waste disposal and recycling for fiscal years 1996, 1997, 1998 and 1999 has been compiled.

The following shows a decrease in the generation of hazardous waste through the decrease in annual dollars spent on hazardous waste disposal:

- Fiscal year 1996 dollars spent, $214,302.95
- Fiscal year 1997 dollars spent, $204,270.69
- Fiscal year 1998 dollars spent, $147,215.06
- Fiscal year 1999 dollars spent, $144,446.36

Mn/DOT saved $10,032.26 in fiscal year 1997, $57,055.63 in fiscal year 1998, and $2,768.70 in fiscal year 1999 through various pollution prevention projects. The next step is to break down the total dollars spent on hazardous waste disposal to dollars spent on disposal of a specific waste. This will allow the success of a specific pollution prevention or waste minimization project to be measured.

University of Minnesota -- The University of Minnesota Waste Abatement Committee has made a concerted effort to bring "Green" building concepts to the University. Facilities Management has agreed to a pilot project that will use a Sustainable Design Guide and Rating System to guide the specifications, bidding and construction of the University's planned Studio Arts Building. An interdisciplinary team created the Sustainable Design Guide and Rating System for the medical, institutional and office buildings constructed by Hennepin County, Minnesota. The purpose of the system is to encourage environmentally responsible design practices by rating facility performance in areas like energy efficiency, indoor air quality and waste management. Hennepin County Property Services and the County's Environmental Management Division worked with team of University researchers from the College of Architecture and Landscape Architecture and other advisors to develop the system. The system provides approximately 45 strategies that are organized according to six environmental topics:

Site: The site-related goals of the system are to maintain and restore the ecology of the site, respond to the microclimate to improve energy efficiency and comfort, utilize water saving and low-maintenance native plant materials, protect water quality and use biological systems to treat waste water.

Water: The water-related goals, which focus on building water consumption, are to reduce potable water consumption in the building fixture and the cooling tower design and use graywater systems to reuse water for site irrigation.

Energy: The primary goal is to reduce energy consumption for heating, cooling, lighting, and other equipment and systems. A related goal is to use energy sources that are renewable and that have low environmental impacts (i.e. lower impact on air pollution or global warming).

Indoor Air Quality: Providing a healthy indoor environment with good air quality is one important goal.

Human Factors: Indoor spaces must be appropriately designed to enhance the quality of the thermal, acoustical and visual environments (including lighting and daylighting).

Materials: Goals of the system are to reduce the consumption of virgin materials especially from nonrenewable sources, and to select materials that are durable, manufactured locally, have low environmental impacts in their manufacturing process, and contribute to a healthy indoor environment.

Waste: Waste-related goals include the reduction and recycling of waste during construction as well as during the operating life of the building. Also, hazardous waste must be reduced and disposed of properly. A strategic design goal of the system is to reduce demolition waste by designing buildings to facilitate building disassembly and adaptability.

The strategies are phrased to achieve a specific design solution or practice, such as "Use Recycled Content and Building Materials." To integrate environmentally responsible design easily and effectively into the building process, it became important not just to indicate what to do, but what actions to take during each step of the process. Instead of a list of strategies, the system is organized into a matrix. Within each strategy are series of actions organized by design phases and a performance indicator for scoring. (See http://www.research.cala.umn.edu/brg/sustain.html).

30. Remanufactured Parts

Department of Administration -- The Materials Management Division specifies remanufactured automotive products. The Materials Management Division has developed contracts for remanufactured automotive products for state agencies, which included diesel engines, transmission, alternators, and starters. The Materials Management Division has a contract for refurbished modular furniture that allows state agencies and Cooperative Purchasing Venture members to purchase refurbished products rather than new. The Materials Management Division has created contracts with MINNCOR for furniture refinishing, reupholstering, and refurbishing.

Department of Corrections -- **Thistledew Camp (TC)** – We use remanufactured parts when possible.

Department of Human Services -- Copier toner cartridges are being returned to the vendor for reuse.

Metropolitan Airports Commission -- MAC maintenance uses remanufactured starters and alternators and sends other parts out for rebuilding whenever it is a suitable alternative to new parts.

Pollution Control Agency -- The new Brainerd Office is working with Deconstruction Services in Minneapolis to incorporate recycled building materials into the new building.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC uses mostly (not the sole source however) remanufactured printer cartridges, which are 50 percent of the cost of the new ones. Maintenance is done on printers and carpet is recycled.

Southeast Technical College -- Remanufactured parts are used when possible by our Auto Mechanic technicians and maintenance departments.

Bemidji State University (BSU) -- Remanufactured printer cartridges continue to be used. Remanufactured printer cartridges are stocked as the primary replacement for campus printing machines. The use of remanufactured printer cartridges will continue. Remanufactured printer cartridges are approximately 30-50 percent less than the cost of new cartridges and result in reduced waste generation and less demand on energy and resources used to produce virgin material. This activity is expected to reduce environmental costs.

St. Cloud State University -- SCSU uses remanufactured photocopier cartridges.

31. Tanks

Department of Administration -- The Plant Management Division removed all known underground fuel storage tanks. Above-ground storage tanks were installed in all but one location. The remaining tank will be installed by January 1, 2000.

Department of Corrections -- **MCF-FRB** – We have tanks with electronic leak detection.

MCF-OPH – The underground diesel tank contents are checked monthly to determine level and ensure there is no leakage. During fiscal year 1999 the tank was excavated and overflow and spill protection was installed and the existing cathodic protection tested. OPH has been working with PEER Consultants on this matter.
MCF-RW – This facility has removed all underground storage tanks and one aboveground tank used for heating oil. We currently have two inside storage tanks for #2 heating fuel.
MCF-SCL – We have removed a number of underground and aboveground tanks. All tanks are currently reported according to MPCA requirements. The cost is minimal and the benefit is a reduced risk of oil and fuel spills that would lead to groundwater and soil contamination.
Thistledew Camp (TC) – We have our tanks checked.
MCF-WR/ML – The facility installed four new storage tanks during fiscal year 1999 as a requirement of MPCA. They consist of one gasoline, 2 heating oil, and one standby fuel tank.

Department of Human Services -- All of the Regional Treatment Centers' storage tanks are in compliance with the Minnesota Pollution Control's 1998 Tank regulations.

Metropolitan Airports Commission -- To comply with federal regulations, the MAC has removed, replaced or upgraded all MAC owned and operated regulated underground storage tanks. This process met the 1998 deadline. MAC will eliminate tanks as they become obsolete or redundant. Reliever airports are up to date.

Metropolitan Council – Environmental Services -- December 22, 1998, is the regulatory deadline for a phased-in ten-year national program to upgrade existing underground storage tanks (UST), remove them, or replace them with new tanks. Over this period of time, MCES has done all three options with 40 UST's removed and 30 remaining in place and upgraded as needed with state-of-the-art measures for leak detection, spill and overfill prevention, and corrosion protection. Tanks that were removed mainly have been replaced with smaller aboveground tanks (AST). These are more easily observed for releases and represent a reassessment of true stand-by energy needs which were over-estimated during the petroleum embargoes and energy "shortages" of the 1970s.

Department of Public Service (Commerce) -- The Weights and Measures Division distributes a pamphlet to educate storage tank owners on the proper maintenance of petroleum storage. In the past, approximately 400 tanks a year had to be emptied due to contamination. The material was then treated as hazardous waste.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Underground tanks are monitored at all times. Above the ground tanks are inspected for leaks one time a week.

North Hennepin Community College -- 10,000 gallon #2 diesel fuel in-ground tank (1992).

Ridgewater Community and Technical College -- We have replaced our underground tanks with new underground double-wall fiberglass tanks that are monitored by a TLS-3001 UST interstitial leak sensing system (fuel oil). We have above-ground fuel oil tank that is visually monitored. We installed a 600 gallon diesel aboveground tank that is UL-142 double-wall inner tank, providing triple containment, which is also monitored.

Southeast Technical College -- A new underground fuel oil tank with electronic monitoring was installed at the Winona main campus in 1993 meeting all current requirements. An underground used oil storage tank was also removed at that time. Now used oil is stored in 55-gallon drums with a secondary container for spill control. We are still waiting for funding approval to remove and replace the tank at the Red Wing Campus.

St. Cloud State University -- Only a single unused UST remains on campus. It is empty and below the basement floor of an occupied building.

Department of Transportation -- Salt brine tanks are used to produce and store salt brine. Currently, salt brine productions systems are of double-walled construction. This greatly reduces the possibility of a release from the system. Mn/DOT fueling systems are comprised of double-walled underground or aboveground petroleum tanks and pipes. Many underground storage tanks that were not needed have been taken out of service and removed. By either replacing or removing outdated single walled underground storage tanks the potential for a petroleum release to the ground or groundwater is greatly reduced. Furthermore, the underground petroleum storage tanks are equipped with leak detection, spill prevention and overfill prevention equipment. Mn/DOT uses tons of animal manure annually as a nutrient source in the compost treatment of petroleum contaminated soils (from leaky underground storage tanks). After these soils have been treated, the soil is used as topsoil amendment along Mn/DOT right-of-way. Initial costs are high. However, Mn/DOT expects to see reduction in future cleanup costs as a result of decreased petroleum release incidents. Also, up to 90 percent of the cost incurred in investigating petroleum release sites are reimbursable through the Minnesota Petrofund. As an environmental benefit, Mn/DOT has developed a technique (Bio-mound: compost treatment) which not only cleans petroleum-contaminated soil, but also provides a reusable material.

32. Technical Support

Department of Corrections -- **MCF-OPH** – MnTAP and Washington Co. HELM are consulted whenever a questionable waste is to be disposed of to ensure proper procedures are used. The safety officer works closely with our HELM staff person in discussing and disposing of any unusual waste. **MCF-SCL** – We have used MNTAP and outside vendors for testing, etc., at a cost of $2,000 annually.

Office of Environmental Assistance -- The Minnesota Technical Assistance Program (MnTAP) helps industrial service and manufacturing businesses prevent pollution and manage waste properly. Rather than focus solely on end-of-pipe treatment or control solutions MnTAP helps Minnesota companies reduce or prevent—at the source—the amount of waste they generate and find alternatives to using hazardous materials. By implementing waste reduction techniques, Minnesota companies can achieve or go beyond compliance with environmental regulations, reduce their disposal and raw material costs, and make conditions healthier and safer for employees. MnTAP works not only with businesses and generators of waste, but also with business organizations such as trade associations, local governments, and chambers of commerce that themselves provide assistance or a service to businesses. MnTAP provides this tailored assistance in a number of ways: telephone assistance, site visits, student interns, materials exchange, educational and informational resources, and seminars and workshops. During fiscal year 1999, MnTAP responded to almost 1500 calls (33 percent of these specific to materials exchange) requesting pollution prevention and waste management information, conducted 121 site visits to businesses, and delivered 84 seminars. In addition, during the summer of 1998 MnTAP placed 7 interns in companies which resulted in a projected reduction of 103,000 pounds of waste and emissions and 215 million gallons of water with a projected cost savings of over $362,000.

Materials exchange activities (with support from the Solid Waste Management Coordinating Board) exchanged 251,355 pounds (127 tons) of hazardous and solid waste, and saved businesses $145,444 in avoided purchase and disposal costs. Finally, MnTAP staff focused outreach efforts on a number of audiences including paint stripping, adhesive users, food processors (primarily dairy), wastewater treatment plant operators (and their industrial users), and printers through the Great Printers Project.

The OEA provides technical assistance to counties in solid waste management planning and reporting on progress in achieving source reduction and recycling goals. The OEA revised the SCORE Source Reduction Checklist, a list of strategies and programs that counties can implement to reduce waste.

Counties can receive credit towards their recycling goals for implementing activities on the checklist. The checklist now lists over 40 different strategies and programs to reduce waste at the local level. It is used as a planning tool in county solid waste management planning. The OEA Source Reduction Team has begun to work closely with county planners to plan and implement source reduction programs. The Source Reduction Team plans to focus on county planning in 1999.

The EPA awarded a $60,000 federal grant to the OEA to increase source reduction technical assistance. The materials targeted by the grant include: food waste, old corrugated containers, office paper and wood waste. The project, entitled the "Source Reduction Challenge," focused on the development of eight material specific fact sheets and an office paper reduction kit, a direct mailing to over 10,000 businesses, and technical assistance as requested. The grant also researched the use of economic indicators to measure source reduction activity and conducted a food waste generation survey to identify opportunities to reduce food waste in the grocer, restaurant, and institutional setting. The council "Counties and Cities Involved in Source Reduction and Recycling" (CISRR), the Materials Exchange Alliance and Minnesota Waste Wise (MWW) meets every other month (six times a year) at various locations throughout Minnesota. Each meeting focuses on new topics and provides opportunities for networking and assistance. All local government staff (cities, counties and districts) are invited and encouraged to attend all six meetings. The meetings focus on identifying and discussing the:

- Source reduction, reuse and recycling opportunities.
- Regional recycling markets.
- Opportunities that exist to exchange materials between businesses and other organizations in that region and efforts to document the exchange activity.
- Opportunities for counties to partner with MWW to identify businesses in their area that are interested in source reduction, reuse and recycling.
- Opportunities and challenges that exist for county staff that are serving as technical team members in partnership with MWW.
- Site tours of MWW member companies, Governor's award winners and MWW LEADER award winners (as allowed) to view source reduction, reuse and recycling in action.

The OEA continues to publish the CISRR Newsletter. The Newsletter appears three times a year. The newsletter provides highlights from CISRR meetings and also includes materials exchange, Waste Wise, and county updates.

In 1996, the OEA and ERC were delegated responsibility for administering the Pollution Prevention Progress Report (Pollution PreventionPR). The ERC collects the forms from reporting facilities and works with the OEA to review them for completeness. The OEA uses the Pollution PreventionPR along with the Toxic Release Inventory Form R reports to analyze pollution prevention trends, determine success stories, and establish targets for technical (in conjunction with MnTAP) and financial assistance efforts. A new tool incorporated into pollution prevention analysis during FY97 was the inclusion of toxicity data for the chemicals reported through the Form R and Pollution PreventionPR. This allows the OEA to perform analysis on not only the volume of wastes being generated, but also to consider the hazard potential of the waste streams as well.

Metropolitan Airports Commission -- The Environment Department provides technical support to all MAC offices/divisions as well as airport tenants, whenever possible. Assistance is through phone calls, regulatory liaison, informational meetings and resources. These assist the tenants in recognizing and understanding their obligations to the regulatory agencies.

Metropolitan Council – Environmental Services -- In its participation with IPPAT, MCES is part of an information network that is very useful in the pollution prevention support offered to public agencies. As a regulatory agency, MCES is active in pollution prevention technical support through the IWS. This section continues to promote pollution prevention to its more than 800 permitted industrial users.

During on-site inspections, IWS staff regularly discusses pollution prevention issues and point out process areas where pollution prevention would result in waste reduction. Although MCES collects fees based on volumes of wastewater through its Service Availability Charge (SAC), wastewater reduction and cost-savings are encouraged for industrial users. In 1997, a database to track pollution prevention activities by industries was created and a specific newsletter for industries is being planned. Specific examples of these efforts are that when permit renewal notices are sent out, there is a written recommendation that the permittee contact MnTAP for assistance in reducing wastewater volumes and address any other pollution prevention concerns. Work on mercury reduction continues with the Minnesota Dental Association in the distribution of recycling fact sheets and the evaluation of amalgam separation equipment. Along with the MnOEA, IWS distributed a summary report to industrial users on chemical impurities in chemicals. Possible contaminants are mercury, arsenic, cadmium, chromium, copper, lead, nickel, zinc, molybdenum, and phosphorous.

In 1992, IWS received one of five nationwide grants for promoting pollution prevention at publicly owned treatment works (POTWs). With matching funds from MCES, a number of programs were created to train public officials and industries, survey system users, initiate on-site technical assistance, and promote interagency coordination in pollution prevention. Twenty-nine permittees volunteered for the Industrial Pollution Prevention Participation Program (I4P) and wrote and implemented "Model Plans" for pollution prevention. For more than two years, the Pollution Prevention Advisory Committee (PPAC) brought together representatives of industry, communities, and citizen groups on a bimonthly basis to be updated on the grant program and to advise in its direction. The IWS established a new Pollution Prevention Team in 1997. The purpose of the team is to "initiate, support, integrate and promote pollution prevention through education, assistance, and partnering". This will result in a reduction of toxics, conventional loadings, and discharge volumes to the collection and treatment system. So far, the Pollution Prevention Team has designed and purchased a new pollution prevention display, is developing a new educational pollution prevention brochure for households, and has registered as a member in the National Pollution Prevention Roundtable. Goals of the team include establishing staff experts for defined industries and targeting dental and medical clinics for pollution prevention efforts.

The IWS has participated in national, regional, and local pollution prevention conferences and has cooperated with Wakota CAER (Community Awareness and Emergency Response) and MnTAP (Minnesota Technical Assistance Program) in sharing of information and public displays. An intranet site is in place for the Environmental Planning and Evaluation Department (EPE) within MCES which includes "Pollution Prevention Pages" to promote pollution prevention and encourage new ideas. Last, but not least, at a departmental meeting, the IWS distributed fortune cookies with customized pollution prevention bits of wisdom on the inside.

Minnesota State Colleges and Universities:

Hennepin Technical College -- Various venders and consultants are used for technical support. Some of these are OEA, Department of Administration, EAP, PCA, other Minnesota State Colleges and Technical Colleges. Additionally, we use the services of our Customized Training Department at the Hopkins site; DOER Health and Safety Unit had been used for Industrial Hygiene issues and also for training. The Hennepin County Sheriff's Department has been helpful for training and services as well as the local fire department and local hospital or EMS unit. College faculty and instructors and staff have also been a good resource.

North Hennepin Community College -- We received Right-to-Know training through MacNeil Environmental.

Ridgewater Community and Technical College -- We work with all state agencies, OSHA, MPCA, Minnesota Department of Labor and Industry, Minnesota Department of Employee' Relations safety and Industrial Hygiene Unit and also Anoka-Hennepin Technical College.

Southeast Technical College -- Technical support is provided through MnTAP, MPCA, and other state agencies as needed.

Department of Transportation -- Mn/DOT's Waste Minimization reports are available to all governmental agencies as well as private companies. Mn/DOT has received numerous requests for the Waste Minimization Report on Sorbents from small and large private companies as well as other state government agencies. *See "1. Absorbents" And "29. Procurement, Materials management."* Mn/DOT has a statewide Waste Management Team (25 staff) that meet quarterly to discuss waste management issues such as waste minimization, pollution prevention; hazardous, solid and problem waste; air quality and water quality issues. This group actively integrates waste minimization and pollution prevention into all of the Department's functions. Mn/DOT has developed a waste management procedure poster. This poster incorporates general waste minimization techniques for each hazardous or problem waste generated. These posters will be distributed and posted at all Mn/DOT facilities and are available to any state agency or local municipality. Mn/DOT has dedicated the equivalent of one and a half full-time positions to study, coordinate, and evaluate pollution prevention opportunities within Mn/DOT. The key task of these positions is to research and evaluate new products and/or procedures as they relate to Mn/DOT and recommend changes to existing products and/or procedures when they prove to be more effective from an environmental, economical, and/or regulatory standpoint. Mn/DOT publishes several environmentally focused newsletters (*See "11. Education, Communication, & Training"*): Mn/DOT produced a Bio-mound training video to aid in the construction of compost piles to treat petroleum-contaminated soil. *See "26. Pesticides, Fertilizers" "31. Tanks (storage)."* Mn/DOT conducts workshops to assist staff in complying with federal and state regulations associated with aboveground and underground storage tank systems.

33. Tires

Department of Administration -- The Materials Management Division has developed contracts for tire recovery and for retread tires that use old tire casings.

Department of Corrections -- **MCF-OPH** –Tires are recycled at the vendors.
MCF-RW – Used tires are disposed of with the City of Red Wing Incinerator Center.
MCF-SCL – Tires are recycled. The cost is $100 annually and the benefit is reduced landfill costs and the reuse of the rubber in the tires.
Thistledew Camp (TC) – We take tires to the Bray Lake Dump Sight for disposal.
MCF-WR/ML – The facility made a shipment of used tires during fiscal year 1999. The shipment consisted of 55 tires, ranging from small vehicle to heavy truck tires. A vendor out of the cities picked up the tires and the tires were chipped and burned for energy recovery by NSP.

Metropolitan Airports Commission -- All vehicle and heavy equipment tires are transported to and recycled by a permitted facility.

Metropolitan Council – Environmental Services -- When not exchanged directly with a vendor, used vehicle tires are transported to GreenMan Technologies of Minnesota, Inc. in Savage, where they are processed into a fuel source. Large tires from the diesel tractors and trailers used in the various biosolids programs are retreaded. This includes up to three times retreading on sixteen trailers with twelve tires each and three tractors with eight tires each (not counting the two steering axle tires). Presently, new light truck and automobile tires can be purchased through the state contract at price comparable or cheaper than retreads.

MCES was unsuccessful in trying to recycle large rubber conveyor belts. Although the material is the same as tires, local recyclers were unwilling to handle the different con-figuration. One vendor was found who would grind the belts into an asphalt additive, but the distance for transport and the cost were too much. The belts were landfilled.

Minnesota State Colleges and Universities:

Anoka Hennepin Technical College -- Tires are recycled.

Hennepin Technical College -- The Material Management Division of the state has developed a contract for tire recovery. Tires are also recycled through local venders.

North Hennepin Community College -- Tires are recycled through various vendors at an annual cost $35.

Ridgewater Community and Technical College -- Tires are installed off site, and we pay to have them recycled.

Southeast Technical College -- Tires are installed off site. We pay to have old tires recycled. The Auto Mechanic technician department no longer has a tire changer, which has reduced the number of old tires recycled.

St. Cloud State University -- About 95 tires are recycled each year at a cost of about $1.25 each. They are ground up and become components in other products.

Department of Transportation -- Mn/DOT recycles all waste tire generated by Mn/DOT as well as the tires that the public has lost along Mn/DOT right-of-way. Mn/DOT does re-cap a small percentage of waste tires. However, due to the conditions under which Mn/DOT vehicles are operated, i.e. plowing snow, only a limited amount of re-capped tires can be used. Mn/DOT has researched the possibility of using ground tires as a base material in highway construction. It appears that the cost of this technology is prohibitive to Mn/DOT. *Research articles are available.*

34. Water Treatment and Conservation

Department of Administration -- The Plant Management Division rebuilds parking lots and structures to meet water division guidelines. The Materials Management Division developed a contract for salmon and trout feed that reduces the effluent produced by excess feeding of fish. The water quality downstream from state hatcheries will be improved as a result of this contract.

Department of Corrections -- **MCF-FRB** – We contract with Freemont at a cost of $2,280 in FY 1999.

MCF-OPH –Water saving toilet fixtures with a timed flushing devices have been installed in inmate cells. The institution has used timed shower valves since opening. Changing to two SHU units has decreased water consumption.
MCF-SCL – The outdoor sprinklers are on timers. Leaks are repaired as soon as possible. This reduces water bills and saves resources.

Department of Human Services -- The AH-GWAH-CHING Center has its own water treatment system. The minerals removed from the water are given to local farmers to be spread on their fields.

Metropolitan Airports Commission -- The MAC has included a truck wash with a complete water recycling system in the addition to the Field Maintenance building. This greatly reducing the amount of wastewater (gray water) generated.

Metropolitan Council – Environmental Services -- The MCES is the division of the Metropolitan Council which treats wastewater. The system collects and treats over 300 million gallons of wastewater per day from 104 communities and over 2 million people. The MCES operates about 550 miles of interceptor sewers, 65 lift (pumping) stations, 178 metering stations, and nine treatment plants. Clean effluent is discharged to four area rivers--the Mississippi, Minnesota, St. Croix, or Vermillion. From the Metro Plant alone, 76 billion gallons of treated wastewater was discharged to the Mississippi. Pollution prevention affecting the quality of effluent was described in the section on heavy metals. Groundwater conservation was described in the section on groundwater wells. One area that clearly falls under pollution prevention in MCES operations is the beneficial reuse of residual solids from the wastewater treatment process. Biosolids at the two largest treatment plants are incinerated in multiple-hearth furnaces resulting in an 80 percent reduction in volume of residual solids. The on-going ash utilization program incorporates the ash from incinerated biosolids into flowable fill, cement/concrete, structural fill, and asphalt projects. In 1998, a total of 13,078 dry tons from the Metro WWTP and 3,860 dry tons from the Seneca WWTP (Eagan, Dakota County) were utilized for those purposes.

N-Viro Soil is a program, which blends alkaline admixtures--previous "waste" products from lime manufacturing and coal-fired power plants--and biosolids also for use in agricultural and horticultural applications. In 1998, 2,401 dry tons of biosolids from the Seneca WWTP were blended with admixtures to produce approximately 16,543 wet tons of N-Viro Soil. Straight biosolids--without any blended components--are typically landspread on farm fields. A total of 1,141 tons from MCES Plants was land-applied in 1998. Two of the regional plants--Cottage Grove (Cottage Grove, Washington County) and Hastings (Hastings, Dakota County)--have installed screenings presses. The presses dewater screenings, trash, and debris that are collected from wastewater in the pretreatment process. The benefits of a screenings press are evident--less water for lower screenings volume, which results in lower disposal and hauling costs. In addition, the dewatered screenings contribute less water to landfills, which helps reduce leachate generation. For the Hastings WWTP, it has been calculated that a 65 percent cost reduction translates into a two-year payback period for the investment in the new equipment. The Stillwater WWTP (Oak Park Heights, Washington County) uses ultraviolet lamps for effluent disinfection. Normally, chlorine is used for disinfection at treatment plants and sulfur dioxide or sodium bisulfite is used for dechlorination. Although none of these chemicals are detected in plant effluent and therefore are not pollutants, the use of ultraviolet disinfection eliminates the need for storing hazardous chemicals on-site. The entire MCES, with an emphasis on the work of the IWS, was a recipient of an honorable mention for the 1995 Minnesota Governor's Award for Excellence in Pollution Prevention.

Pollution Control Agency -- The new Brainerd Office has leased premises that will feature water conservation fixtures, including low-volume flush toilets.

Minnesota State Colleges and Universities:

Hennepin Technical College -- HTC used city water and sewer. All equipment in the boiler rooms is kept well maintained. Treated water is used in boilers, chilling towers and this system loops throughout the buildings.

North Hennepin Community College -- Treated water is used in boilers, chilling towers; SC building closed loop-heating system.

Ridgewater Community and Technical College -- Freemont treats and monitors our boilers, building closed loop heating system and chiller.

Southeast Technical College -- Some water conservation has been achieved by removing vacuum-type gravity flush tanks, which ran continuously, and installing automatic flush valves on the urinals. Other conservation has included installing rain sensors on in- ground sprinkler systems.

St. Cloud State University -- Progress continues on replacing restroom urinal flushing systems to reduce water use. Payback is about one year. Extensive lead-in-water testing has been completed in the campus houses being used for office space. Results were all well below the action level and most below 5.0 ug/l. A MnSCU survey last year resulted in some water conservation improvements.

Department of Transportation -- Mn/DOT's truck station in North Branch has a complete water recycling system in place. All truck-wash water as well as snow melt from trucks is captured, run through a small water treatment system, and re-used as make-up water in the production of salt brine. *See "18. Ice control, Sanding."*

Part III

Matrix of Agencies and Categories

Part III contains a matrix showing which agencies provided activity summaries under each category. Each agency addressing a particular category of pollution prevention activities is marked with an X in the row for that category. Considering the column for that agency or department can identify the categories addressed by each agency or department. Please see the matrix on the next page.

Part IV

Part IV contains the signatures of each agency. Each agency's signed copy is on file at the Office of Environmental Assistance. For more information, contact Emily Moore at the OEA at (651) 215-0201 or (800) 657-3843.

Matrix 1999

Activity Type	Dept of Administration	Dept of Agriculture	Dept of Corrections	Office of Environmental Assistance	Dept of Human Services	Metropolitan Airports Commission	Met Council Environmental Services	Met Council – Metro Transit	Metropolitan Mosquito Control	Military Affairs	Pollution Control Agency	Dept of Public Services (Commerce)	Anoka Hennepin Technical College	Hennepin Technical College	North Hennepin Community College	Ridgewater Community & Tech College	Southeast Technical College	Bemidji State University	St. Cloud State	Dept of Transportation (MnDOT)	University of Minnesota	Board of Water & Soil Resources
Absorbents																						
** Ongoing	X		X		X	X	X	X	X				X	X	X	X	X		X	X	X	
** FY99	X																					
** Planned	X																					
Adhesives																						
** Ongoing	X		X										X	X								
** FY99	X																					
** Planned	X																					
Air Quality																						
** Ongoing	X		X		X	X	X	X				X		X	X	X	X		X	X	X	
** FY99	X				X									X								
** Planned	X													X								
Antifreeze																						
** Ongoing	X		X		X	X	X	X	X					X	X	X	X	X		X	X	
** FY99	X																					
** Planned	X																					
Audits																						
** Ongoing	X		X			X			X	X				X			X		X		X	
** FY99	X					X								X								
** Planned	X					X																
Auto - Fuels																						
** Ongoing	X		X						X			X		X	X	X	X	X	X		X	
** FY99	X											X										
** Planned	X											X										
Auto - Maintenance																						
** Ongoing	X		X			X	X		X					X	X	X	X		X		X	
** FY99	X																					
** Planned	X																					
Batteries																						
** Ongoing	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X					
** FY99	X		X									X										
** Planned	X																					
Cleaning Supplies																						
** Ongoing	X		X		X								X	X	X	X	X				X	
** FY99	X													X								
** Planned	X																					
Commuting, Transportation																						
** Ongoing	X		X	X	X	X	X				X			X			X		X		X	X
** FY99	X													X								X
** Planned	X				X																	
Ed, Communication, Training																						
** Ongoing	X		X	X	X				X		X	X	X	X			X	X	X		X	
** FY99	X				X							X		X								
** Planned	X											X										
Electronics																						
** Ongoing	X		X		X	X					X		X	X			X	X	X		X	
** FY99	X																					
** Planned	X				X																	

Matrix 1999

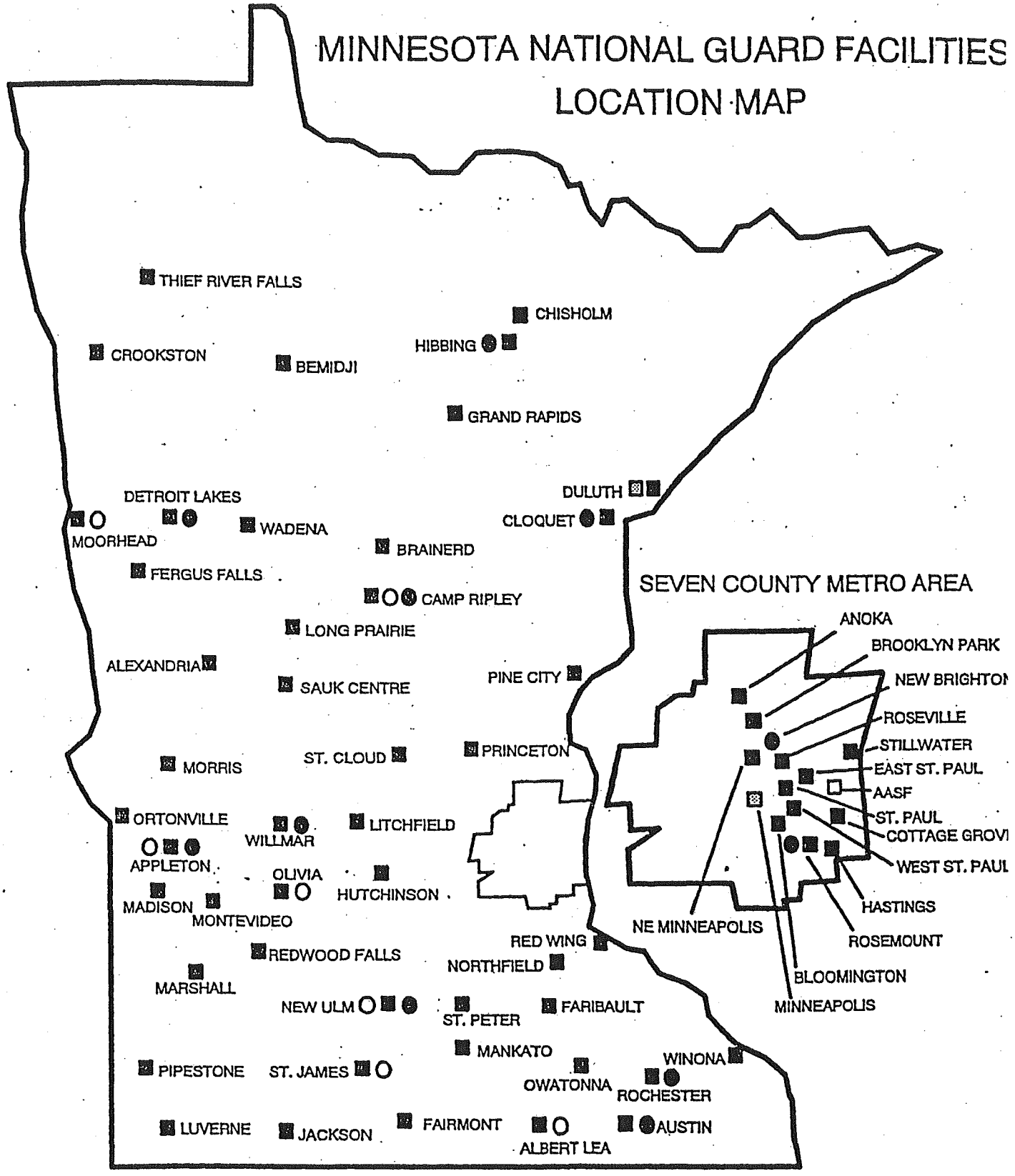
Activity Type	Dept of Administration	Dept of Agriculture	Dept of Corrections	Office of Environmental Assistance	Dept of Human Services	Metropolitan Airports Commission	Met Council Environmental Services	Met Council – Metro Transit	Metropolitan Mosquito Control	Military Affairs	Pollution Control Agency	Dept of Public Services (Commerce)	Anoka Hennepin Technical College	Hennepin Technical College	North Hennepin Community College	Ridgewater Community & Tech College	Southeast Technical College	Bemidji State University	St. Cloud State	Dept of Transportation (MnDOT)	University of Minnesota	Board of Water & Soil Resources
Energy – Lighting																						
** Ongoing	X		X	X							X		X	X	X	X					X	
** FY99	X		X																			
** Planned	X																					
Energy – Production																						
** Ongoing	X		X	X	X						X	X		X							X	
** FY99	X											X										
** Planned	X											X										
Groundwater Wells																						
** Ongoing	X		X										X	X	X	X						X
** FY99	X				X																	X
** Planned	X																					
Heavy Metals																						
** Ongoing	X		X	X	X									X	X	X					X	
** FY99	X				X																	
** Planned	X																					
HVAC, Indoor Air Quality																						
** Ongoing	X		X								X	X	X	X	X	X					X	
** FY99	X		X		X																	
** Planned	X		X																			
Ice Control, Sanding																						
** Ongoing	X		X		X	X								X	X	X					X	
** FY99	X		X																			
** Planned	X																					
Laboratories																						
** Ongoing		X	X								X	X		X	X	X					X	
** FY99	X																					
** Planned																						
Materials Exchange																						
** Ongoing	X		X	X		X								X							X	
** FY99	X																					
** Planned	X				X																	
Office Supplies																						
** Ongoing	X		X	X	X	X					X		X	X	X	X						X
** FY99	X				X																	X
** Planned	X																					
Oil, Oil Filters																						
** Ongoing	X		X		X	X				X		X	X	X	X	X					X	
** FY99	X		X		X																	
** Planned	X																					
Paints, Coatings, Stripping																						
** Ongoing	X		X			X					X		X	X	X	X					X	
** FY99	X				X																	
** Planned	X																					
Parts Cleaning																						
** Ongoing	X		X		X	X				X			X	X							X	
** FY99	X				X									X								
** Planned	X																					

Matrix 1999

Activity Type	Dept of Administration	Dept of Agriculture	Dept of Corrections	Office of Environmental Assistance	Dept of Human Services	Metropolitan Airports Commission	Met Council Environmental Services	Met Council – Metro Transit	Metropolitan Mosquito Control	Military Affairs	Pollution Control Agency	Dept of Public Services (Commerce)	Anoka Hennepin Technical College	Hennepin Technical College	North Hennepin Community College	Ridgewater Community & Tech College	Southeast Technical College	Bemidji State University	St. Cloud State	Dept of Transportation (MnDOT)	University of Minnesota	Board of Water & Soil Resources
Personal Care Products																						
** Ongoing					X																	
** FY99																						
** Planned																						
Pesticides, Fertilizers																						
** Ongoing	X	X	X		X								X	X	X	X					X	
** FY99	X																					
** Planned	X																					
Policy Statement																						
** Ongoing	X		X	X	X	X						X		X	X	X					X	
** FY99	X													X								
** Planned	X													X								
Printing																						
** Ongoing	X		X	X		X					X			X							X	
** FY99	X																					
** Planned	X		X																			
Procurement, Materials Management																						
** Ongoing	X	X	X	X		X					X			X		X					X	
** FY99	X		X																			
** Planned	X																					
Remanufactured Parts																						
** Ongoing	X				X	X					X			X								
** FY99	X				X																	
** Planned	X																					
Tanks (storage)																						
** Ongoing	X		X		X	X						X		X	X	X						
** FY99	X		X		X																	
** Planned	X																					
Tires																						
** Ongoing	X		X			X							X	X	X	X						
** FY99	X																					
** Planned	X					X																
Technical Support																						
** Ongoing	X		X	X		X								X	X	X						
** FY99	X																					
** Planned	X																					
Water Treatment, Conservation																						
** Ongoing	X		X		X	X								X	X	X						
** FY99	X																					
** Planned	X																					

Appendix A

MINNESOTA NATIONAL GUARD FACILITIES LOCATION MAP



LEGEND

- NATIONAL GUARD T.C.C
- ARMY AVIATION FLIGHT FACILITY
- AIR NATIONAL GUARD BASE
- ORGANIZATIONAL MAINTENANCE SHOP
- MOTOR VEHICLE STORAGE BUILDING

Attachment 1

N

M:\MNMAP.DRW

Grant Summary

Round: 1999 Consolidated	Total requested: $13,450
Status: Grant Completed	Total recommended: $13,450
Number of grants: 2	Total encumbered: $13,450

ID# 398 Total Cost: $31,950 Requested: $9,950 Recommended: $9,950

Western Lake Superior Sanitary District

This project researched the amount of food waste disposed of in Duluth and surrounding communities and determined methods to reduce and recover food waste. Approximately 100 tons of food waste were recovered and 113 tons of food waste were recycled during the project.

Staff Assigned: Monte Hilleman

ID# 396 Total Cost: $4,690 Requested: $3,500 Recommended: $3,500

Women's Cancer Resource Center

This project sought to educate managers of healthcare facilities through a workshop and supporting materials. The focus of the workshop was to reduce pollution resulting from unnecessary incineration of materials, which are a source of dioxin and mercury (known to interfere with major hormonal or neurological functions). The workshop was highly rated as effective by 67 attendants, including two nursing educators, representatives from three of Minnesota's largest health care facilities, and eleven medical facilities. The outreach included visits to metro hospitals to further educate and distribute materials. In addition, the mercury and dioxin (PVC plastic) issue was featured in professional publications such as "Minnesota Physician" and "Creative Nursing Journal", along with an interview on the cable television program "Public Health Journal." Final products include copies of presentations, information packets and audiotapes which are available for interested personnel.

Staff Assigned: Emily Moore

Round: 1999 Consolidated	Total requested: $468,953
Status: Grant In progress	Total recommended: $416,942
Number of grants: 10	Total encumbered: $426,809

ID# 348 Total Cost: $130,250 Requested: $65,125 Recommended: $65,125

Cass County Environmental Services Department

This project is implementing a materials exchange to enable the reuse of business and residential waste. They are providing direct waste prevention assistance to business and researching the feasibility of salvaging and reusing construction and demolition materials.

Staff Assigned: Mary Wenck

ID# 349 Total Cost: $150,000 Requested: $75,000 Recommended: $65,000

Clay County Solid Waste Management

This project is implementing a construction and demolition debris collection program, focusing with wood waste. They are assisting businesses reduce the amount of waste generated by developing an educational program on waste reduction. They are also promoting the reuse of goods and products through a regional materials exchange program.

Grant Summary

Round: 1999 Consolidated	Total requested: $468,953
Status: Grant In progress	Total recommended: $416,942
Number of grants: 10	Total encumbered: $426,809

Staff Assigned: Dennis Hanselman

ID# 346 Total Cost: $100,671 Requested: $50,235 Recommended: $40,000

Institute for Local Self Reliance

This project is assisting local government in Minnesota to convert to the use and manufacture of plant-based materials. They are providing information and targeted technical assistance to government particularly in the areas of procurement policies, environment criteria, and product design.

Staff Assigned: Emily Moore

ID# 407 Total Cost: $19,998 Requested: $9,999 Recommended: $9,999

Martin County

Funding for a program assistant in Martin County Solid Waste and Extension Offices to implement an existing business assistance plan. The goal is to provide education and technical assistance to increase business waste reduction and recycling throughout the county, while reducing costs currently paid by businesses for waste disposal.

Staff Assigned: Richard Andre

ID# 4 Total Cost: $150,000 Requested: $75,000 Recommended: $60,000

Medtronic, Inc

This project is measuring the environmental and economic impacts of using Design for the Environment (DFE) and Materials Productivity tools in the product design operations at Medtronic, Inc.

Staff Assigned: Fran Kurk 4/6/99 to

ID# 350 Total Cost: $11,745 Requested: $5,873 Recommended: $5,873

Otter Tail County Solid Waste Department

Otter Tail County is establishing a materials exchange program in order to assist business and other community memebers to reuse and recycle materials. The program is being promoted through local newspaper, radio and television stations. The materials exchange program is complimenting other waste reduction and recycling activities already underway in Otter Tail County.

Staff Assigned: Dennis Hanselman

Grant Summary

Round: 1999 Consolidated	Total requested: $468,953
Status: Grant In progress	Total recommended: $416,942
Number of grants: 10	Total encumbered: $426,809

ID# 401 Total Cost: $19,998 Requested: $9,999 Recommended: $9,999

Pelican River Watershed

The project will consist of a campaign to educate and inform new and seasonal residents in the Pelican River Watershed District about urban, shoreland, and agricultural Best Management Practices, including stormwater and fertilizer issues. The education includes the topics of solid and household hazardous waste disposal and reduce/reuse/recycle information. Local government (city, township, watershed district) ordinance and rule requirements will also included. The project will include the development of a folder containing information on the above mentioned issues and display equipment used to educate the public at various meetings and workshops.

Staff Assigned: Dennis Hanselman

ID# 5 Total Cost: $155,000 Requested: $71,310 Recommended: $71,310

Safe & Clean

This project is researching and developing a machine with new technology that dispenses non-hazardous detergents into reusable bottles. This reusable bottle take-back system will enable environmentally safe detergents to enter mainstream retail stores and entice customers with a new technology and competitive pricing. The machine will track the amount of product sold and number of bottles filled to quantify environmental impact.

Staff Assigned: Ken Brown

ID# 347 Total Cost: $79,727 Requested: $39,636 Recommended: $39,636

Southwest Regional Solid Waste Commision

This project is developing a region-wide materials exchange program and assisting counties, cities, and schools in developing and implementing procurement policies for recycled and reuse materials. The project goal is to divert waste from the landfill while developing markets for reuse materials.

Staff Assigned: Rick Dillon

ID# 345 Total Cost: $141,336 Requested: $66,776 Recommended: $50,000

St. Paul Neighborhood Energy Consortium (NEC)

The Neighborhood Energy Consortium (NEC) is developing and implementing an Integrated Pest Management (IPM) model in four schools reducing the use of pesticides and building healthier communities. The NEC is working with teams including school staff, toxins experts and professional trainers to research existing pesticides use, develop IPM plans and educate parents and school staff.

Staff Assigned: Kelly Luck 4/1/99 to 6/1/2000

Susan Waughtal 6/1/2000 to

Exhibit 1

MINNESOTA DEPARTMENT OF ADMINISTRATION
POLICY ON
ENVIRONMENTAL MATERIALS MANAGEMENT

WHEREAS,

The Department of Administration recognizes that environmental attention during the management of materials can conserve resources, prevent pollution, increase efficiency and result in cost savings during the purchase, inventory, use, maintenance, treatment and disposal of goods.

Minnesota Statutes, Section 16B.121 mandates that state purchases of commodities and services shall apply and promote the preferred waste management practices listed in Minnesota Statutes, Section 115A.02, with special emphasis on reduction of the quantity and toxicity of materials in waste. Bid specifications also shall consider the product's durability, reusability, and ability to be recycled and marketed through the state's resource recovery program.

Minnesota Statutes, Section 115D.02 specifies that it is the policy of the state to encourage pollution prevention. Pollution prevention includes, but is not limited to, "eliminating or reducing at the source the use, generation, or release of toxic pollutants, hazardous substances and hazardous wastes."

THEREFORE, BE IT RESOLVED THAT

The Department of Administration has established "Priorities for Environmental Materials Management" to conserve resources and to avoid and minimize waste and pollution during the acquisition, use, maintenance, and discard of goods.

All Divisions shall provide administrative and managerial support to integrate the attached "Priorities for Environmental Materials Management" into all programs and shall designate a representative to the Department of Administration's Environmental Coordinators Committee. Facilitated by the Resource Recovery Office, this committee will communicate and encourage the implementation of resource conservation, waste reduction, pollution prevention and other environmentally-preferred activities associated with the acquisition, use, maintenance and recovery of materials for reuse, recycling and composting.

Dana B. Badgerow
Commissioner
Department of Administration

December 31, 1992
Date

Exhibit 2

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.

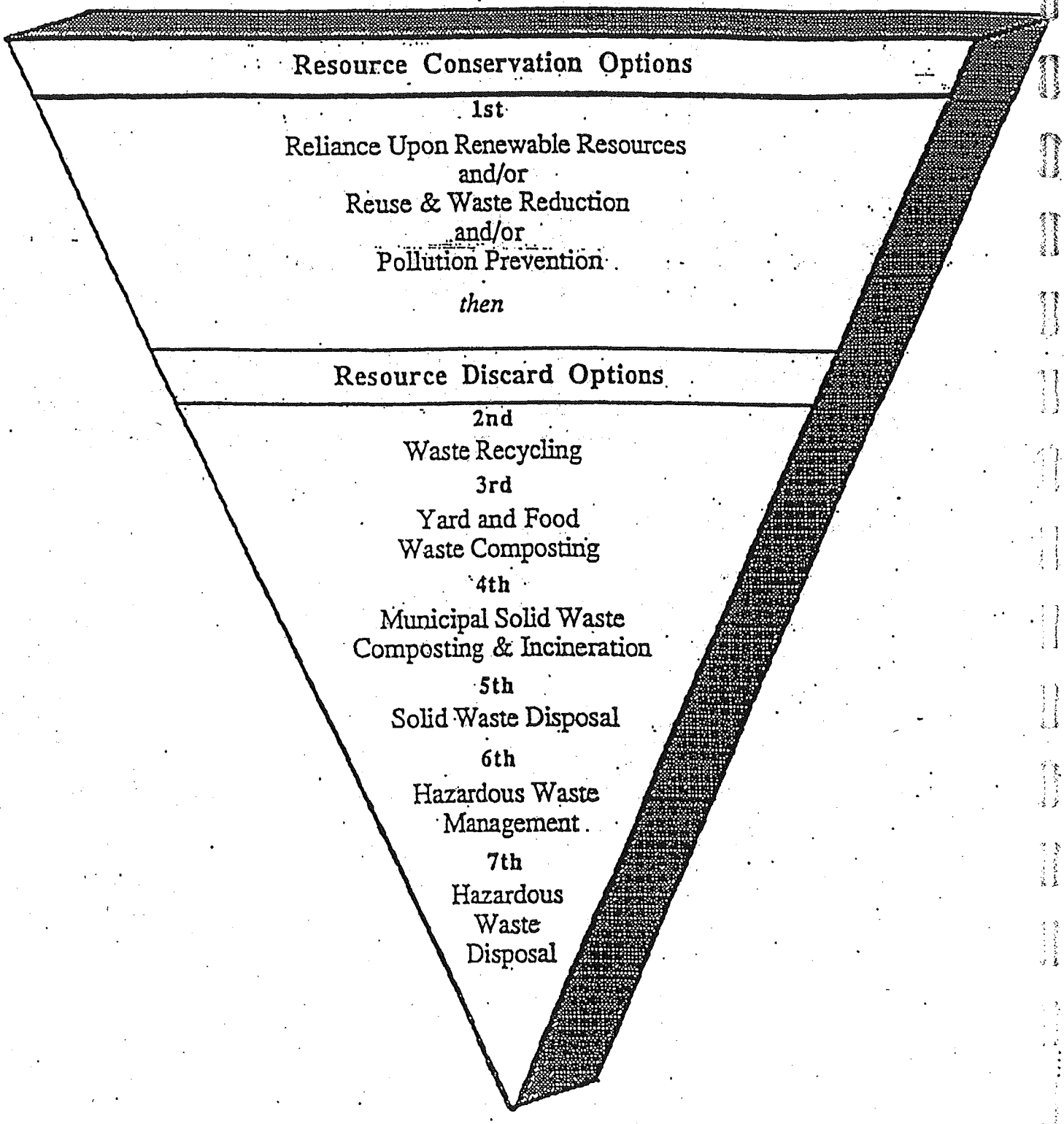


Exhibit 3

Plant Management

MISSION STATEMENT

Our mission is	To deliver consistent quality services to ensure clean, safe and environmentally sound buildings, grounds and operations.
Our customers are	All people who use our services throughout the state of Minnesota.
The services we provide are	A continuum of building, grounds and professional services specific to the customers' needs. They include building maintenance, cafeterias, energy management services, grounds, janitorial, materials transfer, parking, administration of the state resource recovery program, and special use of state facilities permits.
Our core values are	☐ High-quality professional staff with: - Accountability - Honesty and ethics - Loyalty - Integrity - Commitment to teamwork - Respect of others and ourselves - Knowledge ☐ Responsiveness to our customers needs through: - Communication - Efficiency - Timeliness ☐ Provide quality work through: - Modern technology - Employee training ☐ Responsible business practices that encourage: - Professionalism - Cost-effectiveness - Open communication ☐ Plan for the future, considering: - Technology - Employee development - Establishment of long-term goals - Involvement with clients ☐ Environmental stewardship with: - Conservation of resources - Prevention of pollution - Promotion and education - Integration into all work places and services

Created 12-2-92

Exhibit 4

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES **Available from Central Stores and State Contracts**						07/29/99	08/03/1999
CR #	**PRODUCT/SERVICE**	**MINNESOTA RC CONTENT**	**FEDERAL RC STANDARDS**	**BRANDS**		**SOURCE**	**ANNUAL DOLLARS**
A-175	AUTOMOBILES & VANS	40-75% PC		FORD TAURAS	*	ALBANY FORD	$3,000,000
	ALTERNATIVE FUEL (E-85) AND			DODGE CARAVAN	*	ROSEDALE DODGE	$1,240,000
	NON-ALTERNATIVE FUEL VEHICLES			VARIOUS	*	VARIOUS	$5,000,000
A-174	AUTOMOBILES: STATE PATROL	75% RC		CROWN VICTORIA	*	SUPERIOR FORD	$2,250,000
A-207	AUTOMOBILES: REFURBISHED	NA		NA		SHAHEEN MOTERS	$1,800,000
	STATE PATROL						
B-298	BAGS: POLYETHYLENE WASTE	7% PC	10% PC	VARIOUS	*	APACHE	$227,000
B-280	BOXES: CORRUGATED	50% PC		NA	*	A.I. HALPER	$37,500
B-297	BOXES: RECORDS STORAGE	40% PC		STONE	*	CENTRAL STORES	$36,044
C-252	CLEANING SUPPLIES	NA		VARIOUS	*	VARIOUS	$900,000
C-432	CARPET - RECYCLING OF	NA		NA	*	BLS	$23,670
C-637	COMPUTERS: PRINTER LEASE	NA		XEROX	*	XEROX CORP	$200,000
C-781	COMPUTERS: LAPTOP LEASE-DNR	NA		TOSIHBA		COMPAR, INC.	$394,560

Exhibit 4

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts				07/29/99		08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
A-175	AUTOMOBILES & VANS ALTERNATIVE FUEL (E-85) AND NON-ALTERNATIVE FUEL VEHICLES	40-75% PC		FORD TAURAS DODGE CARAVAN VARIOUS	* ALBANY FORD * ROSEDALE DODGE * VARIOUS	$3,000,000 $1,240,000 $5,000,000
A-174	AUTOMOBILES: STATE PATROL	75% RC		CROWN VICTORIA	* SUPERIOR FORD	$2,250,000
A-207	AUTOMOBILES: REFURBISHED STATE PATROL	NA		NA	SHAHEEN MOTERS	$1,800,000
B-298	BAGS: POLYETHYLENE WASTE	7% PC	10% PC	VARIOUS	* APACHE	$227,000
B-280	BOXES: CORRUGATED	50% PC		NA	* A.I. HALPER	$37,500
B-297	BOXES: RECORDS STORAGE	40% PC		STONE	* CENTRAL STORES	$36,044
C-252	CLEANING SUPPLIES	NA		VARIOUS	* VARIOUS	$900,000
C-432	CARPET - RECYCLING OF	NA		NA	* BLS	$23,670
C-637	COMPUTERS: PRINTER LEASE	NA		XEROX	* XEROX CORP	$200,000
C-781	COMPUTERS: LAPTOP LEASE-DNR	NA		TOSIHBA	COMPAR, INC.	$394,560

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES 07/29/99 | 08/03/1999
Available from Central Stores and State Contracts

CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
C-6XX	COPY EQUIPMENT RENTAL	NA		VARIOUS	* VARIOUS	$4,000,000
D-150	DATED PRODUCTS	30% PC		HOD	* CENTRAL STORES	$30,000
D-156	DE-ICERS: CMA & ALTERNATES	NA		NA	* VARIOUS	$13,500
D-160	D-LIMONENE	NA		NA	* MILSOLV	$2,050
E-82	ENVELOPES:				* CENTRAL STORES	
	- JIFFY PADDED	100% PC PAD		NA		$16,629
	- WHITE UNPRINTED	30% PC		NA		$14,822
	- GLASSINE WINDOW	30% PC		NA		$2,408
	- KRAFT UNPRINTED	30% PC		NA		$83,348
F-400	FILING SUPPLIES:				* CENTRAL STORES	
	- FILE FOLDERS	10% PC		ESSELTE		$95,471
	- HANGING FOLDERS	10% PC		SMEAD		$50,108
	- FILE GUIDES	10% PC		SMEAD		$615
	- SHEET PROTECTORS	100% PC		C-LINE		$16,710
	- PORTFOLIO REPORT COVERS	10% PC		SMEAD		$24,866
	- PORTFOLIO REPORT COVERS	10% PC		DUO TANG		$461
F-339	FOODSERVICE PRODUCTS: CUPS	80/20% PC PHX		SWEETHEART	* CLARK FOODSERVICE	$5,000
F-358	FLASHLIGHTS, BATTERIES	NO ADDED MERCURY		RAYOVAC	* NORTHLAND ELECTRIC	$75,000
F-354	FOODSERVICE EQUIPMENT:				* MN FOOD SERVICE	$40,000

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts				07/29/99		08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
	- RECYCLED ALUMINUM	25/0% PC		COMMERCIAL		
	- RECYCLED STEEL	80/0% PC		VOLLRATH		
	- RECYCLED STEEL	25/0% PC		BLOOMFIELD		
F-454	FISH FOOD: SALMON & TROUT	NA			NELSON & SONS	$50,000
F-394	FURNITURE: PANEL REUPHOLSTERY	NA		VARIOUS	* MINNCOR	$945
F-422	FURNITURE: REUPHOLSTERY	NA		VARIOUS	* MINNCOR	$62,119
F-452	FURNITURE: RECONFIGURATION AND CLEANING	NA		NA	VARIOUS	$1,078,938
F-464	FURNITURE: REFURBISHED HERMAN MILLER SYSTEMS	70%		HERMAN MILLER	* VARIOUS	$193,000
H-63	HAZARDOUS SPILL & SUBSTANCE RELEASE/REMOVAL: FULL SERVICE	NA		NA	* BAY WEST, INC. * WEST CENTRAL ENV.	$300,000 $300,000
H-68	HAZARDOUS PESTICIDE WASTE	NA		NA	AETS/ONYX	$350,000
H-69	HAZARDOUS WASTE MGMT.	NA		NA	* AETS/ONYX	$1,500,000
H-75	HAZ. WASTE SITE INVESTIGATIONS	NA		NA	BERGERSON-CASWELL	$230,000
H-76	HAZ. WASTE SITE INVESTIGATIONS SECONDARY CONTRACTOR	NA		NA	MAXIM	NA

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts					07/29/99	08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
H-77	HAZARDOUS SPILL & SUBSTANCE RELEASE: LIMITED SERVICE	NA		NA	* VARIOUS	$50,000
H-79	HAZ. WASTE: FLUORESCENT AND HID LAMP RECYCLING	NA		NA	* RECYCLIGHTS	$250,000
H-86	HAZ. WASTE: USED OIL SORBENT & FILTER MANAGEMENT	NA		NA	* CES RECOVERY SERVICE	$50,000
H-87	HAZ. MATERIALS: MANAGEMENT OF MERCURY MANOMETERS				* RECYCLIGHTS	$2,000
L-290	LAMPS: FLUORESCENT, INCANDESCENT, HID	Energy Efficient Low Mercury			* VARIOUS	$350,000
L-245	LUBRICATING OILS	50% PC	25% Re-Refined	EN-O-CO	* MCCOLLISTER & CO.	$1,775
M-451	MAILING EQUIPMENT & SUPPLIES	15%		PITNEY BOWES	PITNEY BOWES	$500,000
O-69	OIL: RE-REFINED OIL CHANGE	NA	25% PC	VARIOUS	* VARIOUS	$50,000
O-61	OFFICE PRODUCTS: WHOLESALE CATALOG PROGRAM	VARIOUS		VARIOUS	* CENTRAL STORES	$261,748
O-71	OFFICE PRODUCTS:			MINNCOR	* CENTRAL STORES	
	- CLASSIFICATION FOLDERS	25% PC				$14,009
	- FILE POCKETS, REDROPE	10% PC				$77,950
	- TONER CARTRIDGES	REMFG.				$29,598

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts					07/29/99	08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
	- RING BINDERS: CHIPBOARD COVER	100% PC	80% PC			$139,925
	AND BINDER MECHANISM	50-100% PC				
	- PRESSBOARD REPORT COVERS	30% PC				$7,135
O-73	OFFICE SUPPLIES: DATA BINDERS	50% PC			* CENTRAL STORES	$1,791
O-74	OFFICE SUPPLIES: POST-IT NOTES	15% PC		3M	* CENTRAL STORES	$96,086
O-74	OFFICE SUPPLIES: POST-IT FLAGS	50% PC Dispenser		3M	* CENTRAL STORES	$32,620
O-79	OFFICE SUPPLIES: RC PENCILS	100% PC		FABER	* CENTRAL STORES	$498
O-80	OPERATION & MAINTENANCE OF CLOSED LANDFILLS	NA		NA	VARIOUS	$607,100
P-734	PAINT: SOLVENT-FREE	NA		LIFEMASTER 2G	* GLIDDEN PAINT	$16,549
P-661	PAPER : TOWELS, TISSUE	90-95 %PC	5 - 40% PC	FORT JAMES	* REGIONAL DEALERS	$1,454,000
P-755	PAPER: COPIER	30% PC	30% PC	GREAT WHITE	* CENTRAL STORES	$838,495
P-755	PAPER: COPIER - COMM.MEDIA	30% PC	30% PC	GREAT WHITE	UNISOURCE	$120,000
NA	PAPER: BOND/OFFSET - COLORS	20% PC	30% PC	ENVIROGRAPHIC	* CENTRAL STORES	$165,269

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts				07/29/99		08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
P-676	PAPER: 25% COTTON BOND	15% PC	30% PC	FOX RIVER	* CENTRAL STORES	$23,466
P-741	PAPER: PRINTING & BUSINESS	10-100% PC	30% PC	VARIOUS	* VARIOUS DEALERS	$999,390
P-750	PAPER: WRITING & PADS				* CENTRAL STORES	
	- DOODLE PADS	10% PC		TOPS		$519
	- LEGAL RULED PADS-RC NEWSPRINT	100% PC		REFORM		$7,950
	- LEGAL RULED PADS-RC BOND	10% PC		REFORM		$41,302
	- RULED GUMMED PADS	10% PC		REFORM		$24,869
	- LOOSELEAF FILLER PAPER	10% PC		AMPAD		$1,111
	- INDEX, 110 LB, COLORS	20/20% PC		AMPAD		$1,865
	- SCRATCH PADS -RC BOND	10% PC		REFORM		$10,292
P-752	PAPER: PRINTER - RC BOND	25% PC		REFORM 50	* PERFORMANCE	$27,343
P-752	PAPER: PRINTER - RC NEWSPRINT	100% PC		NA	* WILLAMETTE	$124,579
P-762	PAPER: MISCELLANEOUS				* CENTRAL STORES	
	- COATED BLANKS C1S	100/18% PC		BEVERIDGE		$1,073
	- COATED BLANKS C2S	50/20% PC		BEVERIDGE		$1,738
	- THEME PAPER	50/0% PC		RIVERSIDE		$3,565
	- INDEX, 110 LB, COLORS 8-1/2 X11	20/20% PC		WAUSAU		$16,070
	- INDEX CARDS - 90 LB. WHITE	50/10% PC		ESSELTE		$3,596
	- BLOTTING	50/20% PC		VERIGOOD		$192
	- KRAFT WRAP	100/20% PC		NA		$4,420
P-757	PENS: REFILLABLE STICK	NA		PAPERMATE	* CENTRAL STORES	$75,554

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts				07/29/99		08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
P-698	PLUMBING SUPPLIES	50% Stl/Cast Iron 30% COPPER		WARD MUELLER/GOODIN	* GOODIN	$66,200 $14,000
P-643	PRINTED LETTERHEAD STATIONERY	30% PC		NA	* COR/COMM	$150,000
P-829	POLYETHYLENE FILM - FERGUS RTC	90% PC		NA	GENERAL PLASTIC	$17,100
P-818	PRINTED WINDOW ENVELOPES	30% PC		NA	HEINRICH ENVELOPES	$500,000
P-718	PRINTED BUSINESS CARDS	10-15% PC		NA	* CORPORATE GRAPHICS	$48,000
P-707	PRINTED ENVELOPES <5000	30% PC		NA	* ADA PRINTING	$40,000
P-710	PRINTED ENVELOPES >5000	30% PC		NA	* HEINRICH ENVELOPE	$528,253
P-711	PRINTED SELF MAILERS & WARRANTS	10% PC	30% PC	NA	STANDARD REGISTER	$200,000
P-706	PRINTING OF MN VOLUNTEER	50/10% PC		NA	QUEBECOR	$360,000
P-768	PRINTED CONTINUOUS FORMS - DHS	50/10% PC		NA	OEI BUSINESS FORMS	$30,800
P-709	PRINTED 1-PLY FORMS/LETTERHEAD	50/20% PC		NA	* BERGSTROM CO.	$60,000

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts					07/29/99	08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
P-712	PRINTED STATIONERY-ARTS BOARD	60/30% PC		NA	CHASE PRINTING	$5,600
P-743	PRINTED WINDOW ENVELOPES-DHS	50/20% PC		NA	TWIN CITY CONSUMER DIST.	$266,068
P-803	PRINTED FORMS - DHS	10% PC	30% PC	NA	ROYAL	$22,000
P-729	PRINTING PRODUCTS: SOY INK	NA		NA	* FLINT INK	$25,000
P-824	PRINTING & MAILING TAX FORMS	10% PC		NA	ROBERTS BUSINESS FORMS	$170,527
P-830	PRINTING: DHS NEWSLETTER	10% PC		NA	BERGSTROM CO.	$138,000
P-846	PRINTING: DES NEWSLETTER	20% PC		NA	JOHNSON LITHO GRAPHICS	$40,980
R-557	ROLLS: PAPER ADDING MACHINE	50/0% PC		RITE-MADE	* CENTRAL STORES	$5,273
R-454	RAGS: CLOTH WIPING	NA		NA	* BRO-TEX	$79,382
R-428	REMANUFACTURED: TRANSMISSION	50% REMFG.		ALLISON	* LAKELAND FORD	$35,500
R-452	REMANUFACTURED: ALTERNATOR	50% REMFG.		NA	* VARIOUS	$60,000
R-523	REMANUFACTURED: DIESEL ENGINES	50% REMFG.		FLEET POWER	* VARIOUS	$75,000

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts						07/29/99	08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS		SOURCE	ANNUAL DOLLARS
R-531	REMANUFACTURED: GAS ENGINES	50% REMFG.		NA	*	LAKELAND FORD	$6,000
R-607	ROLLER RECOVERY SERVICE	80% REMFG.		NA		SI INDUSTRIES	$4,800
S-635	SIGN BLANKS - DOT	100% PC		POLYFLEX	*	GOPHER SIGN CO.	$71,354
S-792	SAMPLING & LAB ANALYSIS						
	- MPCA SOUTH REGION				*	MN VALLEY TESTING	$235,000
	- MPCA NORTHEAST REGION				*	NE TECHNICAL SERVICES	$120,000
	- MPCA METRO & NW REGION				*	INTERPOLL LABS	$800,000
S-828	SHREDDING: CONFIDENTIAL RECORDS					SHRED-IT	$47,426
S-700	SLOTTED STEEL ANGLES	100%		VARIOUS		WARNER INDUSTRIAL	$26,000
S-815	SORBENT MATERIALS			VARIOUS	*	VARIOUS	$15,000
	STEEL: COMMON USE ITEMS:				*	VARIOUS	$517,000
S-742	- REGION 1					SO. ST. PAUL STEEL	
S-743	- REGION 2					SO. ST. PAUL STEEL AND MCNELIUS	
S-744	- REGION 3						
T-549	TIRES: RETREAD	100%	SPEC ZZ-T-381	BANDAG	*	ROYAL TIRE	$315,000
T-646	TELECOM EQUIP.: NEW & REFURBISHED	NA		LUCENT	*	VARIOUS	UNKNOWN

ENVIRONMENTALLY RESPONSIBLE PRODUCTS AND SERVICES Available from Central Stores and State Contracts				07/29/99		08/03/1999
CR #	PRODUCT/SERVICE	MINNESOTA RC CONTENT	FEDERAL RC STANDARDS	BRANDS	SOURCE	ANNUAL DOLLARS
T-642-3	TRUCKS 4X2, 4X4	25-96% PC		VARIOUS	* VARIOUS	$2,116,500
T-636	TRUCKS : CHASSIS CABS	25-96% PC		VARIOUS	* VARIOUS	$1,660,000
W-148	WASTE CONTAINERS: RECYCLING	20/0% PC	20-25% CP	RUBBERMAID	* CHIPPEWA SUPPLY	$42,335
W-126	WASTE DISPOSAL: INFECTIOUS AND CONFIDENTIAL DOCUMENTS	NA		NA	* MED SAFETY SYSTEM	$35,000
W-166	WASTE PAPER RECYCLING: DULUTH GOV. OFFICES	NA		NA	HOWARD WASTE PAPER	$6,000
W-	WASTE PAPER SALES: METRO	NA		NA	* WALDORF	$120,000
W-182	WOODCHIPS - ITASCA CC	100% PC		NA	LIILA PRODUCTS	$79,200
W-112	WASTE TIRE: HAULING/DISPOSAL	NA		NA	* FIRST STATE TIRE DIS.	$33,000
* Contracts available to CPV members					**TOTAL DOLLARS:**	**$39,317,504**

Exhibit 4

Appendix D

Minnesota Department of Corrections

POLICY

Number: 105.150
Issue Date: 2/1/00
Effective Date: 3/1/00
Page: 1 of 11

RIGHT TO KNOW PROGRAM

AUTHORITY: MN OSHA Chapter 5206

PURPOSE: To provide guidelines for the implementation, control and use of all flammable, toxic and caustic materials and hazardous waste programs.

APPLICABILITY: Department-wide

POLICY: All facilities will identify, collect, store and dispose of all generated hazardous waste in accordance with state and local mandated requirements. The facility safety officer/designee will manage identified hazardous wastes and maintain all required records in a designated location.

Each area supervisor will maintain current and accurate inventories of flammable, toxic or caustic materials (attached). Flammable, toxic or caustic materials stored in offender areas must be in a secure area and will be dispensed by staff.

Hazardous materials or chemical products will not be brought into a facility unless acquired through the procedures outlined in this policy. The facility safety officer will ensure all hazardous material/chemicals are assigned an individual Hazardous Material Part Number (HMPN) for central reference and traceability. Supervisors will ensure a Material Safety Data Sheet (MSDS) for each product is on hand prior to its use in their areas. The facility safety officer will approve storage areas for hazardous material/chemicals and at no time will hazardous material/chemicals be used, traded or stored in any other area of the facility other than the designated areas.

The facility safety officer is responsible for maintaining a current list of all known hazardous chemicals used in the facility. This list includes, at a minimum, the product name, name of the chemical manufacturer, the HMPN, and facility work area the chemicals are used. The facility safety officer will maintain a master file of all Material Safety Data Sheets (MSDS) on each chemical in a designated area(s).

Each facility may develop instructions to implement this policy.

DEFINITIONS:

Acid - corrosive materials whose water solutions contain hydrogen ions (H+). In sufficient amounts, these materials burn, irritate or destructively attach organic tissues such as the skin, lungs and stomach.

Base - corrosive materials whose water solutions contain hydroxyl ions (-OH). In sufficient amounts, these materials burn, irritate or destructively attach organic tissues such as the skin, lungs and stomach.

Caustic – material or element able to burn, corrode, dissolve or other wise eat away by chemical reaction.

1. Regardless of size or contents of the spill, staff will employ all precautionary means (appropriate personal protective gear will be used by anyone participating in this exercise.) The facility safety officer(s), A-team Officer in Charge, and the Watch Commander will determine whether an evacuation is necessary or if a "defend in place" action is sufficient. Spills equal to or greater than five gallons must be reported to the Minnesota Duty Officer for the Emergency Management Division (1-800-422-0798).

2. The hazardous waste generator licensee is responsible for maintaining the contingency plan for facilities required to have a contingency plan by the Minnesota Pollution Control Agency.

3. A copy of this program will be made available upon request to employees and their representatives.

REVIEW: Annually

REFERENCES: Minn. Stat. §151.
Minn. Rule 5206.
OSHA Standard 1910.1200(g).
ACA Standards 2-CO-3B-01, 3-4203 and 3-JTS-3B-05.

SUPERSESSION: Department Policy 105.150, "Right to Know," 10/15/99.
All facility polices, memos, or other communications whether verbal, written or transmitted by electronic means regarding this topic.

ATTACHMENTS: Non-Routine Tasks form
Control Log for Issuing Chemicals

Mark Carey, Deputy Commissioner
Juvenile and Community Services

Erik Skon, Assistant Commissioner
Adult Facilities

Appendix E

POLICY STATEMENT

UNIVERSITY OF MINNESOTA BOARD OF REGENT'S POLICY Page 1 of 1	CONSERVATION Pollution Prevention and Waste Abatement Adopted: June 11, 1992 Supersedes: Waste Abatement Policy 12/15/85

CONSERVATION

Pollution Prevention and Waste Abatement

The University of Minnesota is committed to excellence and leadership in protecting the environment. Our objective is to reduce all types of waste and emissions. We strive to minimize adverse impact on the air, water, and land through excellence in pollution prevention and waste abatement. By preventing pollution at the source, we can save resources, increase operational efficiencies, and maintain a safe and healthy work place for our students and employees. By abating those wastes that cannot be eliminated at the source, we can recover useful resources and reduce the environmental and economic burden of waste disposal.

We believe that environmental protection is everyone's responsibility. Its manifestation is valued and displays commitment to the University.

The University of Minnesota will achieve pollution prevention and waste abatement under the following guidelines. We will:

- Include the reduction of both hazardous and non-hazardous wastes and emissions at the source as a prime consideration in teaching, research, service and operations. The University is committed to identifying and implementing pollution prevention opportunities through encouragement and involvement of all students and employees.

- Give top priority to technologies and methods, which substitute non-hazardous materials and utilize other source reduction approaches in addressing all environmental issues.

- Vigorously pursue waste abatement programs such as recycling, reuse and purchase of recycled materials to reduce the need for disposal of waste that cannot be reduced at the source.

- Encourage pollution prevention and waste abatement through changes in purchasing policies and specifications.

The University of Minnesota seeks to demonstrate its leadership role in the State of Minnesota by aggressively adhering to all environmental regulations. We promote cooperation and coordination among higher education, industry, government and the public toward the shared goals of preventing pollution and abating waste.

Therefore, be it resolved, that the Board of Regents directs the President to establish effective pollution prevention programs and to develop policies, plans and resource to achieve that goal.