

2008 Biennial Report to the Legislature on the

Waste Management Act



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This report was printed on recycled paper manufactured without the use of elemental chlorine
(cover: 30% post-consumer; body: 100% post-consumer).

Total cost to prepare this report was \$5,600 including staff time, writing, editing, and printing.

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Introduction

This is the 14th *Waste Management Act Biennial Report*, and much has evolved since the first one was submitted to the Legislature in 1982. In the early 1980s, waste management consisted basically of landfilling, often in leaking landfills. It took great momentum and commitment to move the state toward the integrated system in place today. Nearly three decades ago, the Waste Management Act (Minn. Stat. §115A) established the philosophy that guides our actions for improving waste management in the state to:

- reduce the amount and toxicity of waste generated.
- separate and recover materials and energy from waste.
- reduce dependence on waste disposal.
- coordinate solid waste management among political subdivisions.
- develop financially secure waste facilities.

The Waste Management Act also set forth the following hierarchy of waste management preferences:

1. waste reduction and reuse.
2. waste recycling.
3. composting of yard waste and food waste.
4. resource recovery through mixed municipal solid waste composting or incineration.
5. land disposal which produces no measurable methane gas or which involves the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale.
6. land disposal which produces measurable methane and which does not involve the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale.

There are a number of other legislative reports that cover many topics once only addressed in this report¹, for example, the *Solid Waste Policy Report*², *SCORE Report*, *Report on Toxics in Packaging*, *Pollution Prevention Evaluation Report*³, *Electronic Waste Report*, *Reduction Progress Report*, and several one-time reports and studies on topics of special interest such as product stewardship, increasing recycling goals, and demolition debris recycling. Considering the number of related reports and the resources required (time and money) to produce them all, this *Biennial Report on the Waste Management Act* will focus primarily on what the other reports may not address.

This *Biennial Report* presents MPCA's recent progress and directions primarily in the areas of conserving resources and green living, especially as a key component under the umbrella of climate change and reducing our environmental footprint. This report highlights a number of examples of the work we are engaged in with our partners to address the most pressing issues of the day, and we share the results we've accomplished so far. We also present some of the new directions we are heading in.

Our focus on building strong partnerships and providing both technical and financial assistance will ultimately result in a cleaner environment through shifting attitudes and behaviors. In looking back over the past biennium, we find ourselves at a "tipping point." Product stewardship, green building, and green energy were emerging, but not mainstream—now they are. Looking ahead for the MPCA means focusing on thoughtful priorities and strategic use of our resources; it means measuring and showing results in ways that are meaningful and can inform continuous improvements; it means seeking and promoting new approaches that not only protect our environment and public health but are market-driven and may spur economic development.

¹ Minn. Stat. §115A.07, Subd. 2. Biennial Report. Before November 15 of each even-numbered year the commissioner shall prepare and submit to the senate and house of representatives committees having jurisdiction over environment and natural resources and environment and natural resources finance a report of the agency's operations and activities pursuant to sections 115A.01 to 115A.72 and any recommendations for legislative action. The report shall include a proposed work plan for the following biennium.

² The 2007 *Solid Waste Policy Report* can be found at <http://www.pca.state.mn.us/publications/reports/lrw-sw-1sy08.pdf>.

³ 2008 *Pollution Prevention Evaluation Report* can be found at <http://www.pca.state.mn.us/publications/reports/lrp-p2s-2sy08.pdf>.

Part 1. Conserving resources

Waste reduction, reuse, and recycling are the preferred methods of managing our waste (Waste Management Act, Minn. Stat. § 115A.02). Reducing waste at its source conserves resources, saves energy, and prevents greenhouse gas emissions to a greater degree than recycling and all other waste management methods. Information on waste generated in Minnesota has been tracked for more than 15 years in the MPCA *SCORE Report*. Recent trends in waste generation show per capita waste generation slowing. In the last few years, Minnesota showed no increase in per capita waste generation. This success can be attributed to the fact that typically, waste reduction programs help organizations and consumers save money because they are able to reduce items purchased and often disposal costs as well. Ultimately, success in waste reduction depends on the choices that all people make.

Recycling also has both environmental and economic benefits—it reduces the need for landfill space, reduces carbon dioxide emissions, reduces water and energy consumption, and conserves natural resources. Last year alone, Minnesotans recycled over 2.6 million tons of material. Recyclable material has tremendous economic value. The recycling industry directly and indirectly supports approximately 20,000 jobs; paying an estimated \$760 million in wages and adding nearly \$3 billion to the state's economy. Recycling reduces the energy consumed by creating new products which in turn lowers a community's greenhouse gas emissions and lowers the overall impact of climate change in Minnesota and beyond. In 2006, residential recycling efforts saved 46 trillion BTUs of energy—this equates to enough energy to power all of the homes in Ramsey County for a year. Every year, Minnesotans throw out more than 1.3 million tons of material that could have been recycled. This waste has an estimated value of \$312 million and costs Minnesotans \$200 million to throw away.

Minn. Stat. § 115A.55, Subd. 2, authorizes the MPCA to provide technical assistance and implement programs to reduce the amount of waste generated. To that end, the MPCA has several programs that provide technical assistance and tools to help businesses, organizations, government, and residents reduce waste. Strong partnerships are critical to the success of these initiatives; the MPCA works regularly with many key partners such as counties, cities, waste haulers, technical assistance programs, Minnesota Grocer's Association, Minnesota Waste Wise, the Minnesota Technical Assistance program, and others.

Resource management programs

Resource management programs provide organizations the opportunity to use their waste hauling contract as a tool to reduce waste and manage their resources. These programs currently work best in the metro area and tend to favor larger organizations. During the last two years, MPCA supported a few pilots of resource management contracts, developed new sample contract and RFP language for organizations to use, and held a workshop to educate counties on resource management programs. Analysis is still underway on the pilot tests, but one of the test sites increased its diversion rate (recycling and organics recycling) from 11% to 53% and reduced its overall waste generation by an estimated 5%. They also reduced waste disposal costs by \$2,000 per month, enough to establish and pay for organics recycling at their facilities. These pilot projects helped MPCA staff gain valuable insight on ways resource management contracts can be changed so they can work even better in the future. MPCA plans to continue to promote resource management to organizations as a tool to reduce waste and increase recycling and to work with our partners' to help them promote this innovative approach.

Retired Engineers Technical Assistance Program (RETAP)

RETAP offers organizations non-regulatory assistance on pollution prevention, waste reduction, and energy conservation, and operating costs (authorized under Minn. Stat. § 115A.55 and 115A.152). The program employs retired engineers, scientists, and managers, each with 30 to 40 years experience in business, technology, and waste reduction. RETAP clients include businesses, industries, and institutions (primarily nonprofits, government, and small businesses).

During the last two years, RETAP conducted 50 site visits, increased its numbers from 12 to 18 consulting retired engineers, developed a new tracking and analysis system to increase consistency of assessments and record keeping, and plans to follow-up with client organizations to document implementation of RETAP

recommendations. In that same time period, clients acting on RETAP recommendations have saved \$15,000 to \$20,000 in reduced energy and waste disposal costs.

Recycle More Minnesota

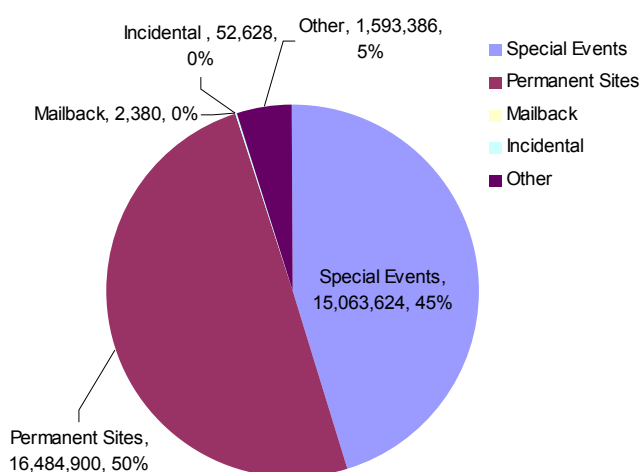
Minnesota currently recycles 42% of our trash—a rate that hasn't increased significantly in the past 10 years. MPCA's goal is to increase the state's recycling rate to 50% by 2011 and to 60% by 2025. The Recycle More Minnesota campaign, a joint venture between the MPCA and the Recycling Association of Minnesota, is designed to increase recycling in the state by educating the public about its economic, energy-related, and environmental benefits. This multiyear effort is initially focused on the residential sector. In the future, Recycle More will target the commercial sector, schools, public entities, and away-from-home recycling. The www.recyclemoremn.org website is the campaign's primary outreach tool, and a statewide media campaign was conducted using radio, newspaper, theater ads, and print ads. Currently, the Curbside Value Partnership (an aluminum industry funded group with the goal of increasing curbside recycling nationwide) and local governments are working to measure the impact (increase in tons collected) of implementing local recycling campaigns. Preliminary results from the three pilots in St. Louis and McLeod Counties and Western Lake Superior Sanitary District are expected in February or March. Additionally, an economic evaluation is underway and is expected to be complete in February. The Recycle More Minnesota campaign was named the 2008 recipient of the National Recycling Coalition's (NRC) Outstanding Public Education Award.

Electronic waste

The Electronics Recycling Act of 2007 requires that all covered electronics collected from households be recycled. Manufacturers of video display devices were required to register annually and pay a fee, and then collect and recycle a percentage of the weight of their sales into the state. The law encompasses households who have electronic waste (e-waste) to dispose of, as well as collectors of e-waste, recyclers, and all those involved, including manufacturers of video display devices, local governments, local retailers of electronics, computer repair stores and appliance shops, as well as major national retailers.

The MPCA's role is to help the parties involved meet the obligations of the law by facilitating meetings and educating them about their role and overall implementation of the program. Over 33 million pounds of electronics were properly collected and recycled from within the state from July 1, 2007 to June 30, 2008. The manufacturers have paid for a considerable portion of the recycling costs which have resulted in reduced fee or even free collections at many cities/counties and local collection locations. This has saved money for local governments and other electronics collectors who were paying based on weight in the past. In addition, some new companies were formed to collect and recycle e-waste and employees were hired to manage this increase in volume. Also, new collection locations were created statewide for electronics that did not exist in the past making it easier and more convenient for Minnesotans to turn in old electronics. (GRAPHIC IS FOR FY08)

Statewide e-waste collections by type (pounds)



Grocery sector initiatives

The grocery sector is estimated to be one of the highest waste generating sectors in Minnesota. The MPCA's strategy for helping grocery stores reduce waste includes both targeted outreach to the industry, and broader, consumer-focused education for the general public. The MPCA has partnered with the Minnesota Grocers Association to survey the environmental needs and potential for improved environmental practices at grocery stores. MPCA has given two grants to the grocery sector. One was given to the Minnesota Grocers Association to help small grocery stores purchase and promote reusable bags; reusable bags have become much more mainstream (see <http://reduce.org/bags3.html>). The other grant was awarded to Minnesota Waste Wise to promote waste reduction, recycling, composting, and waste audits at grocery stores; the stores that implement

and track waste reduction activities are given a monetary voucher for each. Future work identified in the grocer survey will likely focus on cost-saving measures that also meet environmental goals, such as improved inventory management, and/or reduced disposal costs.

School sector initiatives

For years, the MPCA has been working with schools to reduce bus diesel emissions, remove mercury, and promote composting, recycling, energy efficiency, and environmentally preferable purchasing practices. In 2007, the MPCA established a sector-based approach to working with schools. This enables the MPCA to strategically prioritize our efforts based on what is most meaningful to the schools, design and deliver services or products to them efficiently and effectively, and build effective relationships with the schools to maximize implementation of environmental practices.

In the last biennium, MPCA surveyed superintendents to identify the highest priority environmental issues in the district facilities; energy efficiency, reducing paper use, and recycling were the top concerns. As a result, the MPCA offered environmental assessments including information on energy efficiency and recycling, free VendingMisers devices which reduce energy used by refrigerated beverage vending machines by as much as 60%, saving on average \$150 in energy costs annually, and paper reduction presentations and kits to participating schools. In addition, the Get the Mercury Out Now program funded free removal of mercury-containing equipment and exchanged it for mercury-free equipment. Mercury cleanups can cost schools \$5,000 to \$250,000 and typically include short-term school closures.

2007-2008 results of MPCA school initiatives

Environmental assessments	<ul style="list-style-type: none"> 65 completed by RETAP.
VendingMisers	<ul style="list-style-type: none"> 85 distributed. \$12,750/year saved. carbon footprint reduced by up to 60% per vending machine.
Mercury equipment exchanges	<ul style="list-style-type: none"> 152 schools participated. 3,676 pounds mercury removed.

Minnesota Waste Wise

Minnesota Waste Wise (MWW) is a nonprofit, member-supported program that helps Minnesota businesses reduce waste, recycle materials, and save money. Formed in 1994 as a private/public partnership between the Minnesota Chamber of Commerce and the MPCA, MWW provides:

- on-site waste assessments.
- information about waste reduction, reuse, recycling, and proper disposal.
- waste reduction plans.
- waste exchange opportunities in partnership with the Minnesota Materials Exchange Alliance and through business-to-business connections.

In 2007–2008, MWW helped members reduce waste by nearly 1.2 million pounds, reuse over 400,000 pounds of materials, recycle over 10 million pounds of materials, compost over 750,000 pounds of organics, and save over \$3.9 million.

Minnesota Technical Assistance Program

The Minnesota Technical Assistance Program (MnTAP), funded by the MPCA and located at the University of Minnesota, provides assistance to help businesses (and to a lesser degree, government entities and nonprofit organizations) reduce waste, maximize resource efficiency, prevent pollution, reduce energy use, and reduce costs. Energy efficiency activities resulted in a reduction of 42 million pounds of greenhouse gas in 2007 and 37

Results of MnTAP's pollution prevention and energy efficiency work with Minnesota manufacturers

	2007	2008
Reduction in total waste (pounds)	1.6 million	1.7 million
Water conserved (gallons)	6.8 million	75.5 million
Reduction in kWh	17 million	13 million
Reduction in energy (therms)	385,600	684,064
Reduction in greenhouse gases (pounds)	42 million	37 million
Cost savings	\$1.9 million	\$3 million

million pounds in 2008. Documented pollution prevention and energy efficiency activities resulted in significant reductions in greenhouse gas emissions and saved Minnesota businesses nearly \$5 million dollars over the last two years.

Green building

The MPCA's Green Building program strives to create awareness of and commitment to environmentally sustainable building design and construction practices among Minnesota's local and state government officials, building professionals, product suppliers, and consumers. Our efforts help to reduce the state's carbon impact through reduced waste and material use, as well as greater energy efficiency and water conservation, better site design, and installation of renewable energy technologies. During this biennium, we developed partnerships and facilitated development of programs that continue to increase Minnesota's capacity to implement sustainable building practices throughout the state.

Training

- Trained more than 200 builders and remodelers on advanced framing techniques to reduce lumber used and construction waste generated in residential construction.
- Partnered with Minnesota Building Officials to offer green building courses at their annual educational institute.
- Trained nearly 200 local government representatives about LEED (Leadership in Energy and Environmental Design) and the Minnesota Sustainable Building (B3) Guidelines.
- Sponsored and helped plan green building tracks for the annual Energy Design Conference and Expo in Duluth, a regional training event for over 1,300 building contractors and utility representatives.
- Participated with the U.S. Green Building Council–Mississippi Headwaters Chapter to offer LEED workshops and tours.

Financial assistance

- Launched the Minnesota GreenStar Certified Green Homes and Remodeling program with a 2006 Environmental Assistance Grant and MPCA staff technical assistance.
- Facilitated development of a comprehensive renewable energy curriculum through a 2006 Environmental Assistance Grant to the University of Minnesota to create an online renewable energy resource for design professionals (<http://www.rearch.umn.edu/index.html>). Educated more than 1,400 participants.

Increased demand for green building through the Living Green Expo and the Eco Experience Eco House at the State Fair. Since 2006, approximately 350,000 fairgoers have visited the Eco Experience each year.

Future activities

Looking ahead, MPCA's ultimate goal is to reach or exceed the recommendation of the Minnesota Climate Change Advisory Group to achieve a reduction of 3% in waste generation per capita by 2025. This can be accomplished by continuing to provide organizations with technical assistance and tools to reduce waste and increase recycling, by building and fostering strong partnerships, and by changing behaviors and attitudes.

One outgrowth of the *2007 Solid Waste Policy Report* was a process to develop a voluntary shared responsibility to increase the collection and recycling of beverage containers in Minnesota and Wisconsin. Historically this burden has been placed on local governments to fund and organize effective systems, even though they have no control over the design of the beverage container. The MPCA, Wisconsin Department of Natural Resources, both Minnesota and Wisconsin Beverage Associations, the Solid Waste Administrators Association, local units of government, waste haulers, and others are all working together to strategize how to boost beverage container recycling beyond its current plateau. Doing so will have a positive impact on our local recycling markets and help the economy by creating a demand for additional jobs.

Part 2: Environmentally Sustainable Living

The ultimate goal of fostering a society that lives in an environmentally sustainable way is to preserve and or improve the condition of Minnesota’s air, water, and land. By focusing efforts on increasing the environmental literacy of Minnesota citizens, they will become more aware of the environmental impact of everyday choices. In 1990 and subsequent amendments, the Minnesota Legislature directed the MPCA to provide outreach and education to Minnesota citizens, business, and government agencies on principles and processes that promote a sustainable lifestyle (Minn. Stat. § 115A.073). The following examples showcase the MPCA’s outreach and education efforts during this biennium.

Living Green Program

MPCA’s Living Green Program targets education, outreach, and technical assistance efforts to help Minnesota residents decrease their individual contributions to greenhouse gas (GHG) emissions, which includes their waste-related behaviors. An increased awareness of opportunities to reduce GHG emissions will allow Minnesotans to prioritize solutions and act on them. Two of the largest MPCA outreach and informal education events include the Living Green Expo and the Eco Experience. A significant amount of the topics covered directly educate the public about waste-related issues. The Minnesota State Fair is a primary partner, but many other businesses, government, and nonprofit organizations are actively involved and contribute greatly to the success of these events. MPCA’s role is to develop, coordinate, and manage the activities that make up these events. Furthermore, MPCA has taken steps to make both events shining examples of green event management, which is being duplicated at other events around the state. The Living Green 365 newsletter and web page are two smaller outreach efforts—in 2008, about 8,000 people received tips for living green 365 days of the year.

In 2008, the attendance at the Living Green Expo increased by 20% from the previous year. The MPCA partnered with the University of St. Thomas to conduct a survey to begin to understand, and hopefully measure, social behavior. We learned the top five things that people are currently doing to be green include:

- 81% recycle
- 69% donate reusable items
- 64% use a reusable water bottle
- 60% install compact fluorescent light bulbs

In addition, we learned that 92% of the responders were Caucasian. The Living Green Program is now exploring other venues and methods to reach a more diversified audience.

Sustainable community assistance

The MPCA coordinates the Minnesota Sustainable Communities Network (MnSCN) and the NextStep web site www.nextstep.state.mn.us and its associated NextStep monthly e-newsletter. The primary focus of MnSCN and NextStep is to assist individuals, organizations, and communities to move toward sustainability, and to

Minn. Statute § 115A.073

Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should:

- *understand ecological systems.*
- *understand the cause and effect relationship between human attitudes and behavior and the environment.*
- *be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.*
- *understand the effects of multiple uses of the environment.*

Pupils and citizens shall have access to information and experiences needed to make informed decisions about actions to take on environmental issues.

Highlights of Living Green events

	Living Green Expo	Eco Experience
Average annual attendance	23,500	350,000*
Public volunteers (2008)	300	300
Vendors/partners (2008)	240	119
Waste diverted from event (2008)	95% (8,000 pounds)	50%

**In addition, an average of 50 million media impressions were noted, indicating a much larger audience was reached.*

encourage networking, information exchange, and better access to assistance. Topics include agriculture, buildings, business, communities, ecosystems, education, energy, individual choices, land use, transportation, and water. Currently, over 20 agencies and organizations are listed as sponsors of the NextStep web site. This network consists of an even mix of individuals from local governments, nonprofit organizations, businesses, educational institutions, and other organizations in Minnesota (and bordering areas). As of June 2008, there were over 3,200 subscribers to the e-newsletter, and over 50,000 monthly site visitors.

MPCA staff also offer direct technical assistance to communities throughout the state through presentations, telephone and e-mail assistance, site visits, and referrals to other resources. In addition, financial assistance is available through the MPCA's Environmental Assistance Grant Program for communities seeking sustainability activities. In the past two years, 33 grants, totaling \$1,073,320, were awarded to support these efforts.

Regional collaborations

Outreach and education through regional collaborations such as Brainerd Area Environmental Learning Network and North Central Lakes Collaborative is another component in furthering sustainable attitudes and behaviors.

Brainerd Area Environmental Learning Network (BAELN) is comprised of many partners including 1000 Friends of Minnesota, Central Lakes College, Crow Wing County Soil and Water Conservation District, Initiative Foundation, Minnesota Department of Natural Resources, Minnesota Department of Transportation, the Nature Conservancy, Paul Bunyan Trail Association, and University of Minnesota Extension. The MPCA coordinates the efforts of BAELN partners as they work together to create opportunities for people to receive timely information on environmental and sustainability issues, along with opportunities to network with other professionals. Over the last two years, they provided 16 speaker events, 1 tour, 1 multi-speaker event, and a five-year celebration with 850 attendees.

"BAELN boasts a diverse lineup of speakers and topics, and the numbers of participants is impressive. As a BAELN partner, I believe 1000 Friends of Minnesota has reached more citizens on sustainability and environmental issues than if we were working alone. BAELN has helped us to promote our mission to a wider audience. Through our partnerships in BAELN, we have been able to work with BAELN partners on other projects."

—Philip Hunsicker

North Central Lakes Collaborative (NCLC): The MPCA, acting as coordinator, partners with other state and local governments, nonprofits, businesses, lake representatives, and citizens to promote sustainable private and public land use practices that protect Minnesota's lakes. The collaborators can see and pursue opportunities and innovative ideas outside of the immediate work being done. For example, out of discussion and concern in NCLC about development pressures on the land, communities and water, 1000 Friends of Minnesota offered to spearhead an effort for NCLC to create a Conservation Design Scorecard to help local units of government, developers, and communities better understand and assess impacts and benefits of proposed developments.

Environmental education efforts

Sharing Environmental Education Knowledge (SEEK) is a partnership of environmental educators in Minnesota, sharing resources and events with educators, citizens, students, and others interested in environmental education. It is a dynamic, evolving website that is the home of all environmental education resources in Minnesota. Currently, it includes a comprehensive directory of over 1,300 resources, press releases, employment opportunities, environmental education (EE) research abstracts, EE links, a calendar of events, and much more. Minnesota organizations that engage in environmental education and provide EE resources and/or services are eligible to become a SEEK partner. SEEK currently has 142 partners. The Minnesota Pollution Control Agency hosts the SEEK website and provides staff for the program. SEEK has averaged over 118,000 hits per month over the last two years, and web pages and resources are regularly updated. In addition the monthly electronic newsletter, the SEEK Bulletin, goes out to hundreds of EE providers in Minnesota.

Environmental Education capacity building workshops and discussion groups/Minnesota Environmental Education Initiative: Capacity building is about developing effective organizations and individual leaders in order to achieve comprehensive EE programs at the state and local level. It involves an innovative partnership that provides EE leaders the information necessary to reach larger audiences than the MPCA could alone. EE leaders are provided the support and incentive to educate their audiences on current environmental and

sustainability issues to encourage environmentally friendly and socially responsible behaviors. Educators are continuously looking for information and support to help them educate on emerging issues in a fair and effective way. The MPCA plans to continue to provide this valuable resource. Over the past two years the MPCA has focused its efforts through the Minnesota Environmental Education Initiative, which is a partnership between the University of Minnesota Extension and the MPCA. This initiative will develop leadership in Minnesota's environmental education community across the state, which in turn will result in sustainable actions in our communities.

The Environmental Education Advisory Task Force (EEATF) is Minnesota's only statewide advisory group concerning environmental education. The task force, which will expire June 30, 2010, was created under the authority of the commissioner of the Minnesota Pollution Control Agency and takes the place of the Environmental Education Advisory Board (EEAB) whose activities "sunset" in June 2008 by legislative mandate. The EEATF consists of 15 Minnesota environmental education professionals, selected from around the state and representing various sectors of the EE community. This task force is focused on several specific EE initiatives.

- **GreenPrint, third edition:** The EEATF will provide strategy and direction to the marketing and use of GreenPrint3 which is the state plan for environmental education for 2008–2018. It was developed by the EEAB and supporting staff with input from the environmental education community. The GreenPrint is designed to serve anyone who educates, provide funds, develops programs, supports efforts, and sets policies that affect environmental education in Minnesota.
- **Environmental Learning in Minnesota Fund (ELM):** This new grant program is being offered through the Minnesota Association for Environmental Education (MAEE), in partnership with the EEATF to support environmental education activities in Minnesota. Two types of grants will be awarded: school grants (\$3,000 per recipient) and one GreenPrint grant (up to \$20,000).
- **We3 Bridging Pilot Project:** The goal of the We3 initiative is to develop educational resources, expertise, training, and on-going support and evaluation for a classroom- centered, project-based, approach for EE in Minnesota K-12 classrooms with the theme of "We all Learn, We all Save, and We all Win!" (We3). The focus of Phase 1 of this project would be to e-link EEAT member-agency resources and suggested activities to the Department of Education science standards in a matrix, that any teacher could use to create lesson content for their classrooms.

Part 3. Looking Ahead

Few would doubt that we are living in a time of exponential change. Advances in technologies literally make last year's cutting-edge ideas nearly archaic today. Economic uncertainties make a market strong one day and not viable the next. The environmental policies we once so comprehensively considered and carefully crafted seem to fall short of the breadth of today's global environmental concerns. It seems that we can no sooner address one topic before another one appears. Perhaps a fortunate side effect of the recent spotlight on global warming and climate change has been a focusing of our attention and coalescence of disparate interests into a common cause. Waste management, once the umbrella over so many environmental concerns, is now a subset of the even bigger climate change umbrella.

For the MPCA, climate change has offered new opportunities to foster understanding of environmental issues (old, current, and emerging) and to take responsibility for actions to protect and conserve the environment for future generations. New technologies, new industries, and new sources of energy offer challenges, but also tremendous new opportunities for Minnesota. The current recession demands that we prioritize our actions and build lasting active partnerships to leverage the best returns on our investments. Just as important, we must be able to show our efforts are having a positive impact on the environment, the economy, and our society.

MPCA sustainability plan

The MPCA's new strategic plan calls for the MPCA to lead the way to minimize its environmental footprint and assist other public entities to do the same. MPCA chose to serve as a catalyst for these actions by appointing the first sustainability manager in the state government system to reduce our own environmental footprint, in addition to a staff-led "green" team, called ARROW. The enhanced sustainability effort just got under way in the summer of 2008. To date, examples of progress include joining the Climate Registry and encouraging 12 other Minnesota companies, DNR, and Metro Council to join. MPCA will report 2008 baseline information and undergo third-party verification in 2009; lead the Interagency P2 Advisory Team in developing greenhouse gas emission recommendations for all state agencies as recommended by the Minnesota Climate Change Advisory Group; and develop an MPCA sustainability plan for operational improvements related to greenhouse gas emissions. Focal areas for 2009 include green building (energy efficiency/renewable energy), source reduction, vehicle miles traveled/fleet management, green IT (energy efficiency focus), and closed landfills. Baseline measures and reduction targets are being established where metrics do not currently exist. Some impressive results can already be noted:

- **Energy efficiency/renewable energy.** MPCA's leased space in Mankato Place has a combined solar panel power system and an advanced daylighting system resulting in a 23% reduction in electrical power consumption. (The skylight system eliminates 80% of the electricity normally required for electric lighting, and the roof-top solar panels provide six% of the annual electricity consumed by tenants.) MPCA's St. Paul office purchased green power (wind) to match employee commitments for their own green power purchases, and has increased monthly purchases from 37,500 kWh monthly to 165,000 kWh monthly (about 16% of energy used since November 2006). The Brainerd office purchases 100% green power.
- **Source reduction** was identified by the Climate Change Advisory Group as one of the more cost-effective greenhouse gas emission reduction strategies. MPCA staff already use half the typical amount of paper used per person in a commercial office building, but we are attempting to reduce at least another 10%, through printing reduction software, capture and reuse of "second chance" paper, and increasing availability and distribution of documents and invoicing through e-commerce, rather than paper copies. Our FY08 baseline is 14,141 reams of paper.
- **Vehicle miles traveled/fleet management.** MPCA increased its use of E85 purchases from 14.5% in 2006 to 25.3% from January–September 2007, ranking MPCA sixth out of 42 agencies reporting. Further, MPCA exceeds the requirements of the federal Energy Policy Act of 1992, by leasing or purchasing 85% alternative fuel vehicles; MPCA's fleet also includes 6% hybrid vehicles to reduce petroleum consumption.
- **Green IT (energy efficiency focus).** MPCA has implemented power management functions for desktop computers and monitors, saving 632,000 kWh per year, and nearly \$50,000 in energy. Additional software

controls are being investigated. The MPCA also replaced remaining CRT monitors with flat screen monitors for additional energy savings.

- **Closed landfills.** Over 26 million pounds of methane were collected and destroyed at 21 sites in FY08 and energy production from methane gas is occurring or engineered at two sites. Solar panels are used to power a flare to destroy methane at one site. Native plantings are specified for selected areas of closed landfill construction sites, and at one site, MPCA is managing a native oak savanna. Compost was used as a cover component at three sites, and recycled-content educational signage and benches were used at the Pickett Landfill, which is on the Heartland Trail.

For FY09, MPCA plans to:

- Pursue additional opportunities for green construction and remodeling through lease renewals at two of MPCA's offices located in Detroit Lakes and Marshall.
- Reduce vehicle miles traveled through more efficient routing of work trips (using GIS and other technologies), carpooling, and increasing video/web conferencing capabilities.
- Take action to eliminate purchase of an IT product that contains a "superwarmer" greenhouse gas (compressed gas for cleaning PCs and other equipment), and explore strategies for server virtualization, virtual desktop computers, and server room cooling efficiency to gain additional energy savings.
- Explore opportunities at certain closed landfill sites for wind turbines, for diesel emission retrofits and for idling reduction from heavy equipment at construction sites (particularly those located near residential areas) and further opportunities for energy production from methane gas.

Stakeholder process to achieve climate change goals through integrated solid waste management

In February 2008, the MPCA completed its biennial *Solid Waste Policy Report* to the Legislature. It recommended that a multi-stakeholder group be convened to address long-term policy needs to help meet the greenhouse gas reduction and renewable energy goals from solid waste management activities contained in the Minnesota Climate Change Advisory Group report (reduction of at least 75 million metric tons of greenhouse gas from solid waste management activities by 2025 and achieving 25% renewable energy by 2025). This includes strategies for increasing recycling of materials, reducing waste generation, and recovering energy from materials and by investigating possible transportation-related reductions. The recommendations from the stakeholder group must include timetables and identify specific targets, estimated greenhouse gas reductions, and energy conserved or renewable energy produced from each target. This stakeholder process began in December 2008 and will run through June 30, 2009, at which time, the group will submit its recommendations to the commissioner of the MPCA.

Climate and energy assistance to cities and communities

Significant amounts of Minnesota's greenhouse gases come from urban areas, and local government decisions influence much of those emissions. For this reason, MPCA's strategic plan includes a goal that "MPCA catalyzes public entities to take actions to reduce greenhouse gas emissions by 15% between 2005 and 2015." MPCA staff have funded and been closely involved in a number of initiatives to help Minnesota's public entities reduce their carbon footprints:

Green Cities Program. MPCA, along with the League of Minnesota Cities, is developing a voluntary Green Cities Program to identify and support implementation of a set of sustainable development best practices focusing on energy conservation that will lead cities beyond compliance and encourage a culture of innovation. The Legislature asked for a report on this effort for the 2009 session.

Model ordinances. The MPCA is funding an update of the state's Model Ordinances for Sustainable Development, (first developed in 2000 under legislative direction) with an eye toward reducing energy use. Model language covers growth management, neighborhood design, infrastructure, green buildings, and economic development that will serve to guide local governments toward a more sustainable future.

Physical development and land use in the state are significant areas identified by the Climate Change Advisory Group for reducing greenhouse gas. The first project in development by the Northern Counties Lakes Collaborative and 1000 Friends of Minnesota, will develop a Conservation Design Scorecard to be used

by local government as it weighs development proposals in rural Minnesota. Resulting land use outcomes driven by use of the scorecard will include more contiguous, less spread out, and more energy efficient infrastructure. The second project, recently begun with the Minnesota Department of Health, aims to help Community Health Boards use sustainable urbanism metrics (part of the Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) rating system), a new national standard for designing complete, compact, and connected communities that foster lower energy use and healthier citizens.

Climate/Energy Citizen Partnership Grants. MPCA provided small grants of up to \$10,000 to 10 cities and counties in spring 2008 to conduct projects that will strengthen and encourage partnerships between citizens and local government in reducing community greenhouse gas emissions and energy use. The purpose of these grants was to increase cooperation between citizens and local governments, and to foster the development of local models and approaches that will effectively address climate and energy challenges. MPCA will share information and success stories from these projects with other communities. Communities receiving funding included Duluth, Edina, Lake City, Mahtomedi, Sauk Rapids, Virginia, White Bear Lake, and Winona, as well as Cook County and the Hubbard County Regional Economic Development Commission.

Climate Change Corps. The Minnesota Climate Change Corps, an initiative of the Minnesota Retired Engineers Technical Assistance Program, was started by MPCA in November 2007 to help cities and county governments take actions that both protect the environment and lead to cost savings and other economic benefits. The corps is comprised of eight skilled, retired professionals who work on either long or short-term assignments to help reduce a community's carbon footprint. Communities receiving assistance so far include Minneapolis, Milan, Roseville, Falcon Heights, Cook County, and Arden Hills.

Outreach and education. On January 22, 2009, MPCA, along with Minnesota's major local government associations and the Minnesota Department of Commerce—Office of Energy Security, is sponsoring *Reducing Energy Costs in Local Government*. This conference in St. Cloud seeks to assist local governments to take actions now that can reduce their energy costs in areas such as buildings and transportation, and highlights case studies of communities that have successfully reduced their spending on energy.

Future of the Waste Management Act Biennial Report

Originally the *Waste Management Act Biennial Report* was a unique tool for communicating the work plan and budget of the Office of Environmental Assistance's precursor entities (the Waste Management Board and then the Office of Waste Management) to its close counterpart in the Legislature, the Legislative Commission on Waste Management (LCWM). The LCWM was sunset in 1996 and the Office of Environmental Assistance has merged with the MPCA. The work plan and budget of the current MPCA is addressed through the Executive Branch process.

We are in the process of reviewing our growing list of legislatively mandated reports to determine how best to meet the needs and interests of the Legislature in the most effective and efficient manner.



Minnesota Pollution Control Agency

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