

NATIONAL WILDLIFE FEDERATION



Environmentally Preferable Purchasing in the Great Lakes Region: A Survey of State, Municipal and Institutional Programs

February 2007



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Acknowledgments

The National Wildlife Federation is grateful to Cameron S. Lory and Amy E. Scott-Runnels of INFORM, Inc. for their extensive work on this project. INFORM, Inc. is an independent research organization that examines the effects of business practices on the environment and on human health. We appreciate the assistance of NWF intern Kristi Skebo for assistance in compiling additional information on legislation, executive orders, and resources, former NWF volunteer Eileen Pritzker for compiling information on state purchasing Web pages, and Shell Rumohr for additional assistance.

Funding for this project was generously provided by the U.S. Environmental Protection Agency (grant number GL-96595701-0). All views, conclusions and recommendations expressed in this report are solely those of the National Wildlife Federation and authors, and do not necessarily reflect the views of U.S. EPA.

Report design and layout by Sara E. Jackson (NWF).

This version of the report contains corrections to several minor errors found in the initial version (January 2007), concerning the chapter number of the Columbus City Code related to environmentally preferable purchasing on p.21, contact information for the states of Illinois and Pennsylvania on p. 47, and the URL for the Illinois EPP program on p.50.



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Preface

Purchasing by state and local governments accounts for over \$500 billion in economic activity every year in the U.S. Unfortunately, these goods and services often come with an environmental price as well – toxic chemicals are found in many products or may be released during their manufacture and disposal. Of particular concern are chemicals that are persistent, bioaccumulative, and toxic - PBT chemicals. These chemicals – which include mercury, PCBs and dioxins – are responsible for widespread fish consumption advisories throughout the Great Lakes region. Equally troubling, additional PBT and related chemicals are increasingly being found in people and the environment in the region and elsewhere. While some problematic chemicals have been phased out from various uses over the past several decades, a number of toxic chemicals continue to be used in diverse applications, including in some medical products, building materials, and computers and other electronic equipment.

An approach gaining increasing attention in addressing this problem is environmentally preferable purchasing (EPP), whereby an entity (including government agencies or private businesses) makes concerted efforts to procure goods and services that are more environmentally benign. Because of the magnitude of purchasing by states, municipalities and institutions, decisions to purchase greener products by even a few of these entities can have a significant effect

on the market for such products. Greener purchasing can result in reduction in toxic chemical releases from both products (which would otherwise occur during manufacture, use, and/or disposal), as well as from services such as energy generation; more significant efforts at conservation, efficiency and procurement of renewable energy means less mercury emissions from coal-fired power plants in the region. These latter efforts can also contribute to reduced greenhouse gas emissions, which will help address the threats to the region from global warming.

While the importance of products and services as a source of pollution has been increasingly recognized, it appears there has been less emphasis on promoting EPP as a tool to address this problem, in particular in the Great Lakes region. With this report, the National Wildlife Federation is attempting to address this gap. The report assesses EPP programs in the eight Great Lakes states, eight municipalities and three universities, with an emphasis on policies addressing PBT chemicals. While there are significant limitations in existing programs, there appears to be momentum toward increasing awareness of the potential for various policy tools – including environmentally preferable purchasing – to contribute to reduced toxic chemical uses and releases, and ultimately to a healthier ecosystem and economy in the Great Lakes.

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Executive Summary

The Great Lakes region continues to suffer from contamination by toxic chemicals, including those that are persistent, bioaccumulate in organisms, and are toxic in relatively low concentrations (i.e., PBT chemicals). Statewide fish consumption advisories for mercury are in place in seven of the eight Great Lakes states, and numerous individual advisories also exist for other PBT chemicals such as polychlorinated biphenyls (PCBs), banned pesticides (such as DDT), dioxins, and other chemicals. In addition, research is increasingly showing the presence of other chemicals (such as polybrominated diphenyl ether (PBDE) flame retardants) in sediments, fish, and people in the region.

Given the importance of certain products as sources of some of the chemicals of concern (either during production, use, or disposal), there has been increasing attention directed at environmentally preferable purchasing (EPP) as a means to in part address this problem. However, to our knowledge, there has been no recent effort to assess the development and implementation of EPP programs in the Great Lakes region. This project was undertaken with several goals, including identifying existing mandates for EPP work (e.g. legislation or executive orders), the extent of existing EPP programs (including chemicals and product categories addressed), the support for these programs, and barriers to more effective implementation. The survey targeted the eight Great Lakes states and a subset of municipalities

and institutions in the region.

Results of this work indicate a variety of EPP efforts are underway in the Great Lakes region, and some of them directly or indirectly can impact uses and releases of PBT and other toxic chemicals. Some of the key findings were:

- While seven of the eight Great Lakes states reported having an environmental purchasing policy in place, only three states (Illinois, Michigan, and Minnesota) reported having staff working on environmental purchasing
- While a number of laws and executive orders address EPP, very few of these involve purchasing directed explicitly at PBT or other toxic chemicals in the states
- Most state purchasing officials responded that they have policies addressing one or more mercury-containing products; though not formally adopted through EPP programs, most states also have laws involving bans or phaseouts of one or more mercury-containing products
- Apart from legislative policies directed at PBDEs in three states, there is minimal targeting of other PBT or other toxic chemicals in purchasing programs
- Among municipalities, Buffalo and Columbus were the only cities with resolutions or ordinances requiring adoption of EPP policies, and Buffalo's was the only

policy focused on PBT chemicals

- Among municipal and university programs, recycled paper or other recycled content products and purchase of Energy Star equipment is a common feature of EPP programs
- Limited financial resources was identified as the most common barrier to EPP program implementation in states and municipalities, followed by lack of mandate; staffing limitations were identified as a further impediment by three states

We identified several ways that environmentally preferable purchasing programs in the Great Lakes can be improved, including:

- Considering adopting mandatory requirements for EPP programs at the state or municipal level, for those jurisdictions lacking them
- States, municipalities and institutions not otherwise doing so should ensure that their EPP policies explicitly address PBT and other problematic chemicals (including considering, for example, the U.S. Environmental Protection Agency National Partnership for Environmental Priorities program)
- Purchasing agencies should deal with key policy decisions that need to be made concerning EPP programs, including addressing full cost/environmental issues, modifying specifications, assigning responsibilities (possibly including through

use of a green team) and establishing deadlines, developing a communications plan, developing measurable goals and reporting requirements, and periodically reviewing policy

- States, municipalities and institutions with more limited EPP programs should draw on the experience of other more advanced programs, including several in the region (e.g., Minnesota, Buffalo, Columbus) as well as programs elsewhere in the country
- All purchasing agents should take advantage of the numerous resources increasingly available to facilitate the development and implementation of EPP programs, including model policies and purchasing tools available from a number of organizations and institutions

Environmentally preferable purchasing is still a relatively young concept in the Great Lakes region, and there are significant opportunities to increase the scope of programs throughout the area. However, there has been increasing momentum recently in adoption of some related policies (e.g. statewide bans on mercury containing products and executive orders on energy efficiency and green chemistry). The means of purchasing goods and services by states, municipalities and institutions in the region is an important component in the move toward sustainable development, and proper choices can also contribute to a healthier Great Lakes ecosystem.

I. Introduction

Contamination by toxic chemicals continues to pose threats to the environment and human health in the Great Lakes region. While significant progress has been made in the past two decades to reduce releases of chemicals of longstanding concern such as mercury, polychlorinated biphenyls (PCBs) and persistent pesticides, much work remains to be done. All eight Great Lakes states are beset by numerous fish consumption advisories; seven of the states have a statewide mercury advisory in place, and PCBs remain the most common cause of individual fish advisories in the region.¹ In addition, there is increasing awareness of the presence and potential threats of numerous chemicals of emerging concern in the region, including the flame retardants polybrominated diphenyl ethers (PBDEs), perfluorinated chemicals, and pharmaceuticals and personal care products.

Of particular concern are chemicals that are persistent (P), can bioaccumulate (B), and are toxic (T) at relatively low concentrations (PBT chemicals; see Box 1). Many efforts at addressing chemicals of concern in the Great Lakes region and beyond (including nationally in the U.S. and Canada) have placed a high priority on PBT chemicals. Once released to the environment, these chemicals can pose health threats to humans, aquatic life, and wildlife (see Box 2 on the following page).

In general, sources of PBT chemicals can be considered in two broad categories: chemicals

Box 1 PBT Chemicals

Three key characteristics of chemicals of concern (including both chemicals of longstanding focus and chemicals of emerging concern) are:

- **Persistence (P):** the ability of a chemical to remain for long periods in the environment
- **Bioaccumulative potential (B):** the ability of a chemical to be taken up by organisms. A related property is biomagnification, which refers to the ability of a chemical to increase in concentration up the food web in natural waters - for example, from phytoplankton (free-floating plants) to zooplankton (small animals with limited motility) to forage fish to predator fish
- **Toxicity (T):** the ability of a chemical to cause injury to organisms at relatively low concentrations²

used purposely, and chemicals produced and/or released incidentally through industrial or disposal processes. For example, mercury has historically been used in a number of products, including thermometers, thermostats, other measuring devices, certain switches, and fluorescent bulbs, as well as in some manufacturing processes, such as mercury-cell chlor-alkali plants producing chlorine and caustic soda.³ As of the late 1990's, as much as 250 tons of

Box 2

Health and Ecological Effects of PBT Chemicals

Numerous studies have documented the health and ecological risks posed by PBT and related chemicals in the environment. Some of the key chemicals of concern include:

- **Mercury:** Environmental exposures are generally to methylmercury, produced in sediments in water by bacteria from inorganic mercury. Methylmercury has a greater tendency to biomagnify in food webs. Elevated methylmercury exposures have been associated with effects on memory, attention and language development in children exposed in utero. Other research has shown that elevated methylmercury exposures can contribute to increased cardiovascular diseases in adults. In addition, mercury can cause neurodevelopmental effects (that can also affect reproductive success) in fish-eating wildlife such as loons and otters.⁵
- **Polychlorinated biphenyls (PCBs):** PCBs had a number of industrial and other applications (in particular in electrical equipment) before open uses were phased out in the 1970s in the U.S. Once released to the environment, PCBs are very persistent, and can build up in food webs. As with mercury in the environment, most human exposures to PCBs are generally due to fish consumption. Elevated PCB exposures have been associated with decreased IQs in children exposed *in utero*.⁶
- **Chlorinated dioxins:** Chlorinated dioxins are a suite of chemicals similar in structure to PCBs, which similarly can build up in food webs in the environment, and for which fish consumption can be an important exposure route for people. Dioxins are mostly produced as a byproduct of certain manufacturing or waste disposal practices, and though sources have been reduced significantly (in particular through reductions in waste incineration and/or adoption of controls), dioxin levels have remained sufficiently elevated to cause a number of fish consumption advisories in the Great Lakes region and beyond. Elevated exposures in some populations have been associated with altered sex ratios in newborn children, and have also been associated with developmental problems in fish and certain wildlife.⁷
- **Brominated flame retardants:** There is increasing concern about the potential health and environmental effects of brominated flame retardants (BFRs). These chemicals, among which polybrominated diphenyl ethers (PBDEs) are one class, have been found in the environment, including increasing concentrations reported in Great Lakes sediments and fish, and elevated levels in humans in the U.S. compared to other countries. While there is less information available on their health and ecological effects, the fact that the chemicals are similar in structure to PCBs and related chemicals with known effects has caused concern among scientists and policymakers.⁸

mercury were consumed for purposeful uses annually in the U.S.⁴ In addition, mercury is released incidentally through various processes due to its presence in fuels or feedstocks; these processes include cement manufacturing, the burning of coal and oil in commercial and industrial boilers, and the operation of coal-fired power plants. Large quantities of other toxic chemicals are also used in numerous products and processes, including in the production of electronic equipment, medical supplies, building materials, and toys.

To date, much of the emphasis on chemical pollution in the U.S. and Canada has involved laws and programs regulating chemical production, controlling pollution or cleaning up polluted sites. In the U.S., for example, this has included laws concerning chemical production (the Toxic Substances Control Act), releases to air and water (e.g. the Clean Air Act and Clean Water Act), hazardous waste disposal (e.g., the Resource Conservation and Recovery Act), or cleanup (e.g. the Comprehensive Environmental Response, Compensation and Liability Act (or Superfund)). In contrast, there has been less emphasis on preventing pollution, such as through the 1990 Pollution Prevention Act. In spite of these and other laws and regulations, there has been no comprehensive national effort at developing a materials policy (that includes addressing industrial and other chemicals) in the U.S.⁹

In addition to these federal laws, there have been numerous regional efforts in the Great Lakes to address environmental threats from toxic

chemicals. The Canada and U.S. Great Lakes Water Quality Agreement (GLWQA) (revised most recently in 1987) has broad goals for the protection of Great Lakes waters. These include the goal of virtual elimination of the release of toxic chemicals to the Lakes.¹⁰ A binational program to focus implementation of projects to meet the GLWQA goals is the Canada-U.S. Binational Toxics Strategy (BTS), which has an emphasis on voluntary pollution prevention (P2) projects.¹¹ In addition, in response to a Presidential Executive Order, the Great Lakes Regional Collaboration stakeholder effort in 2005 produced a report on recommendations for Great Lakes restoration and protection, and within the Toxic Pollutants strategy team, pollution prevention was identified as an important component of these efforts.¹²

Pollution prevention can be defined as source reduction, and other practices that eliminate or reduce the creation of pollutants (see Box 3 on the following page). Pollution prevention is an effective approach to protecting the environment, given the obvious value in preventing pollution problems from occurring in the first place, rather than adopting potentially costly pollution control technologies, remediating contaminated sites, or simply bearing the ecological and health costs of contamination later. In the case of products, P2 involves considering both the components making up the products as well as the production processes involved.

A number of policy tools have arisen in the past decade to promote pollution prevention approaches in dealing with products. One group

Box 3
Pollution Prevention

In the U.S. Pollution Prevention Act (PPA) of 1990, the policy statement notes that "The Congress hereby declares it to be the national policy of the United States that pollution should be prevented or reduced at the source whenever feasible..."¹³

Pollution prevention has been defined as "'source reduction', as defined under the Pollution Prevention Act, and other practices that reduce or eliminate the creation of pollutants through: increased efficiency in the use of raw materials, energy, water, or other resources, or protection of natural resources by conservation."¹⁴

Further, source reduction is defined in the PPA as any practice that:

1. "reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and"
2. "reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants."¹⁵

of such approaches can collectively be termed "consumption strategies". Four such strategies addressing problem chemicals (including PBTs)

are product labeling, employee and consumer information, environmentally preferable purchasing (or procurement), and bans or phaseouts of particular chemicals, as detailed below:¹⁶

- **Product labeling programs** entail either identifying any hazardous constituents that may be present in a particular product (e.g., disclosure information) or the environmentally positive attributes of a product's performance. Product labels (sometimes termed ecolabels) can be either mandatory or voluntary (e.g., through the International Organization for Standardization (ISO)). Examples of mandatory programs include state laws requiring that certain mercury-containing products be labeled as such. Examples of voluntary performance programs include the Energy Star program coordinated by U.S. EPA and the U.S. Department of Energy, which emphasizes energy efficiency in appliances,¹⁷ and the non-profit Green Seal program identifying environmentally responsible products and services.¹⁸ In addition to encouraging the development of safer products, disclosure requirements can be useful even when no alternative products are available, to remind users of the need for proper disposal after use.
- **Employee and consumer information** on chemical hazards can help spur development or adoption of safer chemicals in the workplace or in consumer products. For example, the Toxics Release Inventory (TRI), established as part of the Emergency Planning and Community Right-to-Know

Act of 1986 (later expanded through the Pollution Prevention Act of 1990), involves annual industry reporting of chemical release data.¹⁹ The increased public attention to specific chemicals and industries releasing them has in some cases helped spur reductions in uses and/or releases. In addition, the U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard provides workers with information on chemicals and potential health risks, which can also be used in support of identifying safer chemicals.²⁰

- **Environmentally preferable purchasing (EPP)** (also sometimes called “green purchasing”) is an approach through which public agencies or other entities make purchasing decisions on products and services to minimize impacts on the environment. This approach was formalized at the federal level in the U.S., through Executive Order 13101 signed by President Clinton on September 14, 1998. In the order, “environmentally preferable” is defined to mean products or services that “have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal of the product or service.”²¹
- **Ban or phaseout of particular chemicals** is an approach (which often restricts levels of a particular chemical to below a certain threshold) that can be adopted either through

legislation or rules, and can be adopted from the municipal to national or even international level. In addition, these prohibitions can either apply throughout the jurisdiction (e.g. sales of a particular type of product in a state) or only within a particular purchasing sector (e.g., all or part of a state government's purchasing decisions). This approach is typically applied to chemicals of clear concern, and where environmentally preferable alternatives are readily available. An example of this approach is the increasing number of states banning the sale of items containing mercury, including thermometers, thermostats, and novelty items.²²

An additional approach to reducing chemical releases is extended producer responsibility (EPR), a principle that encourages or requires producers of products to be responsible for those products throughout their life cycle. One component of EPR is take-back programs, in which manufacturers re-acquire and recycle their products after use; such programs can also be either voluntary or mandatory. An example of the former is the free take-back and recycling program for computers offered by Dell.²³ An example of the mandatory approach is the television and computer take-back program law adopted in the state of Washington in 2006.²⁴

In addition to the direct potential to reduce use and releases of toxic chemicals through decisions to purchase greener products, adoption of energy efficiency measures can also result in reductions of some toxic chemical releases. For example,

improvements in appliance and building standards resulting in reduced electricity consumption would result in decreased mercury emissions from coal-fired power plants (responsible for most electricity generation in most Great Lakes states), which represent the largest single source of mercury air emissions in the region.²⁵

The importance of promoting P2 activities in government operations has been increasingly recognized, and the interconnected nature of the federal government, state and local agencies can also promote green purchasing. For example, state and local governments receive over \$400 billion annually in grants from the federal government,²⁶ and the Resource Conservation and Recovery Act (RCRA) requires agencies (including federal agencies and any state or local agencies using federal funds) to buy recycled-content products designated under the U.S. EPA's Comprehensive Procurement Guidelines.²⁷ The EPA has designated over 50 product types in eight categories to which the guidelines apply.²⁸

Even beyond the mandatory RCRA requirements on recycled content products, the potential for government agencies – through their purchasing decisions – to influence the types of products sold in the U.S. is staggering. The federal government spends over \$500 billion annually on goods and services, and the

combined spending of state and local governments is higher still, with projections for 2007 as high as \$570 billion.²⁹ While there are environmentally preferable purchasing programs in place at all levels of government, such programs have generally not been universally adopted, and questions remain about the extent and effectiveness of existing programs.

Given the potential for EPP programs to contribute to reduced uses and releases of toxic chemicals in the Great Lakes region, there is a clear need to identify the scope and progress of such programs in the Great Lakes states. The purposes of research presented here included: determining the status of environmentally preferable purchasing programs in the Great Lakes states and selected municipalities and institutions; identifying the extent of programs (including staffing and resources available); identifying the extent to which they cover certain toxic chemicals; and identifying barriers to more effective program implementation. In addition, this project also considered the extent of product bans/phaseouts involving toxic chemicals in the Great Lakes states. Identifying both strengths in existing programs and barriers to wider implementation can potentially assist states, localities, and institutions (as well as businesses) in adopting or modifying green purchasing programs that are most effective at reducing the release of product-related toxic substances in the Great Lakes region.

II. Purchasing Contracts – An Overview

States, municipalities and universities can have substantial purchasing budgets. Although exact amounts are not always readily available, responses to the survey conducted here and other sources give some indication of the amount spent through state procurement contracts in the Great Lakes region. This amount ranges from a few billion dollars in several states up to \$9 billion in New York.

The billions of dollars associated with purchasing contracts for governments represent a huge responsibility for the purchasing departments and agents who administer them. Ensuring that these contracts are managed in an ethical and fiscally prudent way, while complying with the many laws that govern them, is the purview of a relatively small group of people. Not only do these purchasing agents need to be versed in the knowledge of the products that they procure, but they also need to understand the various and complicated laws that govern how these goods and services are procured. The power represented by this volume of purchasing dollars compounds the level of complexity involved. If mismanaged, these contracts could potentially cost the state, and thus the citizens, millions of extra dollars.

Purchasing agencies and departments use several methods to procure goods and services. Having a basic understanding of these methods is important in order to understand the obstacles to and opportunities for large-scale institutional

purchasing reform, in particular in the direction of more systematic environmentally preferable purchasing. Some of the purchasing methods in use include the following:³⁰

- **Term contracts** (also known as “contract purchasing”) refers to a purchasing method by which goods are specified in a request for proposals, bid on by suppliers, then purchased by the state under contract with the winning bidder.
- **Central purchasing** is a contract arrangement under which goods are purchased and warehoused by the state or municipality for distribution to its facilities. Some agencies also use the term “central purchasing” to simply refer to term contracts. For the purpose of this report it will refer to the centralized warehousing of goods purchased in bulk for distribution.
- **Off catalog purchases** are negotiated from large suppliers (often with a percentage discount off list price) that can quickly ship goods in smaller quantities to state or municipal entities.
- **Waivers of competition** exist for extenuating circumstances that require competitive bidding rules to be waived. These circumstances include situations where there is an emergency need, when there is only one supplier (sole source) for the required product, or when a specific product is needed (for example, a prosthetic appliance in

healthcare).

- **Preferential purchasing** (also known as “preferred source purchasing”) allows states to give preference to certain types of suppliers, many times including preferences for goods produced locally or by disadvantaged groups. New York, for example, gives preference to goods or services that are provided by disabled or incarcerated people.
- **Open-market contracts** are used for one-time purchases. Because of the expense and time involved in developing a purchasing contract, one-time contracts are used when developing and bidding a complete contract is not economically efficient.

Central purchasing, until recently, was the norm for government purchasing and is still a common practice. Central purchasing allows states to negotiate for goods that have specific qualities, including environmental benefits. However, as suppliers have increased their warehouse and distribution capacities they have also developed the ability to quickly deliver large volumes of goods through catalog distribution networks. This has allowed government agencies to choose from a wider selection of goods that are offered by retailers at a consistent discount off list prices, but it has also in some cases made it more difficult for governments to control exactly which products their various agencies select.

III. Research Methodology

This original focus of this project was a survey of the extent of environmentally preferable purchasing programs in the eight Great Lakes states, with an emphasis on products containing or otherwise resulting in the release of toxic chemicals. Due to the paucity of information on the extent of EPP programs in the region, and the difficulty in identifying all products containing PBT chemicals, this survey was relatively broad, including assessing aspects of EPP programs that may not specifically involve PBT chemicals – this included questions on toxic chemicals that may not formally be categorized as PBT chemicals.

In addition, it was decided to include in this effort a small subsample of municipal and institutional programs. In addition to the significance of some of these programs, it is also clear that a number of innovative EPP programs have been developed at these levels. We envisioned that this small subsample could provide additional insights on the opportunities and challenges in developing EPP programs at these smaller – but still significant – scales.

NWF contracted with INFORM, Inc. to conduct the survey, compile responses, and summarize results. NWF worked with INFORM in developing the survey, researching laws and executive orders, and in preparing this report. The survey for both states and municipalities/institutions consisted of multiple-choice, short-answer, and open-ended questions designed principally to:

1. Identify existing executive orders, legislation and other mechanisms that mandate attention to PBT chemicals or other aspects of environmental purchasing;
2. Identify existing environmentally preferable purchasing programs in place, whether or not they are mandated;
3. Identify existing support mechanisms and technical support systems that either foster compliance with mandates or otherwise lead to more extensive EPP programs; and,
4. Assess barriers to the fuller development and implementation of EPP programs.

The survey questions were developed based on experience of our organizations on EPP issues, including insights gained through work to promote the development and extension of EPP programs through education and technical assistance. The questions were designed for purchasing agents, environmental protection agency employees, and others familiar with the purchasing mechanisms in their states or localities. They were intended to gather information from individuals most directly involved with purchasing decisions, and therefore most knowledgeable of the laws and policies that govern purchasing contracts. Concerning toxic chemicals, the survey addressed both PBT chemicals as well as some other chemicals (e.g. arsenic, cadmium, lead) which may not formally be classified as PBT chemicals, but which have or have had uses in various products, and still pose health threats either in

the environment or at home or in the workplace. In addition, it was assumed that a more extensive EPP program would have greater likelihood of eventually providing more significant benefits in product-related PBT reductions.

The sample size for this survey was small. For the eight Great Lakes states, we aimed for a census (i.e., 100 percent response). Of the eight states queried, the purchasing departments of two states, Minnesota and Wisconsin, did not respond to the survey. However, following separate efforts, we received responses from procurement officials at the Minnesota Pollution Control Agency and the Wisconsin Department of Natural Resources. For the municipalities and institutions, 49 surveys were distributed. Eight cities/counties and three universities responded (i.e., a 22 percent overall response rate). This latter component was not designed to be a representative survey of municipal and institutional EPP programs in the region. The survey subjects are indicated in Table 1. Potential participants were identified and an initial contact was made, written surveys were distributed (in summer 2006), and surveys were received by INFORM. Follow-up calls were made to any participants who did not respond to the initial request to complete the survey.

INFORM simultaneously collected relevant information from other sources, such as state’s purchasing and legislative Web sites. If participants failed to respond after continued follow-up email and telephone requests, INFORM looked to obtain, at minimum, a response from these organizations to confirm that the information we compiled was complete and accurate to the best of their knowledge. All information gathered for the states is presented here, regardless of whether or not a confirmation was received from the two states not responding to the formal survey (and as noted, we did have correspondence with other non-administration agency staff in both non-responding states). To ensure broader coverage, information provided below on statutes and executive orders was derived directly from appropriate agency Web sites. Information presented on programs at municipal, county and large institutions is largely from direct survey responses.

Information from the survey responses was compiled in an MS Excel workbook for ease of analysis. Information collected by INFORM was conveyed to NWF in a final report; and coupled with additional information collected by NWF, forms the basis of this report.

Table 1
States Surveyed, and Municipalities and Institutions Responding to Survey

States		Municipality		Institution
Indiana	New York	Buffalo, NY	Indianapolis, IN	Southern Illinois University, Carbondale, IL
Illinois	Ohio	Columbus, OH	Kalamazoo, MI	University of Buffalo, Buffalo, NY
Michigan	Pennsylvania	Erie County, NY	Lansing, MI	University of Wisconsin, Madison, Madison, WI
Minnesota	Wisconsin	Green Bay, WI	Racine, WI	

IV. Results and Discussion:

A. State Environmentally Preferable Purchasing Programs

1. General Program and Policy Findings

The survey found a diversity of approaches to general purchasing practices among the Great Lakes states.³¹ There were a number of commonalities in programs, including uniform use of central purchasing and emergency waivers, and widespread use of preferential purchasing (all states but Pennsylvania). In contrast, both off catalog purchasing and waivers of competition were only reported for three states each (New York, Ohio, and Pennsylvania, and Indiana, New York, and Wisconsin, respectively). (See Appendix I for results on purchasing practices.)

All states but Ohio reported having an environmental purchasing policy in place, but only three states (Illinois, Michigan, and Minnesota) reported having EPP staff; only Illinois actually gave an indication of personnel involved directly in EPP work (0.5 full-time equivalents). (Minnesota Pollution Control Agency reported having one staff person dedicated to EPP work). Only one state (Indiana) reported having funding set aside to support EPP work, while three states (Illinois, Minnesota, and Ohio) reported having access to assistance on EPP work through staff in other agencies (either natural resource, environmental protection, or both). Appendix I gives full findings on purchasing program practices and EPP programs in the states.³²

Survey results and independent research indicated that the range of approaches towards environmentally preferable purchasing in the region varies widely on the state level. In general, there are very few laws or executive orders involving EPP directed specifically at PBT or other toxic chemicals in the states. Most laws involving EPP mainly address recycled content and related requirements; in contrast, most Great Lakes states now have laws involving bans/phaseouts of one or more mercury-containing products statewide (and not simply part of state purchasing decisions; see further discussion below). Executive orders issued by governors in the region include several addressing EPP approaches, in addition to a general broader emphasis on related approaches (e.g., improved energy efficiency in appliances or buildings). Examples of both laws and executive orders relating to EPP programs are given in Appendix II.

The most common environmentally preferable purchasing measure adopted into law by states in the region is a preference for recycled content paper, with some states encouraging the use of other recycled content goods. (As noted in the Introduction, states receiving federal funds are required under RCRA to purchase recycled content products in certain categories.) Policies on price preferences for recycled content paper or other products vary, ranging from five percent in

Pennsylvania to 20 percent in Michigan (based on the statutes).

Based on this assessment, Minnesota is the only Great Lakes state with a law specifically focused on pollution prevention. The policy section of the law states:

"To protect the public health, welfare, and the environment, the legislature declares that it is the policy of the state to encourage toxic pollution prevention. The preferred means of preventing toxic pollution are techniques and processes that are implemented at the source and that minimize the transfer of toxic pollutants from one environmental medium to another."³³

In contrast to the case with statutes in most Great Lakes states, a number of executive orders have been signed addressing broader environmental aspects of purchasing policies (see Appendix II). In Pennsylvania, Executive Order 1998-1 (signed in 1998) established the Governor's Green Government Council, and included goals of procurement of environmentally preferable commodities, vehicles, and services. This was followed by similar initiatives in Minnesota (in 1999), Illinois (2000), and Indiana (2005).

Similar to the situation with statutes, Minnesota has strong policies concerning pollution prevention adopted via executive orders. A 1999 executive order has several major philosophical

and practical components, including calling for promotion of "policy and cultural reform to give priority to preventing pollution" in state agencies, implementation of activities through the Interagency Pollution Prevention Advisory Team, and implementation of pollution prevention through purchasing policies.³⁴ In contrast, it appears most other Great Lakes states have a less systematic emphasis on pollution prevention through purchasing, and do not have ready access to the type of technical support needed to implement a broad EPP program (see further discussion below).

In addition to addressing formal purchasing policies, several executive orders in the past decade have focused on energy efficiency measures (which as noted previously can contribute to reductions in toxic chemicals, in particular those released via coal-fired power generation); this has included initiatives in Michigan, Minnesota and most recently Ohio. Research indicated that all of the Great Lakes states had some type of executive order signed that addressed energy efficiency (see Appendix II).

2. State Policies Addressing PBT and Other Toxic Chemicals

Most Great Lakes states' statutes related to EPP do not explicitly address toxic chemicals. However, all of the states reported having EPP programs that address at least one sector known to contain PBTs or other toxic chemicals, as indicated in Table 2. Four of the states (Illinois, Indiana, Michigan and New York) reported

Table 2
Chemical and Major Sectors Addressed in Great Lakes State Environmental Preferable Purchasing Programs

	IL	IN	MI	MN	NY	OH	PA	WI
PBTs	■	■	■		■			
Janitorial/Facilities products	■	■		■	■		■	
EPA NPEP 31 Priority Chemicals								
Polyvinyl chloride								
Toner and Ink Cartridges	■	■					■	
Recycled Paper Products	■	■	■	■	■	■	■	■
Electronic Equipment		■	■	■		■	■	■
Medical Products/ Devices								
Vehicle Maintenance		■		■				
Other Recycled Content	■	■	■		■			■

addressing PBT chemicals in their programs, while none of the states reported addressing the suite of 31 priority chemicals in the U.S. EPA National Partnership for Environmental Priorities (NPEP) waste minimization program.³⁵ Toner and ink cartridges were covered in three state programs, and electronic equipment was addressed in the majority of the Great Lakes state programs (all but Illinois and New York), according to the survey.

Concerning specific PBT and other toxic chemicals, the Great Lakes states have adopted some policies addressing selected chemicals, as summarized in Table 3. Most of the states have adopted policies regulating the sale, distribution and/or disposal of mercury-added products. This has typically been done via laws involving bans or phaseouts of individual products, or a suite of products (see Appendix II). Laws regulating these products in all of these cases apply throughout the state, not just to state entities.

As noted in Appendix II, some state policies addressing mercury-containing products were adopted prior to national legislation (e.g. restrictions on use or disposal of mercury-containing batteries prior to the federal Mercury-Containing Battery Management Act of 1996). However, there has been much greater legislative and general policy activity on mercury containing products over the past several years, including in the Great Lakes states.³⁶ This has included recent passage of legislation addressing mercury-containing products such as thermometers, thermostats, mercury in schools, and novelty items in states such as Michigan and Ohio. Based on a review of statutes, New York is the only Great Lakes state with a comprehensive mercury phase-out law, addressing the aforementioned products plus medical products, switches and relays and other products, and also includes a labeling provision (see Appendix II). The increased adoption of these policies has likely resulted from a combination of factors, including the known health risks from mercury (including methylmercury in fish), the widespread fish consumption advisories (in the region and

Table 3
PBT and Other Toxic Chemicals Addressed
Through Environmentally Preferable
Purchasing or Other Policies
in Great Lakes States

	IL	IN	MI	MN	NY	OH	PA	WI
Mercury	■	■	■	■	■	■		■
Lead		■				■		
Polycyclic Aromatic Hydrocarbons (PAHs)								
Cadmium								
Arsenic								
Dioxins								
Polybrominated Diphenyl Ethers (PBDEs)	■		■		■			
Hexavalent Chromium								
Polychlorinated Biphenyls (PCBs)*		■						

* Open uses of PCBs were phased out in the U.S. through the Toxic Substances Control Act of 1976, and programs to replace PCB-containing electrical equipment are ongoing, including through the Binational Toxics Strategy.

nationally), public awareness and support for restrictions on mercury uses, and the availability of alternative products.

PBDEs are another class of chemicals receiving increasing attention in the Great Lakes. As shown in Table 3, three Great Lakes states (Illinois, Michigan and New York) have taken

action (all through legislation) to phaseout PBDE mixtures. In the case of all three, the bans (on manufacture, processing or distribution) apply to the pentabromodiphenyl ether and octabromodiphenyl ether flame retardant mixtures. At the same time, the lone U.S. manufacturer of the two mixtures (Great Lakes Chemical Co. in Indiana) voluntarily discontinued production of these mixtures in 2004.³⁷ However, production of the decabromodiphenyl ether mixture still occurs, and there is evidence it can break down into the environment to produce compounds that are still potentially hazardous. In addition, though not formally a PBT chemical, 1,4-dichlorobenzene was banned by New York from use in urinary blocks in schools (see Appendix II).

Additional questions in the survey addressed the use of other products that could potentially contain PBT or related chemicals, generally by sector. In the medical sector, all states except Pennsylvania responded that their departments have policies concerning mercury containing thermometers.³⁸ Only Indiana reported purchasing policies addressing two other medical supplies (batteries and blood pressure equipment).

In janitorial and maintenance, there was a diversity of responses concerning EPP programs addressing various products that may potentially contain toxic chemicals. As noted in Table 4, Illinois, Indiana, New York and Pennsylvania reported addressing at least three janitorial and maintenance products; general purpose cleaners and floor finishes and strippers were both part of EPP policies in all four states.

**Table 4
Janitorial and Maintenance Product Categories
Addressed Through Environmentally
Preferable Purchasing or Other Policies in
Great Lakes States**

	IL	IN	MI	MN	NY	OH	PA	WI
Urinal Deodorant Blocks	■				■			
Air Fresheners	■	■						
General Purpose Cleaners	■	■			■		■	
Floor Finishes and Strippers	■	■			■		■	
Pesticides and Fungicides		■				■		
Graffiti Removal Chemicals							■	

**Table 5
Building and Construction Products Addressed
Through Environmentally Preferable
Purchasing or Other Policies in Great Lakes
States**

	IL	IN	MI	MN	NY	OH	PA	WI
Pressure Treated Lumber								
Caulks and Sealants								
Electric Switches	■	■	■	■	■			
HVAC Systems	■	■	■	■	■			
Thermostats	■	■	■	■	■			
Fluorescent Lamps	■	■	■	■	■		■	
Interior Finishes								
Float Switches	■	■	■	■	■			
HID Lamps		■	■	■	■			
Other					■*			

* New York purchases lead-free traffic paint

Building and construction is a sector with significant potential to reduce environmental impacts, including through use of less-toxic materials and incorporation of more energy-efficient climate control systems and appliances. As shown in Table 5, five of the states (Illinois, Indiana, Michigan, Minnesota, and New York) reported EPP policies addressing most products surveyed in the sector, with an emphasis on electrical switches, heating, ventilation and air conditioning (HVAC) systems, thermostats, fluorescent lamps, and float switches.

Several of the sectors (electrical switches, thermostats, and fluorescent lamps) have been major users of mercury, although mercury consumption in each sector has decreased in recent years, as either alternatives have become available (e.g. digital, programmable thermostats) and/or as the amount of mercury used in products has been reduced (e.g. in fluorescent lamps). However, substantial quantities of mercury are still used in these products, and efforts at increasing recovery at the end of the product's useful life are ongoing. For example, the not-for-profit Thermostat Recycling Corporation program supports the collection by HVAC wholesalers of used mercury containing thermostats for reuse, and collection rates have steadily increased throughout the program's history.³⁹ However, challenges remain in increasing participation in this program, which still appears to cover a small fraction of thermostats replaced each year, including in the Great Lakes states.⁴⁰

**Table 6
Office Supplies and Electronic Equipment
Addressed Through Environmentally
Preferable Purchasing or Other Policies in
Great Lakes States**

	IL	IN	MI	MN	NY	OH	PA	WI
Computer Monitors				■	■		■	
PVC Office Supplies								
Cell Phones								
Printers and Copiers								
Batteries		■						
Chlorine Bleached Paper				■				

Another sector with potentially significant uses of toxic chemicals includes office supplies and electronic equipment. As indicated in Table 6, environmental concerns about products within this sector are generally not addressed in state purchasing programs, although three states (Minnesota, New York, and Pennsylvania) reported programs dealing with computer monitors.

Finally, in the category of vehicle maintenance products, while no state reported any efforts to address PBT- or other toxic chemical-containing car waxes or lead wheel weights, four states (Indiana, Minnesota, Ohio and Wisconsin) reported they consider environmentally preferable purchases in decisions on fuels and lubricants.

In general, in most cases – as would be expected – survey responses indicated policies consistent with existing legislation or executive orders.⁴¹ In several categories, state purchasing departments follow EPP practices that go beyond mandates of legislation or executive orders in their states (e.g. policies addressing several products indicated in Tables 4-6, or the case of Minnesota's policy to contract for low-mercury lamps even without a mandate to do so.) Adopting these types of policies will obviously entail greater staff time and resources, a situation in which some states are better positioned. This survey did not explore factors leading to these types of non-mandatory actions. Resources available and barriers to implementation of EPP programs are discussed in Section IV.C.)

IV. Results and Discussion:

B. Municipal and Institutional Findings

1. General Program and Policy Findings

Response to the survey of municipalities and institutions (universities in this case) was 22 percent overall (i.e., eight municipalities and three universities, out of 26 municipalities and 23 institutions surveyed). This component of the survey was not designed to be representative of municipalities and institutions in the region. In addition, given the lower response rate and the decision not to follow-up with non-responding parties, it is possible that responses are biased toward more active programs in the region.

As was the case with states, there was quite a diversity of approaches to purchasing in general. While all municipalities and the three universities each reported the use of the central purchasing approach (not surprisingly), two municipalities (Buffalo and Kalamazoo) reported exclusive use of this method, and four other municipalities (Columbus, Indianapolis, Lansing, and Racine) reported use of a majority of the nine methods in the survey (Appendix I).

Environmentally preferable purchasing policies were reported to be in place at only two of the municipalities (Buffalo and Columbus), while all three universities reported having EPP policies. The City of Columbus environmentally preferable purchasing policy has been incorporated into Chapter 329 of the city code, and offers a five percent price preference (up to a maximum of \$20,000) for environmentally

preferable bids (which are required to be pursued unless no such products or services are available in a particular category). In addition, the policy states:

"The goal of such purchasing is to not only preserve and conserve natural resources and to help keep materials out of the solid waste stream, but to also leverage the city's buying power to nurture the marketplace for recycled and recyclable products."⁴²

Only Columbus among municipalities and the University of Buffalo among the three universities reported having staff focused on EPP decisions.⁴³ Only the University of Buffalo reported having EPP assistance funding available, while Columbus, Indianapolis, and the University of Buffalo all reported access to staff in other agencies to assist in EPP policymaking.

2. Municipal and Institutional Policies Addressing PBT and Other Toxic Chemicals

As was the case with the states, a diversity of policies addressing PBT and other toxic chemicals through municipal and university purchasing programs was reported. Table 7 provides an overview of the types of environmentally preferable purchasing policies at the municipal and institutional level among survey respondents. As shown in the table,

several policies are common to a number of municipalities and universities surveyed, including the use of recycled content paper and/or other products, and use of Energy Star electronic equipment.

Only two respondents indicated that they have mandates to consider PBTs in their purchasing: Buffalo, New York, which has a broad PBT-free purchasing resolution (see Box 4), and the University of Wisconsin, Madison, which promotes the use of mercury-free thermometers. However, as shown in Table 7, most municipalities and universities responding to the survey indicate they have programs in place that to some extent address at least implicitly PBT and other toxic chemicals.

Box 4

PBT-Free Purchasing in Buffalo

The City of Buffalo in December 2004 became the first city in the U.S. to adopt a resolution involving purchasing and PBT chemicals. The resolution calls for the city to eliminate PBTs through procurement practices "wherever possible," including through decisions of the Purchasing Department and other appropriate city departments. The resolution further calls for:

- developing and applying criteria differentiating products containing PBTs or resulting in their release during manufacture or disposal from products that do not;
- developing an implementation plan with reduction targets that considers presence of PBTs and other environmental, social and economic factors
- a focus on the 31 priority PBT chemicals identified by U.S. EPA, and use of a 10 percent price preference for alternative products.⁴⁴

Table 7
Example Municipal and University Environmentally Preferable Purchasing Policies

Municipality or University	EPP Policies/Products Required or Promoted
Buffalo, NY	<ul style="list-style-type: none"> ● Purchasing Department and other appropriate city departments encouraged to consider the presence of PBTs in making purchasing decisions ● Recycled paper ● Energy Star/energy efficient electronic equipment ● Environmentally preferable general purpose cleaners ● Mercury-free/low mercury products including fluorescent lamps ● Para dichlorobenzene urinal deodorant blocks discouraged
Columbus, OH	<ul style="list-style-type: none"> ● Consideration of environmentally preferable products when developing specifications required
Indianapolis, IN	<ul style="list-style-type: none"> ● Environmentally preferable janitorial products, including general purpose cleaners ● Environmentally preferable toner and ink cartridges ● Energy Star electronic equipment
Kalamazoo, MI	<ul style="list-style-type: none"> ● Products that are recycled and recyclable
Southern Illinois University	<ul style="list-style-type: none"> ● Environmentally preferable interior finishes ● Recycled carpeting ● Energy efficient lamps and ballasts ● Hybrid vehicles
University of Buffalo	<ul style="list-style-type: none"> ● Subject to New York State Executive Orders for state agencies ● Recycled-content products ● Environmentally preferable janitorial products ● Energy Star electronic equipment ● Environmentally preferable vehicles ● Environmentally preferable building materials
University of Wisconsin-Madison	<ul style="list-style-type: none"> ● Purchase of double-sided copiers required ● Energy efficient building and remodeling projects required ● Recycled paper products ● Energy Star electronic equipment ● Mercury-free thermometers

IV. Results and Discussion:

C. Resources Utilized and Barriers to EPP Program Implementation

1. Resources Utilized in EPP Program Implementation

As stated previously, there are a range of requirements governing environmentally preferable purchasing in the Great Lakes at the state, municipal and university levels, and a similar range in the scope of policies. Implementation of such policies requires ready access to appropriate information, and survey respondents reported a range of resources upon which they rely. Both Illinois and the City of Columbus reported relying on all possible resources/sources of information provided in the survey (i.e. federal, state resources and programs, non-profit resources, and purchasing contracts themselves) (see Appendix III). Federal and state resources were reported to be most commonly relied upon by state respondents (four each), while state resources and programs were each relied upon by three municipalities. The University of Buffalo was the only university that reported relying on outside sources. Purchasing agents in some cases also reported specific resources that were useful to them, which in the case of Erie County included the email newsletter from King County (WA), location of an extensive EPP program.

2. Barriers to More Effective EPP Program Implementation

In addition to questions regarding specific environmentally preferable purchasing policies,

products, or strategies, respondents were also queried about barriers to EPP. Based on responses, the most prevalent obstacle to EPP appears to be financial; five of the eight states and one-half the municipalities reported that limited financial resources limited their EPP activities. The next most commonly cited obstacle was lack of mandate, noted by three states and three municipalities. Interestingly, the other potential obstacles to EPP program implementation (lack of understanding of benefits, lack of understanding of alternatives, and lack of availability of alternatives) were each cited only in one or two cases among states and municipalities. Though not explicitly included as a response option, lack of personnel was cited by three states as an additional implementation barrier. Among the three universities, the only barrier identified was related to lack of mandate and questions on implementation (by the University of Buffalo). Responses to each question are summarized in Appendix III.

Respondents were also given an opportunity to suggest EPP components or product categories to include in future EPP initiatives. The majority of states, municipalities, and universities did not respond, although a few suggestions were offered (including attention to lighting, office products, furniture and vehicles in Illinois, and greener cleaners and a mandate pertaining to all contracts in Minnesota (offered by the Minnesota Pollution Control Agency)).

Box 5
**Types of Suggestions on Information
Needed to Extend/Adopt an EPP
Program**

Several respondents (mainly states) offered specific suggestions on information or other needs to extend an environmentally preferable purchasing program, which are summarized below.

- Desire to include information in monthly "tips" in newsletter; better tracking of environmentally preferable products purchased through state contract
- Manufacturers of environmentally preferable products need to work to reduce incremental price difference with conventional products; also need better life-cycle cost analysis to better quantify costs and benefits of greener products, and greater use of third party certification to increase standardization and feasibility of increasing purchase of greener products
- Information on savings that can occur with EPP products
- Information on specific EPP products and implementation strategies
- Incorporation of a workbook and checklist on EPP products would be helpful, as well as a coordinator to ensure implementation

A related question addressed types of information that would be most useful in either adopting or extending an EPP program. There were several responses, including a general request for more resources and information on greener products. More specific suggestions are summarized in Box 5.

V. Summary and Recommendations

Environmentally preferable purchasing is being increasingly pursued as a viable strategy to reduce the use and release of toxic chemicals – including persistent, bioaccumulative toxic chemicals – into the environment. Results of the survey and independent research done as part of this project indicate a variety of EPP efforts are underway in the Great Lakes region, and many of them directly or indirectly can impact uses and releases of PBT and other toxic chemicals. Some of the key findings of this work include the following:

- While seven of the eight Great Lakes states reported having an environmental purchasing policy in place, only three states (Illinois, Michigan, and Minnesota) reported having staff working on environmental purchasing, and only Indiana reported having funding set aside to support EPP work
- In general, while there are a number of laws and executive orders addressing EPP, very few of these involve EPP directed explicitly at PBT or other toxic chemicals in the states
- Though not formally EPP programs, seven of the Great Lakes states now have laws involving statewide bans/phaseouts of one or more mercury-containing products, and many of these laws have been adopted in the past few years
- Consistent with the compilation of laws and executive orders, most state purchasing officials responded that they have policies addressing one or more mercury-containing products; however, apart from policies directed at PBDEs (which have been subject to legislative phaseouts in three states), there is minimal targeting of other PBT or other toxic chemicals in purchasing programs
- Minnesota was the only state identified with a statute highlighting pollution prevention as a priority policy for the state (including through procurement)
- Most states (Illinois, Indiana, Michigan, Minnesota and New York) reported having EPP policies addressing a significant number of product categories in janitorial and maintenance and/or building and construction, while fewer states had policies focused on electronic equipment
- Among municipalities, Buffalo and Columbus were the only cities with resolutions or ordinances requiring adoption of EPP policies; Buffalo's is focused on PBT chemicals
- Among municipal and university programs, recycled paper or other recycled content products and purchase of Energy Star equipment is a common feature of EPP programs;
- Limited financial resources was identified as the most common barrier to EPP program implementation, cited by over half the states

and municipalities responding

- Lack of mandate was cited as a limiting factor by three states and municipalities, and three states volunteered that limits in staffing affected their ability to implement an EPP program

Recommendations for Improving EPP Programs

The Great Lakes states have made varying degrees of progress in developing and implementing environmentally preferable purchasing programs in more recent years. In addition, several municipalities and universities in the region have also developed promising approaches to EPP. But results of the survey and independent research described here indicate there are still a number of areas for improvement in EPP programs in the region, including in the manner in which they address PBT chemicals and other chemicals of concern. Potential avenues for strengthening programs include the following:

- States and municipalities without any requirements concerning EPP policy should consider adopting such requirements, or at a minimum general principles highlighting the importance of pollution prevention broadly (as is the case in Minnesota), and its application through purchasing decisions
- States, municipalities and institutions not otherwise doing so should ensure that their EPP policies explicitly address PBT and other problematic chemicals; as a start, they could focus on priority chemicals identified through the U.S. EPA National Partnership for Environmental Priorities (NPEP) program (see link in Appendix VI)
- Given the increasing recognition of the importance of computers and other electronic equipment as a source of toxic chemicals during manufacturing, use and disposal, all parties involved in purchasing should increase efforts to ensure environmentally sound decisions are made concerning purchase and proper management of this equipment
- Where staffing or other resource constraints are an issue, purchasing departments should make the case to funding and other authorities of the importance of environmentally preferable purchasing as an approach that can have environmental benefits, and in a number of cases save money
- Purchasing agencies should deal with key policy decisions that need to be made concerning EPP programs, including addressing full cost/environmental issues, modification of specifications, assigning responsibilities (possibly including through use of a green team) and establishing deadlines, developing a communications plan, developing measurable goals and reporting requirements, and periodically reviewing policy (see Case, S., 2004, in Appendix VI)
- States, municipalities and institutions either lacking or having limited EPP programs should draw on the experience of other more advanced programs, such as in Minnesota

and Massachusetts at the state level, in Buffalo, Columbus, or King County (WA) at the municipal level, and the universities identified in this survey at the academic level (see contact information in Appendices IV – VI).

- All states, municipalities and institutions should take advantage of the numerous resources increasingly available to facilitate the development and implementation of EPP programs; this includes model policies and purchasing tools from the California Integrated Waste Management Board, Center for a New American Dream,

INFORM, Inc. and the U.S. EPA (including on recycled content product categories), among other groups, as well as numerous articles, reports and books on the subject (see Appendix VI)

While progress has been made in the Great Lakes region in developing environmentally preferable purchasing programs, adoption of many of the measures here can greatly extend the scope of these programs, and contribute to the protection of the Great Lakes and the broader environment in the region.

Appendix I

Purchasing Program Information for Great Lakes States, Municipalities and Institutions as Derived from Survey

The tables on the following pages provide responses from the agencies surveyed on general aspects of their purchasing programs, including on environmentally preferable purchasing. As noted in the main text, surveys were not received from administrative agencies in Minnesota and Wisconsin. For Minnesota, information below was obtained based on correspondence with purchasing staff in the Department of Administration and research on the agency's Web site. For Wisconsin, information below was obtained through research on the Department of Administration's Web site and through communication with the Wisconsin Department of Natural Resources. For municipalities and universities, all information below was obtained directly from the responding agencies.

Table AI.1.
Purchasing Methods used by Great Lakes States

	Central Purchasing	Off Catalog	Preferential Purchasing	Waivers of Competition	Emergency Waivers	Open-market Contracts	Term Contracts	Purchasing Cards	Sole Source
States									
Illinois	•		•		•		•		•
Indiana	•		•	•	•				
Michigan	•		•		•		•	•	
Minnesota	•		•		•				
New York	•	•	•	•	•		•	/	/
Ohio	•	•	•		•	•	•		
Pennsylvania	•	•			•	•	•		
Wisconsin	•		•	•	•		•	•	•
Municipalities									
Buffalo, NY	•								
Columbus, OH	•	•		•	•		•		•
Erie County, NY	•	•							/
Green Bay, WI	•		•				•		
Indianapolis, IN	•	•	•		•		•		
Kalamazoo, MI	•								
Lansing, MI	•	•	•		•	•	•	•	
Racine, WI	•	•	•	•	•	•	•	•	
Universities									
Southern Illinois University	•	•				•	•	•	
University of Buffalo	•		•				•		
University of Wisconsin-Madison	•	•				•	•		

**Table A1.2.
Environmentally Preferable Purchasing Policy and Staffing in
Great Lakes States**

	Have EPP Policy	EPP Staff in Agency	No. Full-Time EPP Staff	Have EPP Assistance Funding	EPP Staff Outside Agency
States					
Illinois	•	•	1/2		• 2
Indiana	•		0	•	
Michigan	•	•	0		
Minnesota	•	•	0		• 3
New York	•		n/a ¹		
Ohio	?		n/a		• 4
Pennsylvania	•		n/a		
Wisconsin	•		n/a		
Municipalities					
Buffalo, NY	•		n/a		
Columbus, OH	•	•	10		• 5
Erie County, NY			n/a		
Green Bay, WI			n/a		
Indianapolis, IN	?		n/a		• 6
Kalamazoo, MI			n/a		
Lansing, MI			n/a		
Racine, WI			n/a		
Universities					
Southern Illinois University	•		n/a		
University of Buffalo	•	•	n/a	•	• 7
University of Wisconsin-Madison	•		n/a		

Notes: 1. Not available; 2. Illinois Lieutenant Governor's Office, Illinois Environmental Protection Agency, and Illinois Department of Natural Resources; 3. Minnesota Pollution Control Agency; 4. Ohio Department of Natural Resources and Ohio Environmental Protection Agency; 5. All city fiscal agent staff are to consider environmentally preferable purchasing when developing specifications; 6. Indianapolis Department of Public Works; 7. New York Office of General Service, New York Department of Environmental Conservation, New York State Energy Research and Development Authority, Dormitory Authority of the State of New York, New York Power Authority.

Appendix II

Key Laws and Policies Affecting Environmentally Preferable Purchasing in the Great Lakes States

The tables on the following pages provide an overview of laws and policies relating to environmentally preferable purchasing on the state level in the Great Lakes Region. In some cases, policies beyond purely state purchasing decisions are included, in particular concerning phase-out measures of toxic chemicals such as mercury and brominated flame retardants.¹ This list is not meant to be comprehensive, but provides major examples (in particular over the past 10-15 years, during which time most such policies were adopted) of the types of statutes and other policies in place related to environmentally preferable purchasing. Note that descriptions in the charts do not include all provisions in relevant laws/policies (including exemptions).

Additional compilations/databases of programs/legislation/laws related to environmentally preferable purchasing and toxic chemical phaseouts include the following:

Environmental Council of the States (ECOS) and National Wildlife Federation (NWF), 2005 Compendium of States' Mercury Activities, October 2005, available at http://www.ecos.org/section/2005_mercury_compendium

National Electrical Manufacturers Association, State Mercury-Containing Product Legislation, Virginia, http://www.nema.org/gov/env_conscious_design/mercury/

National Caucus of Environmental Legislators, Enacted Laws & 2006 Introduced PBDE Legislation, (as of April 5, 2006), available at <http://www.chemicalspolicy.org/downloads/PBDELegislationandLaws4-5-06.pdf>

National Conference of State Legislatures
<http://www.ncsl.org/programs/environ/envhealth/cehdb.htm>

(Also see additional resources in Appendix VI.)

Note

1. As noted, policies indicated are not comprehensive. For example, several states had provisions in place either banning sales of mercury containing batteries and/or restricting disposal (e.g. Michigan, Minnesota, New York and Wisconsin) prior to passage of the federal Mercury-Containing Battery Management Act of 1996. This legislation phased out most types of mercury containing batteries, and developed uniform requirements on labeling and easy removability of rechargeable batteries, and collection, storage and transport of covered batteries.

Environmentally Preferable Purchasing

Illinois	
Policy/Law	Source
Mercury Fever Thermometer Prohibition Act bans sale or distribution of mercury fever thermometers and mercury-added novelty products	410 Illinois compiled statute (ILCS) 46
Brominated Fire Retardant Prevention Act bans manufacture, processing or distribution of flame retardants containing more than 0.1% penta- or octa-bromo diphenyl ether	410 ILCS 48
Restrict the use and sale of mercury-added products (including mercury in schools and mercury switches and relays)	415 ILCS 22.23b
Mercury Switch Removal Act establishes a collection program for vehicle mercury switches	415 ILCS 97/1
Printing services be provided with soy-based ink	30 ILCS 500/45-15
Establishes price preference for recycled materials	30 ILCS 500/45-20
Requires the use of recyclable paper by state agencies	30 ILCS 500/45-25
Establishes potential preference for corn-based plastics, where plastic products required	30 ILCS 500/45-55
Establishes potential preference for vehicles that run on ethanol or biodiesel	30 ILCS 500/45-60
Green Illinois Government Coordinating Council established; duties include reviewing procurement guidelines and increasing purchase of environmentally preferable products (with one attribute being toxics use reduction)	Executive Order No. 6 (2000)
Requires product lists and master contracts have available remanufactured office printing equipment (with duplexing capability), Energy-Star compliant office equipment, zero or low-VOC paint and coatings, recycled content carpet products	Executive Order No. 11 (2001)
Encourages the purchase of renewable energy	Executive Order No. 6 (2002)
State can establish priorities for purchasing flex-fuel (ethanol, biodiesel, or hybrid) vehicles	Executive Order No. 7 (2004)
Requires that computers and related electronic equipment be redistributed, reutilized, recycled or disposed of in an environmentally responsible manner	Executive Order No. 12 (2006)

Illinois Compiled Statutes available at <http://www.ilga.gov/legislation/ilcs/ilcs.asp>

Illinois Governor's Office Executive Orders available at <http://www.illinois.gov/gov/execorders06.cfm>

Indiana	
Policy/Law	Source
Provisions on purchase of recycled-content products, including requirement that Department of Administration (DOA) prepare specifications for recycled-content products for state purchase, and DOA must prepare recycled-content products guide for use by state and local agents	Indiana Code (IC) 4-13-1.4
Requires purchase of recycled paper products by government agencies	IC 5-22-5-7
Purchasing preferences, sets price preference (between 10 and 15 %) for supplies that contain recycled or post-consumer materials	IC 5-22-15-16
Purchasing preferences, sets price preference for soybean oil based ink	IC 5-22-15-18
Purchasing preferences, sets price preference for soy diesel/bio diesel	IC 5-22-15-19
Prohibition of sale or distribution of mercury added novelty items, thermometers, mercury in schools, and other mercury commodities; also includes provision on public education programs and collection programs.	IC 13-20-17.5
Requires addressing mercury switches in end of life vehicles, including via motor vehicle manufacturer development of plan to remove, collect, recover and dispose of/ recycle switches, with costs of many components borne by manufacturers, and implementation requirements on vehicle recyclers.	IC 13-20-17.7
Greening the Government initiatives, including requiring agencies to appoint staff to Greening the Government Taskforce, which would evaluate programs including recycling collection, procurement, and enhancing P2, energy efficiency, and source reduction in government operations	Executive Order No. 03-27 (2003)*
Greening the Government initiatives, including reducing paper use, reusing office supplies, and specifying, where possible, durable, recycled content, energy efficient, non-mercury, and low-toxicity products	Executive Order No. 05-21 (2005)
Created Interagency Council on Energy to oversee development and implementation of the state's Strategic Energy Plan, which includes calls for increased use state-produced biofuels and energy efficiency measures	Executive Order No. 06-14 (2006)

* Superseded Executive Order No. 99-07.

Indiana General Assembly, Laws & Administrative Rules, available at http://www.in.gov/legislative/ic_iac/
(can also access Executive orders; more recent orders available at <http://www.in.gov/gov/media/eo/>)

Environmentally Preferable Purchasing

Michigan	
Policy/Law	Source
Sets price preference (10%) for supplies, materials and equipment made from recycled materials, to 20% goal by 1991; paper purchases should be at least 50% recycled content by 1991	Management and Budget Act 431 of 1984, sections 18.1261a, 18.1261b
Bans purchase, storage or use of free flowing elemental mercury, including in instruments	Revised School Code, Act 451 of 1976, section 380.1274b (revised 2000)
Calls for statewide market development research study and follow-up program, including goal of expanding market for recycled materials	Natural Resources and Environmental Protection Act (NREPA) 451 of 1994, section 324.19116
Bans sale or promotion of mercury-added thermometers	NREPA 451 of 1994, section 324.17202 (revised 2002)
Bans sale or promotion of mercury blood pressure devices	NREPA 451 of 1994, section 324.17204 (revised 2006)
Bans sale or promotion of mercury thermostats	NREPA 451 of 1994, section 324.17205 (revised 2006)
Bans sale or promotion of mercury esophageal dilators, bougie tubes, or gastrointestinal tubes	NREPA 451 of 1994, section 324.17206 (revised 2006)
Bans manufacture, processing or distribution of pentabromodiphenyl and octabromodiphenyl ether flame retardant mixtures	NREPA 451 of 1994, section 324.14722, 324.14723 (subpart also known as the Mary Beth Doyle PBDE act, revised 2005)
Promotes energy efficiency in state buildings and operations, including consideration of energy efficiency and life-cycle costs in purchases of goods and supplies	Executive Directive No. 2005-4
Promotes green chemistry, including encouraging the use of less toxic or non-toxic chemical alternatives to hazardous substances	Executive Directive No. 2006-6

Michigan Legislature, Michigan Code and Public Acts, available at <http://www.legislature.mi.gov/>

Michigan Executive Directives available at <http://www.michigan.gov/gov/0,1607,7-168-36898---,00.html>

Minnesota	
Policy/Law	Source
State must consider recycled content and recyclability of commodities to be purchased in considering bid specifications; 10% price preference	Minnesota Statutes (MS), 16B.121
State must consider purchase of paper with several attributes (e.g. recycled content, minimal chlorine bleach, soy-based/sparsely used inks, etc.), and 10% price preference	MS 16B.122
State, counties and municipalities must consider environmental impacts in selecting scrap metal recycling facilities	MS 16B.124
New or renovated (50% or more) agency buildings must consider designs with alternative energy systems (e.g. solar or earth-sheltered)	MS 16B.32
Department of Administration and the Department of Commerce required to develop sustainable building design guidelines by January 2003 (emphasis on energy conservation)	MS 16B.325
State agencies must purchase cleaner fuels and vehicles capable of running on cleaner fuels, when cost-competitive	MS 16C.135
State agencies must meet goals of reduced gasoline use (by 50% by 2015), in part through increased use of biofuels and electronic information transfer	MS 16C.137
Restrictions on disposal approaches for mercury containing products	MS 115A.932
States that it is the policy of the state to “encourage toxic pollution prevention. The preferred means of preventing toxic pollution are techniques and processes that are implemented at the source...”	MS 115D.02
Restrictions concerning sales, use and labeling of mercury containing products, including banning of thermometers, toys, games and apparel containing mercury, and requirements on providing information or services on mercury containing thermostats, displacement relays, fluorescent bulbs and high intensity discharge lamps	MS 116.92
Promote “policy and cultural reform to give priority to preventing pollution” in state agencies; continue implementation of activities through Interagency Pollution Prevention Advisory Team; develop policy statements in agencies generating or regulating waste generation activities; encourage pollution prevention through purchasing policies and specifications; and requires Office of Environmental Assistance to provide technical assistance	Executive Order 99-4 (1999)

Minnesota (cont.)	
Policy/Law	Source
Encourage state departments to reduce air pollution, through means including using cleaner vehicle fuels, purchase of energy-efficient equipment and appliances, and procurement of products contributing to less air pollution	Executive Order 04-08 (2004)
Requires measures in state buildings to conserve energy, including settings of thermostats, use of guidelines in new building construction, and identifying other energy conservation measures	Executive Order 05-16 (2005)
Expand infrastructure and increase state vehicle usage of ethanol and biodiesel fuels	Executive Order 06-03 (2006)
Product Stewardship Policy Initiative is voluntary program involving working with industry to promote development of less toxic products, recycling, and reuse	Project of Minnesota Office of Environmental Assistance

Minnesota Statutes, Session Laws & Rules available at <http://www.leg.state.mn.us/leg/statutes.asp>

Minnesota, Executive Orders available at <http://www.governor.state.mn.us/priorities/governorsorders/executiveorders/index.htm>

New York	
Policy/Law	Source
Bans sales of mercury-added novelty products, mercury thermometers, elemental mercury, barometers, esophageal dilators and other medical products, flow meters and other measuring devices, mercury switches or relays, and acquisition of mercury products in schools; requires labeling of any mercury-added products; requires periodic report on availability of alternatives, and creates advisory committee on mercury pollution	New York Environmental Conservation Law Article 27, Title 21 (ENV 27-2101 - 27-2117)
Requires wireless telephone suppliers to either accept used phones or pay for shipping, and take reasonable steps to ensure reuse, recycling, or environmentally sound disposal	ENV 27-2303
Directs state to purchase recycled, remanufactured or recyclable products, with price premium up to 15 percent	State Finance Law (STF), Article 11, 11-165.3
Directs all public and nonpublic elementary and secondary schools in New York state to use environmentally sensitive cleaning and maintenance products, and state would also maintain list of such products; directive against use of para-dichlorobenzene urinal blocks	State Education Law (EDN) 9-409.1, 9-409-I, and STF 11-163b; EDN 9-409-G
Bans manufacture, processing or distribution of pentabromodiphenyl and octabromodiphenyl ether flame retardant mixtures	ENV 37-0111
Prohibits sale, offer to sale, or installation of certain products (including refrigerators, freezers, and audio and video equipment) not meeting minimum energy performance standards	Energy Law, 16-102 - 16-108
Establishes new waste reduction and recycling initiatives for state agencies	Executive Order No. 142 (1991)
Energy efficiency and purchasing directive; includes establishment of energy efficiency goals for state buildings, requirement on following green building guidelines for new construction and substantial renovations of existing buildings, and requirements on purchase of energy efficient products and clean fuel vehicles	Executive Order 111 (2001)
Directs state agencies to use environmentally preferred cleaning products	Executive Order No. 134 (2005)*
Directs state agencies and authorities to diversify transportation fuel and heating oil supplies through the use of bio-fuels in state vehicles and buildings	Executive Order No. 142 (2005)

* Executive Order not renewed by Gov. Eliot Spitzer (January 1, 2007). (http://www.ny.gov/governor/executive_orders/exeorders/5.html)

New York State Assembly, statutes and legislation, available at <http://assembly.state.ny.us/leg/>

Environmentally Preferable Purchasing

Ohio	
Policy/Law	Source
Office of Energy Services created within Department of Administrative Services (DAS), with goals including energy efficient procurement	Ohio Revised Code (R.C.) 123.011
Requires DAS provide information and training on energy efficiency/energy conservation measures to state, local, and Board of Education employees involved in purchasing	R.C. 125.19
Beginning July 2006, all vehicles acquired by state must be capable of using alternative fuels, and such fuels must be used if available at reasonable price; also created biodiesel revolving fund	R.C. 125.831 - 125.834; 125.836
Bans sale or distribution of mercury products, including bulk mercury or mercury-containing instruments in schools, thermometers, novelty items, and thermostats	R.C. 3734.61-5*
Measure on energy efficiency and conservation, which includes requirements on duties and cooperation between DAS Office of Energy Services and Department of Development Office of Energy Efficiency; includes requirement that rules be developed by DAS on state purchase of products and services	House Bill 0251*
Creates Governor’s Energy Advisor and promotes coordinated energy policy, reduced and improved energy consumption by the state buildings and vehicles, and energy savings programs in colleges and universities	Executive Order 2007-02S

*: Signed by Governor on January 4, 2007.

Ohio General Assembly, laws available at <http://www.legislature.state.oh.us/laws.cfm>

Ohio Legislative Service Commission available at <http://www.lsc.state.oh.us/index.html>

Pennsylvania	
Policy/Law	Source
Includes provision requiring state to set minimum recycled content for goods, materials, equipment and printing, based on U.S. EPA guidelines, with five percent price preference	Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101 of 1988), 53 Pennsylvania Statute (P.S.), Section 4000.101 and subsequent sections; also 62 P.S. Section 101
Establishes policy and responsibilities for the use of post-consumer recycled content in the procurement of goods and services	Management directive 205.28 (1993)
Establishes Governor's Green Government Council, with goals including incorporation of environmentally sustainable practices (including pollution prevention and energy efficiency improvements) into the Commonwealth's activities (and goal of zero emissions). Includes goals of procurement of environmentally friendly commodities, vehicles, and services	Executive Order 1998-1 (1998)

Pennsylvania Legislature information available at <http://www.legis.state.pa.us/>
 (Consolidated statutes are not available online, but are available through Legislative Reference Bureau, 717-783-1530).

Environmentally Preferable Purchasing

Wisconsin	
Policy/Law	Source
Requires Department of Administration (and other designated purchasing agents) to write specifications that include requirements on purchase of products made from recycled and recovered materials if technically and economically feasible	Wisconsin Statutes (WS) 16.72 (2)(e)
Requires Department of Administration to consider (when appropriate) life cycle cost estimates in awarding contracts for materials, supplies or equipment	WS 16.75 (1)(1m)
Prohibits manufacturer or distributor from selling a package, packaging material or packaging component with a total concentration of lead, cadmium, mercury plus hexavalent chromium above various thresholds (reduced from 1992 - 1994)	WS 100.285
Prohibits sale of product in plastic container unless container includes at least 10% remanufactured or recycled material	WS 100.297
Bans sale or distribution of any toy containing elemental mercury, as well as sale of certain chemicals and chemical mixtures*	WS 100.37 (2)(e) 2.d
Created Governor’s Task Force on Energy Efficiency and Renewables to develop policy options on increasing energy efficiency and renewable energy	Executive Order 25 (2003)
Created Consortium on Biobased Industry, with goals including recommendation of policies and strategies to develop state-based bio-based products and bioenergy in environmentally sound manner	Executive Order 101 (2005)
Created Governor’s Task Force on Waste Materials Recovery and Disposal, with goals including recommending ways the state can reduce generation of waste materials	Executive Order 106 (2005)

*: At least six bills were introduced in the past three legislative sessions pertaining to mercury containing products, but none were enacted into law.

Wisconsin Legislature, statutes and legislation, available at <http://www.legis.state.wi.us/rsb/stats.html>

Executive Orders available from <http://wsl.state.wi.us/wisco.html>

Appendix III

Resources Utilized and Environmentally Preferable Purchasing Implementation Barriers for Great Lakes States, Municipalities and Institutions As Derived from Survey

The tables on the following pages provide responses from the agencies surveyed on resources they have consulted as well as barriers identified in implementation of environmentally preferable purchasing programs. As noted in the main text and Appendix I, direct responses were not received from administrative agencies in Minnesota and Wisconsin; information below for those states was obtained based on correspondence with purchasing staff in other agencies (the Minnesota Pollution Control Agency and the Wisconsin Department of Natural Resources, respectively), and independently obtained information. For municipalities and universities, all information below was obtained directly from the responding agencies.

Table AIII.1.
**Resources Utilized by Purchasing Agency Staff in Great Lakes States,
Municipalities and Universities**

	Non-profit Resources	Federal Resources	State Resources	State Programs	Purchasing Contracts	Other
States						
Illinois	•	•	•	•	•	
Indiana		•	•			N ¹
Michigan						• ²
Minnesota			•	•		N ³
New York						
Ohio	•	•				
Pennsylvania		•	•		•	N ⁴
Wisconsin						
Municipalities						
Buffalo, NY				•		• ⁵
Columbus, OH	•	•	•	•	•	
Erie County, NY			•			N ⁶
Green Bay, WI						
Indianapolis, IN				•		
Kalamazoo, MI						
Lansing, MI			•			
Racine, WI						
Universities						
Southern Illinois University						
University of Buffalo	•		•	•		
University of Wisconsin-Madison						

Notes: 1. State reported using U.S. EPA EPP Web site and tools; 2. Bid submissions; 3. Minnesota Pollution Control Agency reported using state EPP newsletter; 4. State reported using U.S. EPA EPP guidebook, Pennsylvania Department of General Services list of Green Contracts; 5. State has received requests from vendors to be able to provide information on environmentally preferable products; 6. King County (WA) email newsletter

Table AIII.2.

Barriers to Implementation of Environmentally Preferable Purchasing Programs as Identified by Purchasing Agency Staff in Great Lakes States, Municipalities and Universities

	Financial	Lack of Mandate	Lack of Understanding of Benefits	Lack of Understanding of Alternatives	Limited Availability of Alternatives	Other
State						
Illinois	•	•	•	•	•	
Indiana	•					• 1
Michigan						
Minnesota	•					• 2
New York						
Ohio	•	•			•	
Pennsylvania	•	•				
Wisconsin						N ³
Municipalities						
Buffalo, NY	•					
Columbus, OH						
Erie County, NY	•	•				
Green Bay, WI		•	•	•		
Indianapolis, IN	•					
Kalamazoo, MI	•					
Lansing, MI		•				
Racine, WI						• 4
Universities						
Southern Illinois University						
University of Buffalo						• 5
University of Wisconsin-Madison						

Notes: 1. Limited availability of personnel; 2. Limited availability of personnel; 3. Wisconsin DNR noted lack of staff as additional barrier; 4. Concern about environmental impact of products and services not presented as issue; 5. Lack of enforcement requirements, and questions on implementation.

Appendix IV

Contact Information for Survey Participants

States

Illinois

Illinois Department of Central Management Services
Rick Hughes
217-558-6811
rick.hughes@illinois.gov
EPP website: <http://www.cms.il.gov/green/>

Indiana

Greening the Government
Phillip Giddens, Director
(317) 232-7658
pgiddens@idoa.in.gov
EPP website: <http://www.in.gov/idoa/services/greening/initiatives/epp.html>

Michigan

Michigan Department of Management & Budget
Anthony Deschenes, Division Director
(517) 335-1559
deschenesa1@michigan.gov
EPP website: http://www.michigan.gov/deq/0,1607,7-135-3585_4127_4174---,00.html

Minnesota

Minnesota Department of Administration
Brenda Willard, Acquisitions Manager
651-201-2402
brenda.willard@state.mn.us
EPP website: <http://www.mmd.admin.state.mn.us/envir.htm>

Minnesota Pollution Control Agency
Angela Bourdaghs, EPP Specialist
651-215-0261
angela.bourdaghs@state.mn.us

New York

New York State Office of General Service
Bruce Hallenbeck, Procurement Services
518-408-1705
bruce.hallenbeck@ogs.state.ny.us
EPP website: <http://www.ogs.state.ny.us/purchase/EnvironmentPurchasing.asp>

Ohio

Ohio Office of Procurement Services
Stephen Hunter, Administrator
614-466-7066
stephen.hunter@das.state.oh.us
EPP website: <http://www.epa.state.oh.us/opp/eppmain.html>

Pennsylvania

Green Government Council
Jeffrey Olsen, Liaison Director
(717) 705-0374
jeolsen@state.pa.us
EPP website: <http://www.gggc.state.pa.us/procurement/cwp/view.asp?a=3&q=154955>

Wisconsin

Wisconsin Department of Administration
Michael Pohlman, Director
608-266-1060
michael.pohlman@wisconsin.gov
EPP website: <http://vendornet.state.wi.us/vendornet/recycle/index.asp>

Wisconsin Department of Natural Resources
David Behn, Procurement Director
608-266-8446
david.behn@dnr.state.wi.us

Municipalities/Counties

Indiana

Indianapolis Purchasing Division
Brett Wineinger, Assistant Administrator
317-327-4900
bwineing@indygov.org

Michigan

Kalamazoo Purchasing
Kalamazoo, MI
Nicholas Lam, Purchasing Director
269-337-8441
LamN@kalamazoocity.org

Lansing, MI
Antonia Kraus, Purchasing Director
517-483-4121
purchasing@ci.lansing.mi.us

New York

Buffalo Division of Purchase
Buffalo, NY
Kathleen Fitzpatrick, Director
716-851-5222
kfitzpatrick@city-buffalo.com

Erie County Department of Environmental Planning
Buffalo, NY
Bonnie Lawrence, Environmental Project Manager
716-858-8560
lawrencb@erie.gov

Ohio

Columbus Purchasing Office
Columbus, OH
Nappy Hetzler, Procurement Manger
(614) 645-6112
nhetzler@columbus.gov

Wisconsin

Green Bay, WI
Linda Dupuis, Purchasing Agent
920-448-3051
lindadu@ci.green-bay.wi.us

Racine, WI
Sam Aiello, CPM
262-636-9143
sam.aiello@cityofracine.org

Institutions/Universities

Illinois

Southern Illinois University
Carbondale, IL
Pat Cook, Purchasing Officer III
618-453-6710
pcook@siu.edu

New York

Green Office
University of Buffalo
Buffalo, NY
Erin Cala, Environmental Educator
716-829-3535
ecala@facilities.buffalo.edu

Wisconsin

University of Wisconsin
Madison, WI
Michael Hardiman, Purchasing Director
608-262-8721
mhardiman@busvc.wisc.edu

Appendix V

State Purchasing Agency and Environmentally Preferable Purchasing Web Sites

<i>Purchasing Agency</i>	<i>EPP Program</i>
Alaska	
Department of Administration-Procurement http://www.state.ak.us/admin/das/pu/home.shtml	Green Star http://www.greenstarinc.org/downloads/TS1.pdf
Alabama	
State of Alabama Department of Finance-Division of Purchasing http://www.purchasing.state.al.us/	Earth 911 http://alabama.earth911.org/master.asp?s=lib&a=brrc/GreenPurchasing.asp
Arkansas	
Arkansas Department of Finance & Administration-Office of State Procurement http://www.accessarkansas.org/dfa/procurement/pro_index.html	Recycling of Electronic Equipment http://www.accessarkansas.org/dfa/procurement/pro_agency.html#recycling
Arizona	
Arizona Department of Administration-Enterprise Procurement Services http://www.azspo.az.gov/index.htm	Arizona Department of Environmental Quality http://www.azdeq.gov/function/business/contracts.html
California	
Department of General Services, Procurement http://www.pd.dgs.ca.gov/default.htm	State Agency Buy Recycled Campaign http://www.ciwmb.ca.gov/BuyRecycled/StateAgency/Default.htm
Colorado	
Colorado Department of Personnel and Administration-Division of Finance and Procurement http://www.colorado.gov/dpa/dfp/spo/index.htm?opendocument	State of Colorado http://www.colorado.gov/greeninggovernment/programs/epp/index.html

Environmentally Preferable Purchasing

<i>Purchasing Agency</i>	<i>EPP Program</i>
<i>Connecticut</i>	
Department of Administrative Services- eProcurement http://www.das.state.ct.us/busopp.asp	CT. Department of Environmental Protection http://www.nerc.org/Connecticut.html
<i>Delaware</i>	
Office of Management and Budget : Government Support Services : Delaware Surplus Services http://www.state.de.us/dss/contracting/spp.shtml	Delaware Division of Air and Waste Management http://www.awm.delaware.gov/Info/GreenPurchasing.htm
<i>District of Columbia</i>	
	Green Seal
<i>Florida</i>	
Department of Management Services http://dms.myflorida.com/purchasing	
<i>Georgia</i>	
Department of Administrative Services-State Purchasing http://statepurchasing.doas.georgia.gov/02/doas/osp/home/0,2469,35226973,00.html	Environmental Requirements http://statepurchasing.doas.georgia.gov/00/channel_title/0,2094,35226973_37131159,00.html
<i>Hawaii</i>	
State Procurement Office http://www.spo.hawaii.gov/	EPP Management Action Plan http://www.hawaii.gov/spo/SPO/epps/Final%20EPP%20Management%20Action%20Plan.pdf
<i>Idaho</i>	
Idaho Department of Administration http://adm.idaho.gov/purchasing/	Idaho GEMstars http://www.idahogemstars.org/
<i>Iowa</i>	
Department of General Services-Purchasing http://www.das.gse.iowa.gov/iowapurchasing/	Iowa DNR Waste Management http://www.iowadnr.com/waste/recycling/buyrecycled.html
<i>Illinois</i>	
Illinois Department of Central Management Services, Selling to the State of Illinois http://www.cms.il.gov/cms/1_selling/	Illinois EPA and Waste Management Research Center http://www.cms.il.gov/green/

<i>Purchasing Agency</i>	<i>EPP Program</i>
<i>Indiana</i>	
Indiana Department of Administration, Procurement Division http://www.ai.org/idoa/proc/index.html	Greening the Government http://www.in.gov/idoa/services/greening/initiatives/epp.html
<i>Kansas</i>	
Kansas Department of Administration-Division of Purchasing http://da.state.ks.us/purch/	
<i>Kentucky</i>	
Kentucky Office of Material and Procurement http://finance.ky.gov/business/procurementservices/	Kentucky Pollution Prevention Center http://www.kppc.org/resources/workshops/
<i>Louisiana</i>	
Office of State purchasing and Travel http://www.doa.state.la.us/osp/osp.htm	Louisiana DEQ http://www.deq.state.la.us/portal/tabid/2139/Default.aspx
<i>Massachusetts</i>	
Massachusetts, Operational Services Division http://www.mass.gov/?pageID=osdhomepage&L=1&LO=Home&sid=Aosd	Massachusetts, Operational Services Division http://www.mass.gov/?pageID=osdtopic&L=3&sid=Aosd&LO=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+(EPP)+Procurement+Program
<i>Maryland</i>	
Department of General Services-Procurement and Logistics http://www.dgs.maryland.gov/overview/logistics.htm	Maryland Department of the Environment http://www.mde.state.md.us/Programs/LandPrograms/Recycling/SpecialProjects/buyrecycled.asp
<i>Maine</i>	
Maine Department of Administrative & Financial Services, Division of Purchasing http://www.maine.gov/purchases/	EPA Maine http://www.maine.gov/dep/oia/p2/epp.htm
<i>Michigan</i>	
Doing Business With the State (Dept. of Mgmt. & Budget) http://www.michigan.gov/doingbusiness	Michigan DEQ (includes PDFs on EPP) http://www.michigan.gov/deq/0,1607,7-135-3585_4127_4174--00.html
<i>Minnesota</i>	
Materials Management Division http://www.mmd.admin.state.mn.us/	Environmentally Preferable Purchasing http://www.mmd.admin.state.mn.us/envir.htm

Environmentally Preferable Purchasing

<i>Purchasing Agency</i>	<i>EPP Program</i>
<i>Missouri</i>	
Division of Purchasing and Materials Mgmt. http://www.oa.mo.gov/purch/	Environmentally Preferable Products & Services (Missouri Office of Administration) http://www.oa.mo.gov/purch/recycling/epp.htm
<i>Mississippi</i>	
Office of Purchasing and Travel http://www.dfa.state.ms.us/Purchasing/ms_pur.htm	No Specific Program; info in Purchasing Manual pg 10-8 http://www.dfa.state.ms.us/Purchasing/Proc_Man/chapter10.pdf
<i>Montana</i>	
Department of Administration http://deq.mt.gov/Recycle/3Rs/3rwhatdoing.asp	Environmentally Preferable Procurement http://www.oa.mo.gov/purch/recycling/eppr.pdf
<i>Nebraska</i>	
Purchasing Bureau http://www.das.state.ne.us/materiel/purchasing/purchasing.html	Earth 911 http://nebraska.earth911.org/master.asp?s=lib&a=brrc/GreenPurchasing.asp
<i>Nevada</i>	
Purchasing Division http://purchasing.state.nv.us/	Environmentally Preferable Purchasing http://purchasing.state.nv.us/epp.htm
<i>New Hampshire</i>	
Bureau of Purchase and Property http://admin.state.nh.us/purchasing/index2.asp	NHIOF hosted EPP workshop http://www.nhiof.org/workshops/epp.asp
<i>New Jersey</i>	
Division of Purchase & Property http://www.state.nj.us/treasury/purchase/	Bureau of Recycling and Planning http://www.state.nj.us/dep/dshw/recyclenj/
<i>New Mexico</i>	
State Purchasing Division http://www.state.nm.us/gsd/spd/	No program, but preferences in place http://www.state.nm.us/clients/spd/amendrbm53_1003.pdf
<i>New York</i>	
Office of General Services, Procurement Contracting http://www.ogs.state.ny.us/psg/defaultitpur.html	Environmentally Preferable Purchasing http://www.ogs.state.ny.us/purchase/EnvironmentPurchasing.asp

<i>Purchasing Agency</i>	<i>EPP Program</i>
North Carolina	
Division of Purchase & Contract http://www.doa.state.nc.us/PandC/	Environmentally Preferable Procurement http://www.p2pays.org/epp/
North Dakota	
Central Services Division http://www.state.nd.us/csd/	
Ohio	
State Procurement http://www.procure.ohio.gov/proc/index.asp	Ohio EPA http://www.epa.state.oh.us/opp/eppmain.html
Oklahoma	
Central Purchasing Division http://www.dcs.ok.gov/Central_Purchasing/index.html	Oklahoma EPA document http://www.deq.state.ok.us/factsheets/general/electron.pdf
Oregon	
Oregon Department of Administrative Services, State Procurement Office http://egov.oregon.gov/DAS/PFSS/SPO/index.shtml	Included in "Sustainable Oregon" initiative http://www.sustainableoregon.net/citizens/waste_reduction.cfm
Pennsylvania	
Department of General Services, Bureau of Procurement http://www.dgs.state.pa.us/	Green Procurement http://www.gggc.state.pa.us/procurement/cwp/view.asp?a=3&q=154955
Rhode Island	
Division of Purchases http://www.purchasing.state.ri.us/	Rhode Island Resource Recovery Corporation http://www.rirrc.org/main.cfm?sec_id=27&guid=ce09a18f-9151-4bb7-a68a-331d3fd91204
South Carolina	
State Procurement http://www.state.sc.us/mmo/spo/spomenu.htm	Distributors/Manufacturers of Recycled Products http://www.state.sc.us/mmo/spo/recycle.htm
South Dakota	
Office of Procurement Management http://www.state.sd.us/boa/opm/	Earth 911 http://southdakota.earth911.org/master.asp?s=lib&a=brrc/GreenPurchasing.asp

Environmentally Preferable Purchasing

<i>Purchasing Agency</i>	<i>EPP Program</i>
<i>Tennessee</i>	
Purchasing Division http://www.state.tn.us/generalserv/purchasing/	Department of Environment and Conservation http://www.state.tn.us/environment/ea/eo/eo_eppguide.shtml
<i>Texas</i>	
Building and Procurement Commission http://www.tbpc.state.tx.us/	Texas Commission on Environmental Quality http://www.tceq.state.tx.us/assistance/P2Recycle/TXrecy/about.html
<i>Utah</i>	
Division of Purchasing and General Services http://www.purchasing.state.ut.us/	Earth 911 http://utah.earth911.org/master.asp?s=lib&a=brrc/GreenPurchasing.asp
<i>Vermont</i>	
Building and General Services http://www.bgs.state.vt.us/pca/index.html	Department of Building and General Services http://www.bgs.state.vt.us/PCA/epp/index.htm
<i>Virginia</i>	
Division of Purchases and Supply http://159.169.222.200/dps/	Green Seal
<i>Washington</i>	
Washington General Administration, State Purchasing http://www.ga.wa.gov/purchase/index.html	Environmentally Preferable Purchasing http://www.ga.wa.gov/PCA/Forms/EPP-Manual.pdf
<i>West Virginia</i>	
Purchasing Division http://www.state.wv.us/admin/purchase/	
<i>Wisconsin</i>	
Bureau of Procurement, VendorNet System http://vendornet.state.wi.us/vendornet/	Recycling Procurement Program http://vendornet.state.wi.us/vendornet/recycle/index.asp
<i>Wyoming</i>	
Wyoming State Procurement http://ai.state.wy.us/GeneralServices/procurement/	

Appendix VI

Environmentally Preferable Purchasing— Programs, Web Sites and Other Resources

Federal

U.S. Environmental Protection Agency (EPA),
Environmentally Preferable Purchasing
<http://www.epa.gov/epp/>

U.S. EPA, Environmentally Preferable Purchasing
Guidance
[http://www.epa.gov/oppt/epp/pubs/guidance/
guidancepage.htm](http://www.epa.gov/oppt/epp/pubs/guidance/guidancepage.htm)

U.S. EPA, Comprehensive Procurement Guidelines
(includes link to CPG Supplier Database)
<http://www.epa.gov/cpg/>

U.S. General Services Administration - Products
<http://www.gsa.gov/Portal/gsa/ep/home.do?tabId=2>

Associations

California Association of Public Procurement
Officers
<http://www.cappo.org>

Environmental Council of the States
<http://www.ecos.org/>

Great Lakes Regional Pollution Prevention
Roundtable
<http://www.glrppr.org/>

National Association of Counties
<http://www.naco.org/>

National Association of State Purchasing Officials
<http://www.naspo.org/>

North American Green Purchasing Initiative of the
Commission for Environmental Cooperation
[http://www.cec.org/programs_projects/
trade_environ_econ/nagpi/](http://www.cec.org/programs_projects/
trade_environ_econ/nagpi/)

Northeast Recycling Coalition - Environmentally
Preferable Products Procurement Listserv
<http://www.nerc.org/eppnet.html>

Non-profit

Canadian Centre for Pollution Prevention
<http://www.c2p2online.com/>

Center for a New American Dream, Institutional
Purchasing Program
<http://www.newdream.org/procure>

Clean Production Action
<http://www.cleanproduction.org/>

Government Purchasing Project
<http://www.gpp.org/>

Health Care Without Harm - Green Purchasing
<http://www.noharm.org/us/greenPurchasing/issue>

INFORM - Purchasing for Pollution Prevention
http://www.informinc.org/p3_00.php

National Pollution Prevention Roundtable
<http://www.p2.org/>

Pacific Northwest Pollution Prevention Resource Center
<http://www.pprc.org/>

Zero Waste Alliance
<http://www.zerowaste.org/index.htm>

Certification, Product Content and Environmentally Preferable Purchasing Tools

California Integrated Waste Management Board, Recycled-Content Product Directory
<http://www.ciwmb.ca.gov/RCP/>

California Integrated Waste Management Board, Purchasing and Tracking Tools
<http://www.ciwmb.ca.gov/BuyRecycled/Resources/Tools.htm>

Center for a New American Dream, Tools and Databases
<http://www.newdream.org/procure/toolres.php>

Electronic Product Environmental Assessment Tool
<http://www.epeat.net/>

Environment Canada, Environmental Choice Program
<http://www.environmentalchoice.com/>

Green Seal
<http://www.greenseal.org/programs/government.cfm>

INFORM - Alternatives to PBT-Containing Products
http://www.informinc.org/p3_04.php

Pennsylvania Department of Environmental Protection, Recycled Products Guide
http://www.dep.state.pa.us/wm_apps/recycledproducts/

U.S. EPA, EPP Tools
<http://www.epa.gov/epp/tools/toolsuite.htm>

U.S. EPA, The Top 20 Priorities for EPP Pilot Projects
<http://www.epa.gov/oppt/epp/pubs/guidance/top20.htm>

U.S. EPA and U.S. Department of Energy, EnergyStar
<http://www.energystar.gov/>

U.S. General Services Administration, GSA Advantage
(targeted at federal purchasers, with capability to search for items meeting environmental criteria)
https://www.gsaadvantage.gov/advgsa/advantage/main/start_page.do

Sample Green Procurement Policies

California Integrated Waste Management Board, Green Procurement Policies
<http://www.ciwmb.ca.gov/BuyRecycled/Policies/>

California Integrated Waste Management Board, Laws and Policies
(includes sample policies)
<http://www.ciwmb.ca.gov/epp/LawPolicy/>

California Integrated Waste Management Board, Model Procurement Policies
<http://www.ciwmb.ca.gov/LGLibrary/Innovations/Procurement/>

Center for a New American Dream, Green Purchasing Policies
<http://www.newdream.org/procure/policy/index.php>
King County (WA), Model Environmentally Preferable Products Policy
<http://www.metrokc.gov/procure/green/mdpolicy.htm>

Massachusetts, Environmentally Preferable Products (EPP) Procurement Program
<http://www.mass.gov/?pageID=osdhomepage&L=1&LO=Home&sid=Aosd>
(linked from Operational Services Division Web site)

SF Environment (San Francisco, CA), Less-toxic Purchasing
<http://sfenvironment.com/aboutus/innovative/epp/>

U.S. EPA, Database of Environmental Information for Products and Services
<http://yosemite.epa.gov/oppt/eppstand2.nsf>

Sector-Specific Programs/Links

Green Buildings and Construction and Demolition (Maryland Department of the Environment)
<http://www.mde.state.md.us/Programs/LandPrograms/Recycling/SpecialProjects/grnbdgdc.asp>

Greening Schools - Environmentally Preferable Purchasing
(Illinois Environmental Protection Agency and Illinois Waste Management Resource Center)
http://www.greeningschools.org/resources/view_cat_admin.cfm?id=9

Sustainable Hospitals - Examples of Mercury Purchasing Language
http://www.sustainablehospitals.org/HTMLSrc/IP_Merc_Tools_Purchpolicy.html

U.S. EPA, Green Buildings
<http://www.epa.gov/greenbuilding/>
U.S. Green Building Council
<http://www.usgbc.org/>

Academic Programs

Illinois Waste Management and Research Center
<http://www.wmrc.uiuc.edu/>

Lowell Center for Sustainable Production
<http://www.sustainableproduction.org/>

EPP Program Links

Michigan Department of Environmental Quality, EPP Links, available at
http://www.michigan.gov/deq/0,1607,7-135-3585_4127_4174-11451--,00.html

Minnesota Office of Environmental Assistance, Model Programs for Environmentally Preferable Purchasing, available at
<http://www.pca.state.mn.us/oea/lc/purchasing/resources.cfm>

U.S. Conference of Mayors, Recycling Links
http://www.usmayors.org/uscm/uscm_projects_services/buy_recycled/links.htm

U.S. EPA, EPP Links
<http://www.epa.gov/epp/pubs/links/linkspage.htm>

Selected Articles, Reports and Books

Brower, Michael and Leon, Warren. 1999. *Consumer's Guide to Effective Environmental Choices-Practical Advice from the Union of Concerned Scientists*, New York, NY: Three Rivers Press, 292 pp.

Environmentally Preferable Purchasing

Case, S., Policy Updates Inspire Environmental Purchasing, Government Procurement, February 2004, pp. 9-13, available at http://www.newdream.org/procure/Updates_Inspire_Env_Purch.pdf

Liddell, Beth, *Environmentally Preferable Purchasing (EPP) Programs and Strategies: Integrating Environmental and Social Factors into Procurement Practices*, Pacific NW Pollution Prevention Resource Center, Oct. 21, 2003, available at http://www.pprc.org/pubs/epp/epp_programs_and_strategies.pdf

Lyons, Kevin, 1999. *Buying for the Future: Contract Management and the Environmental Challenge*, Pluto Press, Ann Arbor, MI: University of Michigan Press, 176 pp.

Michigan Department of Environmental Quality, 2006. *The Green Industry Guide to Environmental Purchasing*, January 2006, available at <http://www.deq.state.mi.us/documents/deq-ess-p2-turf-purchasingguide.pdf>

National Wildlife Federation, 2006, *Environmentally Preferable Purchasing: A Getting Started Guide*, available at http://www.p2pays.org/ref/37/36601/36601_p1-p20.pdf

North American Commission for Environmental Cooperation, 1999. *Supporting Green Markets: Environmental Labeling, Certification and Procurement Schemes in Canada, Mexico and the United States*, available at http://www.cec.org/files/PDF/ECONOMY/labels-e_EN.pdf

North American Commission for Environmental Cooperation, *Environmental Purchasing Policies 101: An Overview of Current Environmentally Preferable Purchasing Policies* (by Scott Case, Center for a New American Dream), March 25, 2004, available at <http://www.newdream.org/procure/policy/policy101.pdf>

Solid Waste Management Coordinating Board (Twin Cities, MN). *The Environmentally Preferable Purchasing Guide*, available at <http://greenguardian.com/EPPG/default.asp>

U.S. EPA, 2004. *Comprehensive Procurement Guidelines, Buy-Recycled Series, Fact Sheet*, EPA-530-F-04-015, available at <http://www.epa.gov/epaoswer/non-hw/procure/pdf/paper.pdf>

U.S. EPA, 2004. *Buying Green Online: Greening Government E-Procurement of Office Supplies*, EPA 742-R-04-001, available at http://www.epa.gov/oppt/epp/pubs/buying_green_online.pdf

U.S. EPA, 2006, *Promoting Green Purchasing: Tools and Resources to Quantify the Benefits of Environmentally Preferable Purchasing* (tips for federal purchasing officials, but likely useful for any purchasing officials) http://www.epa.gov/epp/tools/epp_metrics.pdf

References

- ¹ U.S. Environmental Protection Agency (EPA), National Listing of Fish Advisories, available at <http://www.epa.gov/OST/fish>
- ² For more information, see U.S. EPA, Persistent, Bioaccumulative, Toxic Chemical Program, available at <http://www.epa.gov/PBT>
- ³ U.S. EPA, Mercury Study Report to Congress, Volume II: An Inventory of Anthropogenic Mercury Emissions in the United States, Office of Air Quality Planning and Standards and Office of Research and Development, EPA-452/R-97-004, 1997; also, Environment Canada, U.S. EPA, Binational Toxics Strategy, 2005 Progress Report, available at <http://www.epa.gov/glnpo/bns/>
- ⁴ Leopold, B. 2002, Use and Release of Mercury in the United States, report to U.S. EPA, National Risk Management Research Laboratory, EPA/600/R-02/104, December 2002, available at <http://www.epa.gov/nrmrl/pubs/600r02104/600r02104prel.pdf>
- ⁵ See for example, Mahaffey, K.R., 2000. Recent advances in recognition of low-level methylmercury poisoning, *Current Opinion in Neurology*, 13:699-707; Mergler, D.M., Anderson, H.A., Chan, L.H.M., Mahaffey, K.R., Murray, M.W., Sakamoto, M., Stern, A.H., 2007. Methylmercury Exposure and Health Effects in Humans: a worldwide concern. *Ambio*, in press; Wiener J.G., Krabbenhoft D.P., Heinz G.H., Scheuhammer A.M., 2003. Ecotoxicology of Mercury. In: Hoffman D.J., Rattner B.A., Burton G.A. Jr, Cairns J. Jr, Eds, Handbook of Ecotoxicology, 2nd ed. Boca Raton (FL): CRC Press, P. 409-463. Scheuhammer, A.M., Meyer, M.W., Sandheinrich, M.B., and Murray, M.W. 2007. Effects of Environmental Methylmercury on the Health of Wild Birds, Mammals, and Fish, *Ambio*, in press; National Wildlife Federation, Poisoning Our Wildlife, 2006, available at <http://www.nwf.org/nwfwebadmin/binaryVault/PoisoningWildlifeMercuryPollution1.pdf>
- ⁶ See for example Jacobson JL, Jacobson SW. 1996. Intellectual impairment in children exposed to polychlorinated biphenyls in utero. *New England Journal of Medicine*. 335:783-789; Schettler T, Solomon, G, Valenti, M, Huddle, A, Generations at Risk: Reproductive Health and the Environment. Cambridge, MA: MIT Press, 1999, 417 pp.
- ⁷ See for example Bertazzi, P.A., Consonni, D., Bachetti, S., Rubagotti, M., Bacarelli, A., Zocchetti, C., Pesatori, A.C. 2001. Health effects of dioxin exposure: A 20-year mortality study. *American Journal of Epidemiology*. 2001; 153:1031-1044.
- ⁸ See for example Hites, R. A. 2004. Polybrominated Diphenyl Ethers in the Environment and in People: a Meta-Analysis of Concentrations. *Environmental Science & Technology* 38:945-956.
- ⁹ Geiser, K., Materials Matter: Toward a Sustainable Materials Policy, Cambridge, MA: MIT Press, 2001, 479 pp.
- ¹⁰ Great Lakes Water Quality Agreement, Article I, available at <http://www.ijc.org/php/publications/pdf/1d609.pdf>
- ¹¹ Canada-U.S. Strategy for the Virtual Elimination of Persistent Toxic Substances in the Great Lakes Basin, April 1997, See <http://www.binational.net>
- ¹² Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes, December 2005, available at <http://www.gllrc.us>
- ¹³ Pollution Prevention Act of 1990 (As Amended Through P.L. 107-377, December 31, 2002).
- ¹⁴ National Pollution Prevention Roundtable, An Ounce of Pollution Prevention is Worth Over 167 Billion* Pounds of Cure: A Decade of Pollution Prevention Results, 1990-2000, January 2003, available at http://www.p2.org/p2results/2418_historyfinal.pdf
- ¹⁵ Pollution Prevention Act of 1990, *Op. Cit.*
- ¹⁶ Geiser, 2001, *Op. Cit.* Also see Li, L., Geiser, K., 2005, Environmentally Responsible Public Procurement (ERPP) and Its Implications for Integrated Product Policy (IPP), *Journal of Cleaner Production*, 13:705-715.
- ¹⁷ EnergyStar, information available at <http://www.energystar.gov/>
- ¹⁸ Green Seal, information available at <http://www.greenseal.org/>
- ¹⁹ Emergency Planning and Community Right-to-Know Act of 1986, available at http://www.access.gpo.gov/uscode/title42/chapter116_.html
- ²⁰ U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, information available at <http://www.osha.gov/SLTC/hazardcommunications/index.html>
- ²¹ U.S. EPA, Final Guidance on Environmentally Preferable Purchasing, available at <http://www.epa.gov/epp/pubs/guidance/finalepapguidance.pdf>
- ²² See for example Environmental Council of the States (ECOS) and National Wildlife Federation (NWF), 2005 Compendium of States' Mercury Activities, October 2005, available at http://www.ecos.org/section/2005_mercury_compendium
- ²³ Dell Recycling, available at http://www.dell.com/content/topics/segtopic.aspx/dell_recycling?c=us&cs=19&l=en&s=dhs
- ²⁴ See Washington Recycles: Electronics Web site, <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/>
- ²⁵ Murray, M. and Holmes, S.A., 2004, Assessment of mercury emissions inventories for the Great Lakes states, *Environmental Research*, 95:282-297.
- ²⁶ Governing Magazine 2007 Media Kit, available at <http://www.governing.com/mediakit/mediakit07.pdf>
- ²⁷ This applies to purchases of a given product of over \$10,000 annually. See U.S. EPA, 2004 Comprehensive Procurement Guidelines, Buy-Recycled Series, Fact Sheet, EPA-530-F-04-015, available at <http://www.epa.gov/epaoswer/non-hw/procure/pdf/paper.pdf>
- ²⁸ U.S. EPA, Comprehensive Procurement Guidelines, Products, available at <http://www.epa.gov/epaoswer/non-hw/procure/products.htm>
- ²⁹ Governing Magazine 2007 Media Kit, available at <http://www.governing.com/mediakit/mediakit07.pdf>

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- ³⁰ Information on purchasing contracts is drawn from unpublished INFORM, Chemical Hazards Prevention Program research.
- ³¹ As noted previously, surveys were not completed by purchasing staff in Minnesota and Wisconsin; other means were used to obtain information for these states, as discussed in Section III. And Appendix I. In discussions that follow, and unless otherwise noted, "responses" or "reported" is meant generically to reference information obtained concerning state programs. Contact information for states surveyed is in Appendix IV.
- ³² Note that in some cases, the survey responses received did not reflect all of the programs the authors know to be active in supporting environmentally preferable purchasing on the state level. For example, it is known that New York State consults with the Environmental Services Group of the Office of General Services before seeking bids on contracts with environmental components.
- ³³ Minnesota Statutes, 115D.02. Also see Appendix II.
- ³⁴ Minnesota Executive Order 99-4 (1999); see Appendix II.
- ³⁵ U.S. EPA, National Partnership for Environmental Priorities (NPEP) program, available at <http://www.epa.gov/epaoswer/hazwaste/minimize/partnership.htm>
- ³⁶ In addition to compilation in Appendix II, see other compilations, including ECOS/NWF 2005, *Op. Cit.*, and other references in Appendix II.
- ³⁷ U.S. EPA, Polybrominated Diphenyl Ethers (PBDEs) Project Plan, March 2006, available at <http://www.epa.gov/oppt/pbde/pubs/proj-plan32906a.pdf>
- ³⁸ In the case of Wisconsin, no statute addressing mercury containing thermometers was identified.
- ³⁹ Thermostat Recycling Program. See for example September 28, 2006 press release on January – June 2006 collection figures, available at <http://www.nema.org/gov/ehs/trc/>
- ⁴⁰ See for example Product Stewardship Institute, Thermostat Stewardship Initiative, Background Research Summary Report, Final, available at <http://www.productstewardship.us/>, (under "Mercury Products", and "Thermostat project").
- ⁴¹ Note that in several cases, legislation or executive orders were adopted at the end of 2006, following receipt of the surveys.
- ⁴² Columbus City Code, 329.31 Environmentally Preferable Purchasing, available at <http://ordlink.com/codes/columbus/>
- ⁴³ As noted in Appendix I (and see note 42), the city of Columbus has a policy whereby all fiscal agents are to consider environmental aspects of purchasing decisions.
- ⁴⁴ City of Buffalo, Resolution on Request for PBT-free Purchasing, available at http://www.healthybuilding.net/pdf/municipal_purchasing/Buffalo_PBT_Resolution.pdf



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