



# NORTHEAST Assistance & Pollution Prevention News

## FEATURE ARTICLE

### Celebrating 20 Years of Pollution Prevention



Communities around the U.S. recently celebrated the 40<sup>th</sup> anniversary of Earth Day by reflecting on what has occurred and what challenges lie ahead. There's another anniversary this year that is also worth celebrating – 20 years of pollution prevention action. In 1990, President George H.W. Bush, signed The Federal Pollution Prevention Act (PPA). This law focused industry, government, and public attention on reducing the amount of pollution through cost-effective changes in production, operations, and raw materials use (see Side Bar). Pollution prevention (P2) includes practices that increase efficiency and conservation in the use of energy, materials, water, or other natural resources. On the occasion of the 20<sup>th</sup> Anniversary of the Act, this Newsletter is dedicated to reviewing the Act and the progress that has been made in the Northeast toward achieving its goals.

Many of the P2 “pioneers” in government cut their teeth in the waste programs, particularly hazardous waste. These programs blossomed in the 1980s to prevent future hazardous waste sites. However, they had at least one shortcoming – the regulations allowed a facility to generate an unlimited amount of hazardous waste, provided it was managed properly. Similarly, toxic and hazardous materials could be used in any amounts as process inputs. Other regulatory programs, such as those focused on air emissions and wastewater discharges, strictly limited, through standards and permits, the amounts of pollution released from smokestacks or pipes.

## CONTENTS

### FEATURE ARTICLE

<i>Celebrating 20 Years</i> .....	Page 1
<i>Connecticut</i> .....	Page 6
<i>Maine</i> .....	Page 9
<i>Massachusetts</i> .....	Page 12
<i>New Hampshire</i> .....	Page 16
<i>New Jersey</i> .....	Page 18
<i>New York</i> .....	Page 22
<i>Rhode Island</i> .....	Page 24
<i>Vermont</i> .....	Page 28
<i>The Pollution Prevention Act of 1990</i> .....	Page 4
<i>Northeast Assistance &amp; P2 Roundtable</i> .....	Page 5
<i>MA TURA 20th Anniversary Leaders 1990</i> .....	Page 14

### PROGRAM UPDATES

<i>Connecticut</i> .....	Page 32
<i>Maine</i> .....	Page 33
<i>Massachusetts</i> .....	Page 34
<i>New Hampshire</i> .....	Page 36
<i>New Jersey</i> .....	Page 37
<i>New York</i> .....	Page 37
<i>Rhode Island</i> .....	Page 38
<i>Vermont</i> .....	Page 39
<i>EPA Region 1 – NE</i> .....	Page 39
<i>EPA Region 2</i> .....	Page 40
<i>New Publications &amp; Materials</i> .....	Page 41
<i>Northeast Assistance &amp; P2 Roundtable</i> .....	Page 42
<b>CALENDAR</b> .....	Page 43

### THE NORTHEAST WASTE MANAGEMENT OFFICIALS' ASSOCIATION (NEWMOA)

NEWMOA is a non-profit, non-partisan interstate governmental association. The membership is composed of state environmental agency directors of the pollution prevention, hazardous and solid waste, and waste site cleanup programs in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

NEWMOA's mission is to develop and sustain an effective partnership of states that helps achieve a clean, healthy, and sustainable environment by exploring, developing, promoting, and implementing environmentally sound solutions for:

- Reducing materials use and preventing pollution and waste,
- Properly reusing and recycling discarded materials that have value,
- Safely managing solid and hazardous wastes, and
- Remediating contaminated sites.

The group fulfills this mission by providing a variety of support services that:

- facilitate communication and cooperation among member states, between the states and the U.S. EPA, and between the states and other stakeholders;
- provide research on and evaluation of emerging issues, best practices, and data to help state programs maximize efficiency and effectiveness; and
- facilitate development of regional approaches to solving critical environmental problems.

NEWMOA's Assistance and P2 Program was established in 1989 to enhance the capabilities of the state and local government environmental officials in the Northeast to implement effective multi-media source reduction and assistance programs to promote sustainability and improvement in public health and the environment. The program is called the Northeast Assistance & Pollution Prevention Roundtable (NEA & P2 Roundtable). This program involves the following components:

- NEA & P2 Roundtable meetings and workgroups,
- regional information resource center and online databases,
- source reduction research and publications,
- training events, and
- regional policy coordination and development.

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tgoldberg@newmoa.org, visit [www.newmoa.org/prevention](http://www.newmoa.org/prevention).

Add to this the Emergency Planning and Community Right to Know Act (EPCRA) of the mid-1980s, particularly the Toxics Release Inventory (TRI), and for the first time, manufacturers began publicly reporting on toxics use and releases of waste materials and byproducts to the environment. The impacts of this disclosure were profound. Public scrutiny spurred voluntary industry actions to reduce and even eliminate the use of toxic chemicals. Furthermore, the Montreal Protocol's ban on production of certain ozone-depleting chemicals made product substitution the watchword. Borrowing the source reduction theme of the solid waste programs, and other methods, such as product re-design, process change, and improved housekeeping, became the basis for P2. All these factors helped motivate agencies to make a paradigm shift in their approach to toxic chemicals and hazardous waste.

After the PPA was signed in 1990, there were lively debates about the definition of pollution prevention (it was called "PP" then and became "P2" a few years later) and whether it was a more effective and efficient way to achieve environmental goals than such traditional approaches as treatment, pollution control, incineration, and disposal. Those involved

### NORTHEAST Assistance & Pollution Prevention News

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The NEA & P2 Roundtable would like to thank the following people for writing and producing this newsletter: Karen Angelo, MA TURI; Peter Cooke, ME DEP; Stephanie D'Agostino, NH DES; Rich Enander, RI DEM; Michael DiGiore, NJDEP; John Fischer, MassDEP; Allan Geisendorfer, NYS DEC; Rob Guillemain, EPA Region 1; Gary Gulka, VT DEC; Laura Henne, NJDEP; Paul Lockwood, NH DES; Bill Lowry, NJDEP; Jim McCaughey, NBC; Christopher MacIsaac, MA OTA; Carlos Ramos, EPA Region 2; Rachel Smith, NEWMOA; Kim Trella, CT DEP; Paul Walsh, MassDEP. Terri Goldberg managed production of the newsletter.

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with advancing P2 debated endlessly the relationship between P2 and recycling. There was also a growing awareness that when it comes to pollution, “what comes around goes around” and that much of the nation’s focus on controlling pollutants in one environmental media simply resulted in them being transferred to a different media. This awareness resulted in a growing emphasis on multi-media prevention. Furthermore, there was considerable skepticism about the viability of environmental agencies providing or sponsoring technical assistance services. Those debates are over now with the adoption of the federal definition that source reduction is P2, with the acceptance of the need to address the unintended consequences of cross media pollutant transfers, and with the experience of many successful long-lived government-based or sponsored assistance programs. Over the past 20 years, P2 practitioners have moved from these early debates to focusing on how to advance source reduction in conjunction with complementary strategies, including:

- Environmental Management Systems (EMS) / ISO 14,000
- Environmental Management Accounting / Materials Accounting
- Environmentally Preferable Procurement (EPP)
- Toxics Use Reduction (TUR)
- Lean & Green Manufacturing
- Product Stewardship / Extended Producer Responsibility
- Greening the Supply Chain
- Cleaner Production
- Energy Efficiency & Water Conservation
- Environmental Results Programs
- Design for the Environment
- Green Chemistry /Engineering

Perhaps most importantly now, P2 has become a critical strategy for achieving **sustainability**.



## Northeast Assistance & P2 Roundtable Timeline

### 1989

- **EPA Pollution Prevention Incentives for States grant awarded to NEWMOA**
- **NEWMOA Annual Conference held**

### 1990

- **1st NE Multi-Media P2 (NEMPP) Program meeting held**
- **P2 Clearinghouse initiated**
- **P2 conference for Pulp & Paper industry initiated**
- **Study on mercury in batteries with Tufts University graduate students conducted**
- **NEWMOA Annual Conference held**

### 1991

- **NE States P2 News vol. 1 numbers 1-4 published**
- **Total Cost Assessment: An Overview of Concepts & Methods published**
- **Source Reduction of Toxic Metals in Household Batteries... published**
- **“P2 for Pulp & Paper Industry” Conference held**
- **1st “P2 Instructor Training” Workshop held**
- **1st “Financial Analysis for P2 Projects” Workshop held**
- **NE Multi-media P2 Clearinghouse launched**
- **Workgroup on Toxics Use Reduction / P2 Planning & Data formed**
- **NEWMOA Annual Conference held**

*(continued on page 5)*

## The Pollution Prevention Act of 1990

The PPA identified source reduction as fundamentally different and more desirable than waste management or pollution control. The PPA declared “it to be the national policy of the United States that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner...” ([www.epa.gov/oppt/p2home/pubs/p2policy/act1990.htm](http://www.epa.gov/oppt/p2home/pubs/p2policy/act1990.htm)) The Act directs the U.S. EPA to employ a number of strategies to advance this policy, including

- Developing a standard method of measuring P2
- Establishing a clearinghouse of P2 information
- Issuing P2 grants to states
- Publishing a biennial report to Congress on P2 progress
- Considering the effect of existing and proposed programs and regulations on source reduction
- Coordinating P2 activities of each EPA Office and with other appropriate Federal agencies
- Developing improved methods of coordinating, streamlining, and assuring public access to data collected under Federal environmental statutes
- Identifying measurable P2 goals, the tasks necessary to achieve them, and how to measure progress in meeting them
- Establishing a P2 advisory panel
- Establishing a P2 training program for state and federal permitting, enforcement, and inspection officials
- Making recommendations to Congress to eliminate barriers to source reduction
- Identifying opportunities to use Federal procurement to encourage source reduction

- Developing, testing, and disseminating P2 auditing procedures
- Establishing an annual awards program

Many of the strategies outlined in the PPA are as relevant today as they were in 1990. EPA and state agencies have implemented a number of these successfully. For example, EPA has provided grants to state and local programs to help pilot innovative P2 strategies and programs. These grants have provided critical support for many of the activities described throughout this Newsletter. EPA and state programs have also developed successful nationally coordinated regional information clearinghouses through the Pollution Prevention Resource Exchange (P2Rx) network, which the Agency has supported for more than 10 years. While EPA and its state partners have made great progress implementing many other aspects of the PPA, there are still many challenges, including:

- Adequately funding the state and local P2 grants program
- Developing standard approaches to measuring the impacts of P2
- Implementing efforts by EPA and states programs to consider P2 in the development and operation of their regulatory programs
- Keeping the P2 clearinghouses up-to-date and able to take advantage of constantly changing information technologies
- Setting quantitative P2 goals and implementing programs toward achieving those goals

The work outlined in the PPA is unfinished. EPA and state and local programs will need to expand their P2 efforts over the next 20 years to address sustainability. There is now a debate underway among some environmental policy makers about updating and modernizing the PPA.

### *(continued from page 3)*

In addition to the Federal PPA, most of the states in the Northeast passed P2 planning and other laws, starting in 1989. Some of the requirements in these state laws mirrored those in the federal statute, but many of them went beyond the PPA. Initially, the states focused on reducing hazardous waste and TRI

chemicals, emphasizing P2 planning at manufacturing facilities to help them understand the benefits of P2. These state laws have helped bring about significant reductions in hazardous waste generation and toxics use.

Changes and trends in P2 over the past 20 years are reflected in the articles in this Newsletter. To compile

the material for this issue, NEWMOA asked its member programs and EPA Regions 1 and 2 to address the following questions:

- What have been the priorities and focus of your program since 1990?
- What are the 2-3 most significant accomplishments of your program? Please provide quantitative results of your program's activities, if that information is available.
- How has the program been a driver for innovation and change?
- What have been the most significant challenges that your program has faced?

Each of the following sections provides the answers to at least some these questions. A few of the programs were able to provide quantitative results, but others do not have the authority or the ability to collect a consistent data set over time. NEWMOA also asked some of the early "P2 Pioneers" that are still working in the field to look back and provide their thoughts and reflections on what has been accomplished. Their contributions are highlighted throughout the Newsletter.

None of the accomplishments covered in this Newsletter would have been possible without the dedication and resourcefulness of the government P2 programs' managers and staffs, and EPA and state funding have been critical. Many of the projects described below were implemented by a small handful of people and were successful because of their ability to leverage available and limited resources and establish effective partnerships wide range of business and university-based groups. NEWMOA applauds their achievements.

### **Northeast Assistance & P2 Roundtable**

NEWMOA started a regional roundtable to support state P2 programs in 1989 when it received a three-year EPA Pollution Prevention Incentives for States (PPIS) grant. That was the first year that EPA offered these grants. NEWMOA called this initiative the



### **Northeast Assistance & P2 Roundtable Timeline**

#### *1992*

- **NE States P2 News vol. 2 numbers 1-4 published**
- **Consumer Dry Cell Battery Recycling report published**
- **Lead, Cadmium, & Mercury in Hospital Solid Waste... published**
- **Measuring State P2 Program Effectiveness... published**
- **3-year strategic plan for NEMPP developed**
- **"P2 Instructor" workshops held**
- **"Industrial Pretreatment P2 Seminars" held**
- **Name changed to NE States P2 Roundtable (NE Roundtable)**
- **NEWMOA Annual Conference held**

#### *1993*

- **NE States P2 News vol. 3 numbers 1-4 published**
- **A Practical Guide to P2 in the Northeast published**
- **Sources of Hazardous Waste Shipped for Incineration, Landfill, or Stabilization...in NH published**
- **Source Reduction of Toxic Metals in Household Batteries...Updated Report published**
- **NE P2 Roundtable Training Handbook published**
- **P2 Measurement at Facilities... published**
- **P2 Consortium of NE Universities initiated**
- **P2 Clearinghouse Committee formed**
- **Pit Stops Project developed**
- **NEWMOA Annual Conference held**

“Northeast Multi-Media Pollution Prevention” (NEMPP) Program and it involved:

- Establishing an information clearinghouse
- Conducting workshops and training sessions
- Researching the major sources of toxic metals in solid waste and effective methods for eliminating those sources

These activities continue to remain at the core of NEWMOA’s P2 program, now called the “Northeast Assistance and P2 Roundtable”. The Association’s efforts to address toxic metals in waste have focused on mercury and lead, and some of this work is described below.

As part of its information sharing efforts, NEWMOA started publishing some form of this Newsletter in 1991. Originally called *Northeast States Pollution Prevention News*, it was published four times a year. Over the years, the Association has transitioned to publishing it two times a year and changed its name and format. The Newsletter is now largely disseminated via email. All of the Newsletters are now available at [www.newmoa.org/prevention/newsletter.cfm](http://www.newmoa.org/prevention/newsletter.cfm). They provide detailed descriptions of many of the activities described here, and readers are urged to take advantage of this online archive to learn more about what has occurred since 1990.

NEWMOA staff took advantage of this wealth of material and others to produce a 20-year timeline for the Northeast Assistance and P2 Roundtable, which runs throughout the following pages. None of the publications, events, workgroups, and other activities highlighted in the timeline would have been possible without the commitment and involvement of NEWMOA’s members and funding from EPA and the states. The Association greatly appreciates this support.

As lengthy and detailed as this Newsletter is, it does not tell the full story. The actual P2 changes took place in businesses, institutions, facilities, schools, government agencies, and communities. Each of their stories is compelling and demonstrates interesting lessons about overcoming obstacles to creating new

environmentally safer ways of making things and providing services. NEWMOA hopes these stories will be told during this anniversary year and congratulates the people involved on their accomplishments.

In the fall of 2010, NEWMOA plans to focus the next issue of this Newsletter on future directions and strategies for P2 over the next 20 years. Stay tuned...

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**“Pollution prevention remains the most thoughtful and efficient way to help the environment. As long as we are thoughtful, it happens.”**

*Kim Trella, Connecticut Department of Environmental Protection*

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### **Setting Goals & Innovating in Connecticut**

*By Kim Trella, Connecticut Department of Environmental Protection (CT DEP), Office of Pollution Prevention*

The Connecticut Department of Environmental Protection (CT DEP) Pollution Prevention Program has been involved in a number of initiatives to advance P2 as a strategy for addressing critical environmental problems facing the State for the past 20 years. These include:

- Small business outreach and education
- Mercury reduction
- Climate change and energy efficiency
- Community involvement and empowerment
- Environmentally preferable purchasing
- Partnerships and assistance with the health care sector
- Certification program for the hospitality sector
- Green building
- Organic land care management
- Others

In all of these initiatives, the Program has developed effective partnerships to leverage available resources and build relationships that have been necessary to their success. For this article, the Program has selected one of these initiatives – the mercury reduction strategy – to demonstrate the power of setting goals, developing innovative strategies, and collaborating on program implementation.

### Hot P2 Topics in the Northeast: 1990-1994

**Pulp & paper, metal finishing, electroplating, Pits Stops Project (i.e., vehicle service shops), metal painting, metal working, printers, heavy metals in solid waste, hazardous waste capacity assurance, hazardous waste minimization, toxics use reduction, waste paint, solvents, degreasing, financial analysis of P2, multi-media inspections, train-the-trainer, local government, P2 interns, facility-wide permitting, 33/50 Program, clean state initiatives, TRI, chlorofluorocarbons (CFCs), sewage treatment plants, design for the environment**

#### *Mercury Action Plan*

In June 1997, the Northeastern Governors and Eastern Canadian Premiers (NEG/ECP) asked its Environment Committee to “continue to advance the understanding of mercury in this region, support cooperative action to address mercury releases and resulting public health and environmental impact, and develop a regional Mercury Action Plan (Plan).” The resulting Plan identified ways to address mercury issues that are within the control of the region. The Plan’s strategy was designed to achieve the goal of virtual elimination of anthropogenic mercury by reducing its use, emissions, and discharges.



### Northeast Assistance & P2 Roundtable Timeline

#### 1994

- .... **NE States P2 News vol. 4 numbers 1-4 published**
- .... **P2 Successes: A Compendium of Case Studies... published**
- .... **Directory of NE States P2 Roundtable published**
- .... **Guide to State P2 Technical Assistance Programs... published**
- .... **Pit Stops Project implemented**
- .... **“P2 Consortium of NE Universities 1993-1994 Directory” published**
- .... **“Building TRI & P2 Partnerships” Conference held**
- .... **NEWMOA Annual Conference held**

#### 1995

- .... **NE States P2 News vol. 5 numbers 1-4 published**
- .... **Financing P2 Investments: A Guide for... Businesses published**
- .... **Improving Your Competitive Position: Instructor’s Guide published**
- .... **Solid Waste Volume Source Reduction Programs... published**
- .... **“Building TRI & P2 Partnerships” Conference Proceedings published**
- .... **NE States P2 Roundtable Steering Committee formed**
- .... **P2 Information Committee formed**
- .... **“Supplemental Environmental Projects” Workshop held**
- .... **“Skillful Change Agent” Workshops held**
- .... **“P2 for Metal Finishing” Workshop held**
- .... **“P2 in Permitting” Workshop held**
- .... **“State Outreach to Auto Repair Shops” Workshop held**

*(continued on page 9)*

Under the framework of the Mercury Action Plan, efforts were undertaken by the Connecticut DEP to reduce the mercury available in the environment, to educate the public, and to monitor progress. These efforts included:

- Mercury reduction and education legislation
- Fish consumption advisories
- Fish tissue testing
- Outreach to public health practitioners and schools
- Stack testing
- Ambient air monitoring
- Regulation of power plants and municipal waste combustors
- Reduction of emissions from medical waste and sewage sludge incinerators
- Sewage sludge and wastewater discharges testing
- Refinements to the mercury air emissions inventory
- Improvements to the water quality standard and criteria
- Participation in the national Quicksilver Caucus

Some of these initiatives are described below.

Connecticut adopted comprehensive mercury product legislation in 2002. Some of the requirements of this law are described below. CT DEP's P2 Program has provided support for implementation of these requirements and has coordinated with other state agencies through the Interstate Mercury Education and Reduction Clearinghouse (IMERC), a program that is managed by NEWMOA.

**Product labeling:** Connecticut requires that a mercury-added product and its package (or care and use manual) be labeled with certain specific information.

**Dental best management practices:** Connecticut was one of the first states to require the installation of amalgam separators at dental offices. The CT DEP P2

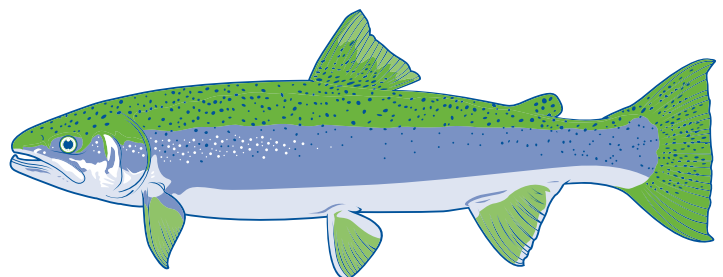
Office created a guide, *The Environmentally Responsible Dental Office*, through a partnership with the Connecticut Dental Association. The Agency also worked cooperatively with the Association to promote installation of mercury amalgam separators in hundreds of dental offices.

**Collection plans:** Connecticut requires manufacturers of mercury-added products to submit plans for the collection of their products. The State was one of the first to require these manufacturers to accept responsibility for their proper end-of-life management.

**Ban on mercury products:** Connecticut banned the sale of mercury thermometers, mercury-added novelties, and mercury manometers. Through an exchange program, residents turned in more than 80,000 thermometers. The mercury content of all products sold in the State was reduced to certain specified levels.

**Phase-out of mercury-added products:** CT has reduced and often eliminated the presence of mercury in certain products, such as switches, relays, flame sensors, and measuring devices.

**Fish consumption advisories:** CT recognized that a critical public health issue is the consumption of fish with elevated levels of mercury. CT DEP has tested the levels of mercury in freshwater fish for the past 15 years. As a result of this monitoring, the DEP and CT Department of Public Health (CT DPH) have issued statewide fish consumption advisories starting in 1996.



**Outreach to health care providers:** The CT DPH and CT DEP P2 Program mailed information packets on health risks associated with mercury to 9,000 health



care providers. The information packet, some of which is in Spanish, is for health professionals and patients that may have exposure to mercury. The material is designed to raise awareness about mercury and its effects, especially on developing fetuses. It includes information for health care providers on how they can avoid mercury spills and occupational exposure by using safe and accurate non-mercury alternatives for thermometers and blood pressure measurement.

**Outreach to schools:** During the fall of 2003, the CT DEP P2 Program mailed mercury-related information to over 1,400 schools. The Program also created a poster about the effects of mercury in the environment, which it distributed widely. Finally, an exhibit with similar information was made available for use at fairs and other events.

**Mercury fund:** In order to support the statewide outreach and collection efforts for mercury, the CT DEP established a fund comprised of fees paid as part of enforcement actions. This fund supported the collection of mercury from schools, dentists, and auto recyclers (switches), as well as a thermometer exchange program.

As a result of the efforts of the DEP P2 Program and others to help implement the programs described above, CT has experienced significant reductions in atmospheric emissions of mercury and releases of mercury from products.

### Reducing Toxics Use in Maine

*By Peter Cooke, Maine Department of Environmental Protection (ME DEP), Office of Innovation & Assistance*

The Maine Department of Environmental Protection (ME DEP) Office of Innovation & Assistance (OIA) has undertaken a number of successful initiatives in the past 20 years, including:

- Toxics Use Reduction Planning
- Clean Government Initiative
- Governors' Carbon Challenge



### Northeast Assistance & P2 Roundtable Timeline

(1995 continued)

- **“Changing the Course of Production: A Student-Faculty Conference on P2...” held**
- **NEWMOA Annual Conference held**
- **Pilot project to evaluate P2 effectiveness started**
- **NEWMOA Website launched**

1996

- **NE States P2 News vol. 6 numbers 1-4 published**
- **Guide to Energy & Environmental Assistance Programs... published**
- **Survey on Integration of P2 into State Regulatory Agencies published**
- **P2 & Profitability, A Primer for Lenders published**
- **A P2 & Lending Case: National Chromium Company... published**
- **Motivating P2 Concepts... published**
- **A P2 & Lending Case: Hubbardton Forge... published**
- **P2 & Lending Report published**
- **“Reinventing Environmental Protection, A Student – Faculty Conference ...” held**
- **“Regional Summit & Workshop” held**
- **“Accessing P2 Information on the Internet” Workshop held**
- **“P2 for Permit Writers” Workshop held**
- **“P2 for Paper & Soft Plastic Surface Coating Operations” Workshop held**
- **“Managing Teams & Facilitating Group Problem Solving” Workshop held**
- **NEWMOA Annual Conference held**
- **Regional study on mercury started**
- **P2 for Air Permitting Project initiated**
- **P2 in Permitting Workgroup formed**
- **P2 Print Project started**

(continued on page 11)

- Innovative Environmental Results Program (ERP)
- Green Certification/Environmental Leadership

These programs and some of their results are described below.

### **Toxics Use Reduction Planning**

The Toxics Use Reduction (TUR) Program was first started in 1989 as a result of a toxics and hazardous waste reduction planning law. It has been successful in helping to achieve significant P2 improvements as follows:

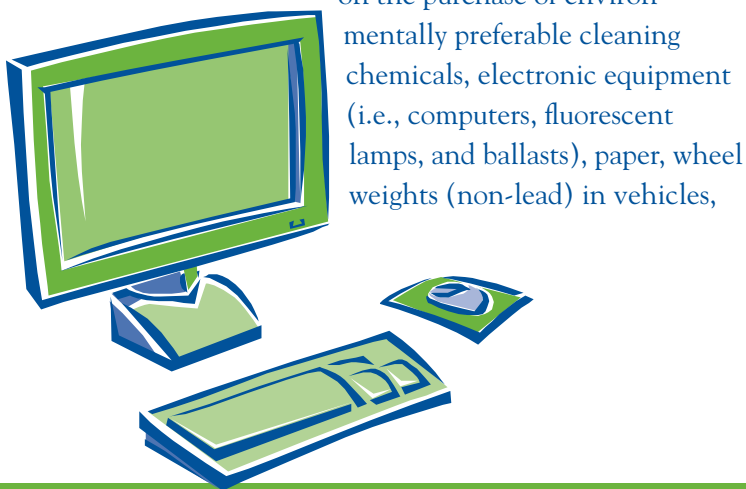
- 16 percent reduction of toxics used from the base year of 1990 (more than 47 million pounds)
- 49 percent reduction of toxic releases from 1990/1991 (average) base year (more than 9.7 million pounds)
- 43 percent reduction of hazardous waste from 1987/1989 (average) base year (more than 4.8 million pounds)

A new state toxics law will repeal the existing Toxics Use Reduction Act (TURA) in 2012 and will shift the focus to reducing the use of priority toxic chemicals. A collaborative stakeholder process representing industry, labor, environmental, and public health, and government helped to facilitate this change.

### **Clean Government**

For the past ten years, the OIA has been facilitating and coordinating organizational and logistical efforts of the environmentally preferable procurement (EPP) strategies of Maine's legislatively-mandated Clean Government Initiative (CGI). The initiative focuses

on the purchase of environmentally preferable cleaning chemicals, electronic equipment (i.e., computers, fluorescent lamps, and ballasts), paper, wheel weights (non-lead) in vehicles,



and uniforms. The “green” uniforms are those that do not need to be dry cleaned, thereby reducing the use of perchloroethylene.

The Office has been able to document significant P2 changes as a result of this program. On an annual basis, 4,536 pounds of total product have been reduced through purchases of Green Seal-certified cleaning chemicals, 896 pounds of which are considered hazardous. Stronger chemicals, such as disinfectants, are also being reduced due to a standard operating procedure detailing what gets disinfected. Other program results include:

- 916,935 kilowatt hours (kWh) reduced by purchasing Electronic Product Environmental Assessment Tool (EPEAT)-certified electronic equipment and computers, which is enough electricity to power 77 U.S. households for a year
- 171 metric tons of CO<sub>2</sub> equivalent greenhouse gases (GHGs) reduced
- 238 pounds of toxic materials, including lead and mercury, reduced
- 10,375 pounds of hazardous waste reduced from end-of-life management

Finally, 93 percent of the paper and paper products purchased has at least 30 percent post consumer content. Maine was awarded the EPA Merit Award (Silver Level) in 2009 and 2010 for electronics purchasing and disposal, coordinated under the Clean Government Initiative.

### **Carbon Challenge**

The OIA began providing technical assistance to participants in the Governor's Carbon Challenge (GCC) in 2005. This Challenge was established under Maine's Climate Change law, which directs the ME DEP to develop agreements with businesses and non-profit organizations to help achieve the State's GHG reduction goals. The OIA has been assisting with developing baseline data, conducting energy audits, and providing follow-up assistance with emissions calculations. For the 134 facilities reporting from the

69 signed participants, 130,495 metric tons of CO<sub>2</sub> has been reduced, which is a 17 percent reduction from their baselines.

**Environmental Results Program**

The Environmental Results Program (ERP) in Maine, which started in 2005, has focused on auto body facilities. The OIA developed a multi-media, plain language workbook and checklist and sent it to the facilities. The workbook covers hazardous waste, universal waste, used oil, air quality, and water pollution requirements. It provides best management and P2 measures that encourage cleaner, safer, and more efficient ways to reduce costs. Overall program results have been:

- Technical assistance on-site visits: 118
- Completed self certifications: 42
- Changes made at each facility: 3-5 (on average)
- Percent increase in compliance for entire universe: 10 percent
- Number of unlicensed solvent distillation units that now have licenses: 8

**Green Certifications**

The OIA launched Maine’s “green” certification program for the lodging and hospitality sector in 2006, followed by similar programs for restaurants and grocery stores. For the 110 participating businesses, some of the total estimated yearly results are:

18,901,388	gallons of water saved
11,925,734	kilowatts reduced through energy efficiency initiatives
107,439	kilowatts reduced per business on average
\$1,197,968	saved in electricity reductions
\$10,793	saved per business on average in electricity reductions



**Northeast Assistance & P2 Roundtable Timeline**

**1997**

- **NE States P2 News vol. 7 numbers 1-4 published**
- **P2 for the Metal Finishing Industry... published**
- **Guide to Accessing P2 Information Electronically published**
- **Wood Furniture... P2 Opportunities published**
- **High Solid Topcoats & HVLP Spray Guns... Case Study published**
- **Ultraviolet Radiation Cured Coatings & Aqueous-Based Coatings published**
- **Achieving P2 in Printed Wire Board Manufacturing published**
- **“Regional Surface Cleaning Workshop” held**
- **NEWMOA Annual Conference held**
- **Roundtable on P2 for printed wire board manufacturers held**
- **Database of P2 training activities initiated**
- **P2 Week Workgroup formed**
- **P2 Week Proclamation signed**

**1998**

- **“Consumer P2 Efforts” Feature Article in NE A&P2 News vol. 8 published**
- **NE States & Eastern Canadian Provinces Mercury Study... published**
- **P2 in Metal Painting & Coating Operations... published**
- **Recommendations for a National P2 Information Network published**
- **P2 Progress in the NE States published**
- **Improving Your Competitive Position... Training Manual, 3rd Edition published**
- **P2 for Auto Body Shops published**

(continued on page 13)

17,279,174	pounds of CO <sub>2</sub> reduced
1,159,270	pounds of solid waste reduced by composting food waste
1,541,322	pounds of solid waste reduced through recycling

In addition, 38 of the certified lodging facilities have eliminated over 321,000 bottles per year by installing refillable amenity dispensers, thereby eliminating 19,263 pounds of plastic waste. Finally, 79 businesses have switched to using environmentally preferable cleaning products, resulting in the annual reduction of over 5,855 pounds of cleaning chemicals that are considered toxic or hazardous.

**“Pollution prevention is now a well understood concept by the business community, and the adversarial relationship between regulators and business over P2’s implementation has mostly disappeared. Everyone wants to be perceived as “green”; everyone wants to save money; and P2 has proven that it can help accomplish both goals.”**

*Ann Pistell, Maine Department of Environmental Protection*

All of these innovative P2 initiatives have enabled the OIA to provide leadership within the State by implementing cost effective strategies to address critical environmental problems. In recent years, the Office has focused considerable attention on quantitatively documenting the impact of these programs to demonstrate their value and effectiveness.

## **Achieving Toxics Use Reduction in Massachusetts**

*By staff from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Office of Technical Assistance (MA OTA), and Massachusetts Toxics Use Reduction Institute (MA TURI)*

The Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Office of Technical Assistance (MA OTA), and Massachusetts Toxics Use Reduction Institute (TURI) have led the efforts in the State to advance P2. These programs have collaborated for 20 years on the implementation of the Toxics Use Reduction Act (TURA). They have also been involved with many other innovative P2 strategies, and the mercury reduction and Environmental Results Program (ERP) initiatives described below are just two examples.

### *Toxics Use & Hazardous Waste Reduction*

Enacted in 1989, TURA has led Massachusetts businesses to dramatically reduce their reliance on toxic chemicals, helping them address workplace hazards, chemical transportation risks, and toxics in products and waste, all while saving money. TURA’s goal is safer and cleaner production and services that enhance the economic viability of companies and advance healthier communities and workplaces.

TURA took an innovative approach by requiring companies to understand and report their toxic chemical use and evaluate reduction options in light of technological and financial considerations. It was a winning strategy, and by 2005 participating Massachusetts companies had voluntarily reduced toxics use by 41 percent, waste by 71 percent, and on-site releases by 91 percent as shown in the Table below.



**Northeast Assistance & P2 Roundtable Timeline**

<b>Massachusetts TURA Achievements</b>	
<b>1990-2005</b> (normalized for a 9% increase in production)	<b>2000-2007</b> (normalized for a 19% decrease in production)
<b>Reduced:</b>	<b>Reduced:</b>
Toxic chemical use by 40%	Toxic chemical use by 14%
Toxics byproducts by 71%	Toxic byproducts by 34%
Toxics shipped in product by 41%	Toxics shipped as product by 14%
On-site releases by 91%	On-site releases by 44%
Transfers of toxics off-site by 60%	Transfers of toxics off-site by 39%
Reductions reflect reported data (excluding trade secret data) normalized for changes in production and using a consistent set of industries and chemicals subject to reporting over reporting years.	

With the 2006 updates to the TURA law, companies began expanding their accomplishments to conserving energy, materials, and water, and reducing non-reportable chemicals. Companies also began to implement Environmental Management Systems (EMS) that integrate TUR planning. As a result, Massachusetts businesses are now using less toxic materials, employing more efficient production processes, and conserving energy, water, and other resources as shown in the Table on page 14.

**“We’re a small company and don’t have a lot of resources to do this work. The Office of Technical Assistance has helped us find safer chemicals and change some of our processes as well as stay ahead of the regulatory and penalizing agencies. Without a doubt, these activities have played a major role in keeping us in business.”**

*Duncan Leith, owner and president of L & J of New England*

(1998 continued)

- .... **“Waste Oil Regulations: A Quick Guide...” published**
- .... **“A Checklist for Auto Repair Shops” published**
- .... **“P2 in Enforcement” Workshop held**
- .... **“P2 in Policy & Rules Development” Workshop held**
- .... **NEWMOA Annual Conference held**
- .... **P2 Week Resolution signed**
- .... **P2 Resource Exchange (P2Rx) Center started**

**1999**

- .... **“EMS Projects” Feature Article in NE A&P2 News vol. 9 published**
- .... **“P2 Successes” Feature Article in NE A&P2 News vol. 9 published**
- .... **Pressure Sensitive Tapes & Labels... P2 Opportunities published**
- .... **The Finishing Line... Low Compliant Coatings for Auto Body published**
- .... **... Assessment of Three OECA Compliance Assistance Centers published**
- .... **P2 for Auto Body & Auto Repair Vocational Programs published**
- .... **P2 Integration... Curriculum published**
- .... **P2 in Permitting Program published & workshop held**
- .... **Science of Preventing Pollution curriculum published**
- .... **Draft model mercury reduction legislation released & public meetings held**
- .... **P2 Metrics Menu developed**
- .... **Memorandum of Agreement to implement the P2 Metrics Menu signed**
- .... **“EMS Workshop” held**
- .... **NEWMOA Annual Conference held**
- .... **“RCRA Compliance for Metal Finishing Facilities: A Slide Show” distributed**

(continued on page 15)

2008 Resource Conservation Plan Commitments		
Resource Targeted	Estimated Use (annual)	Planned Reductions (annual)
14 Energy Plans	260 million KW/yr	42 million KW/yr
8 Water Plans	370 million gals/yr	38 million gals/yr
3 Materials Plans	2.3 million lbs/yr	0.3 million lbs/year
7 Non-reportable Chemicals	45,000 lbs/yr	11,000 lbs/yr

To celebrate the TURA Program’s 20<sup>th</sup> Anniversary, the program partners sponsored a symposium in November 2009 that attracted more than 200 attendees. Funded in part by the Centers for Disease Control and Prevention, the symposium featured speakers that participated in the negotiations of the law. It was a day of looking back as well as forward, with more than a dozen sessions on science, P2, policy, and community and environmental health.

**“Because of the TURA framework, we are in a better position to meet customers’ needs for green products. Our TURA plan wasn’t something we wrote, put on a shelf, and updated in two years. This work is embedded into our management system and measured.”**

*Beth Tshudy, Environmental, Health and Safety Manager at Analog Devices in Wilmington*

**Mercury Reduction**

In 2004, the MassDEP and the Massachusetts Dental Society began promoting the installation of mercury amalgam separators in dental offices. Then, in 2006, MassDEP adopted regulations requiring their use. Over this period, the mercury level in wastewater sludge at the Massachusetts Water Resources Authority (MWRA) treatment plant on Deer Island in Boston Harbor was cut nearly in half, and is down by as much as 75 percent from a decade ago.

**MA TURA 20<sup>th</sup> Anniversary Leaders 1990**


State environmental agencies and dignitaries visited leading Massachusetts companies during March and April of 2010 to highlight and honor each for their performance. During these visits, a “TURA 20th Anniversary Leader” commendation was presented by MA TURI, MassDEP, and MA OTA. The companies honored for environmental leadership include:

- Allegro MicroSystems, Inc., Worcester
- Analog Devices, Wilmington
- A.W. Chesterton Company, Groveland
- Cape Cod Cooperative Extension, Barnstable County
- Churchill Coatings, Grafton
- Cobham Defense Electronics Systems, Lowell
- Ferraz Shawmut, Newburyport
- Gentex Optics, Dudley
- L & J of New England, Worcester
- Lightolier, a Philips Group Brand, Fall River
- MD Stetson, Randolph
- Millipore, Bedford
- Moreno Auto Body, Roxbury & the Boston Public Health Commission
- PerkinElmer, Salem
- Raytheon Company, Waltham and Andover
- Skyworks Solutions, Woburn
- Vicor Corporation, Andover

To read more about each company’s environmental accomplishments, visit [www.turi.org](http://www.turi.org).

**Pollution Prevention News!**

NEWMOA’s Pollution Prevention Resource Exchange (P2Rx) Center collects and publishes online assistance and P2-related news items. P2News is frequently updated – so check in regularly. [www.newmoa.org/prevention/p2news/](http://www.newmoa.org/prevention/p2news/)



**“Our work with the TURA program was the catalyst for integrating TUR into all of our business operations. Doing what is right for the environment—and therefore right for our company, employees, and the community—is now standard business practice.”**

*Frank Marino, senior manager of corporate environmental, health and safety at Raytheon*

Massachusetts has made significant strides to keep mercury out of the environment in other ways as well. In-state releases to air are down by more than 70 percent since the late 1990s. This reduction is due in large part to regulatory efforts that cut mercury emissions from waste combustion by more than 90 percent (through a regulation that was adopted in 1998) and the total elimination of emissions from medical waste incinerators (due to the closure of these facilities in MA in the late 1990s).

Emissions of mercury in air are declining further, due to MassDEP regulations that took effect in 2004. These regulations required four coal-burning power plants to control mercury emissions by up to 95 percent

by 2012. In the fall of 2006,

MassDEP and the State Department of Education began implementing the new Massachusetts Mercury Management Act, which bans the sale of specific mercury-added measuring devices, switches, and relays; bans disposal of mercury products; and requires schools to stop buying mercury-containing items.



## Northeast Assistance & P2 Roundtable Timeline

(1999 continued)

- .... P2Rx™ “Directory of Environmental Assistance Programs” posted
- .... P2Rx™ “P2 Activities Database” posted
- .... P2Rx™ “P2 Calendar” started
- .... P2 Week Resolution signed

2000

- .... “Partnerships to Promote P2” Feature Article in NE A&P2 News vol. 10 published
- .... “P2 to Reduce Children’s Health Risks” Feature Article in NE A&P2 News vol. 10 published
- .... ... An Environmental Resource for Lithographic Printers CD- ROM published
- .... P2 Week Brochure: Tips for Parents... published
- .... Compendium of... Mercury Reduction Programs published
- .... “Energy Efficiency” Workshop held
- .... “Used Electronics” Workshop held
- .... NEWMOA Annual Conference held
- .... “Coordinating Mercury Reduction Programs” Conference held
- .... NE Governors’ Conf. resolution on mercury product legislation signed
- .... P2 & Assistance Metrics Workgroup formed

2001

- .... “EMS Initiatives” Feature Article in Northeast A&P2 News vol. 11 published
- .... “P2 Week” Feature Article in Northeast States P2 News vol. 11 published
- .... Mercury: A Federal Facilities Assessment published
- .... Getting Mercury out of Schools published

(continued on page 17)

## Hot P2 Topics in the Northeast: 1995-1999

**Metal finishing, Pits Stops Project, auto body shops, printers, metal painting, solvents, toxics use reduction, hazardous waste reduction, P2 Week, integration in regulations and inspections, change agent training, case studies, financial analysis of P2, financing P2, train-the-trainer, multi-media, compliance assistance, EMS, P2 measurement, facility-wide permitting, 33-50 program, mercury, TRI, clean state initiatives**

### *Environmental Results Program*

Over the last 13 years, the Massachusetts Environmental Results Program (ERP) has significantly increased the number of companies operating within the State's regulatory system, and these companies are achieving results that meet or exceed environmental standards. Before ERP, 80 percent of the companies in some small business groups were flying under the MassDEP's radar screen. Today, 98 percent are actively working with the Agency to protect the environment. Taken together, their collective actions are delivering huge environmental benefits. For example, during the 13 years in which the dry cleaner ERP has been in effect perchloroethylene (Perc) use has dropped from 111,836 gallons to 32,899 gallons per year, a 71 percent decrease.

### **Evolving from Hazardous Waste to P2 in New Hampshire**

*By Stephanie D'Agostino & Paul Lockwood, New Hampshire Department of Environmental Services (NH DES) Pollution Prevention Program*

In 1990, the Resource Conservation and Recovery Act (RCRA) hazardous waste program was 10 years old, and states were in the midst of preparing Capacity Assurance Plans (CAP) that described what

they planned to do with waste from manufacturing industries. Since New Hampshire had no hazardous waste disposal capacity, P2 seemed like a great way to help address the State's goals in their Plan. This opportunity provided the genesis of the NH Pollution Prevention Program (NHPPP) in 1991.

Starting from the ground up, the Program faced many obstacles, not the least of which was figuring out how to get businesses to trust the New Hampshire Department of Environmental Services (NH DES) technical assistance staff that was sitting near the enforcement staff. The P2 staff worked hard to win trust through free and confidential visits and useful reports that demonstrated how the client companies could save money. Recognition of good progress on the part of NH businesses started in 1995 with the annual Governor's Pollution Prevention Award.

**“We built this program from the ground up, and have never had more than a handful of staff, but because it has been the most committed and dedicated group of people, we have accomplished much and have earned a great reputation. It has been very rewarding professionally and personally.”**

*Sharon Yergeau, New Hampshire Department of Environmental Services*

As the NH P2 Program (NHPPP) evolved to include multi-media compliance assistance in the mid-1990s, it won over compliance and enforcement colleagues in the Agency and integrated P2 concepts into the media programs. At that time, perhaps the most satisfying accomplishment was the New Hampshire Legislature's 1996 amendment to an existing law that established P2 as the states' premier waste management strategy and added two staff positions to help promote it.



NHPPP has always tried to get the most results for the least dollars. The program found this was best accomplished by entering into partnerships with a variety of associations and organizations to augment funding and capabilities. These partnerships included sector associations, like the Marine Trade Association and NH Hospitals for a Healthy Environment, and the University of New Hampshire (UNH) Chemical Engineering Department. These partnerships have been instrumental in the development of guides, both industry-specific and general, and outreach that demonstrates how limited budgets should not stop companies from being innovative. Since 1994, the award-winning UNH/DES Summer P2 Intern Program has been sending trained, student interns to help businesses implement P2 projects.

**“If I left the agency tomorrow, my proudest achievement would be creating the P2 Internship Program. The Program still exists and has helped instill a P2 ethic in well over 100 future engineers, scientists, and business people. I’m proud of what we’ve been able to accomplish as a small group of individuals that deeply believe in the power of P2. The approach remains as relevant today as it did in the earliest days of the P2 movement.”**

*Vincent Perelli, New Hampshire Department of Environmental Services*

Enlightened NH companies have found that P2 can be the beginning to other major improvements, like Environmental Management Systems and more sustainable ways of doing business. Recently, the State’s economic base has moved toward service sectors, and NHPPP has adapted to this change with new initiatives and programs.



## Northeast Assistance & P2 Roundtable Timeline

*(2001 continued)*

- .... **P2 for Machining & Metal Fabrication... published**
- .... **Closed-Loop Degreasing published**
- .... **P2Rx™ Metal Fabrication & Mercury Reduction Topic Hubs launched**
- .... **P2Rx™ Online “Mercury Reduction Programs Database” launched**
- .... **“PBT” Workshop held**
- .... **“P2 Integration” Workshops held**
- .... **“EMS” Workshop held**
- .... **“Marina Assistance Workshop” held & Workgroup formed**
- .... **NEWMOA Annual Conference held**
- .... **1st mercury reduction bills passed in a few states**
- .... **Interstate Mercury Education & Reduction Clearinghouse (IMERC) — launched**
- .... **P2 Week Resolution signed**
- .... **P2 Innovative Technologies Workgroup formed**
- .... **Email listservs launched**

*2002*

- .... **“P2 for K-12 Schools” Feature Article in NE A&P2 News vol. 12 published**
- .... **“Green Building Design” Feature Article in NE A&P2 News vol. 12 published**
- .... **“... Alternatives to Mercury Products” in NE A&P2 News vol. 12 published**
- .... **8 Good Ideas for Reducing Mercury... in Your Community published**
- .... **Mercury in High Schools... published**
- .... **Save a Watt, Save a Lot \$\$ published**
- .... **“Breaking the Mercury Cycle” Conference held**
- .... **“Getting Toxic Chemicals out of NH Schools” Workshop held**
- .... **IMERC Mercury-added Products Database launched**

*(continued on page 19)*

## Planning for P2 in New Jersey

By Laura Henne, Michael DiGiore, & Bill Lowry, New Jersey Department of Environmental Protection (NJDEP) Office of Pollution Prevention & Community Right to Know

The New Jersey Pollution Prevention Act (P2 Act) was signed into law in 1991. The law encourages NJ's industries to realize the financial benefits of reducing their use and generation of hazardous substances.

The Act established within New Jersey Department of Environmental Protection (NJDEP) programs to advance industrial P2 planning, P2 public reporting, pilot testing facility-wide permitting (FWP), and researching P2 trends as described below.

### *P2 Planning*

The New Jersey P2 Planning Program is one of the first, and still only one of a handful of mandatory programs in the country. The P2 Act requires facilities to develop P2 Plans (Plans) to identify business opportunities in P2; however, it does not mandate that facilities implement any options they find. The theory is that showing the actual costs of polluting will make the benefits of P2 obvious. The Plans remain at the facility, and a Plan Summary is submitted to NJDEP at the beginning of a five-year cycle.

The P2 Act requires covered facilities to investigate P2 opportunities and report information to DEP on the use (throughput) and generation of hazardous substances. Covered facilities are required to report additional information on an annual Release and Pollution Prevention Report (RPPR); more commonly called "materials accounting" data. Materials accounting is based on the simple scientific principal of the conservation of matter where all chemical inputs at a facility should balance with the outputs. Materials accounting data provide a complete picture of the use of hazardous substances.

NJDEP field audits at facilities revealed that most were having trouble calculating their P2 planning progress in the 1990s. As a result, the Agency found it difficult to determine if a facility had achieved their five-year reduction goals. The Program's response was

to establish an option for progress reporting called the P2 Process-Level Data Worksheet (P2-115). The P2-115 provides all the information necessary for the calculations to be done by the DEP.

For the 2000 reporting year, the NJ P2 Planning Program began requiring electronic submission of the RPPR (and later on, the Plan Summary.) This innovation has enabled submission of higher quality data, since many logic checks were built into the system. It also provides much quicker data availability.

### *Multi-media Permits*

The P2 Act directed the NJDEP to undertake a pilot program to issue multi-media permits that combine individual air, water, and hazardous waste permits into a single, holistic document, for a set of volunteer industrial facilities. This effort, called the Facility-Wide Permit (FWP) Program began in 1993 and concluded in 2004. Arguably, the greatest success of the FWP Program was the incorporation of in-depth P2 materials accounting in permits to establish reality-based release limits. This incorporation helped to uncover:

- **Unregulated emissions:** For example, one facility had an air pollution control (APC) permit for a degreasing unit, which included an emission limit of 2,000 pounds per year for trichloroethylene (TCE), a hazardous air pollutant (HAP). The materials accounting data reported by the facility revealed actual TCE releases of 94,000 pounds per year.
- **Multi-media transfers of pollutants:** For example, one facility treated a wide range of volatile organic compound (VOC) emissions through a dual carbon adsorption system. While one carbon bed was being used to treat the air emissions, the other bed was regenerated via steam stripping. The steam was then condensed and sent to a publicly owned treatment works (POTW). The materials accounting data developed by the facility, along with sampling

data showed VOC levels between 25 –100,000 microgram per liter ( $\mu\text{g}/\text{l}$ ) when entering the sewer but less than 2  $\mu\text{g}/\text{l}$  at the POTW. The VOCs were being removed from the air, transferred to water, and released back into the air via an open catch basin.

- **Human health risks:** For example, one facility had an existing air pollution control permit for its polyvinyl chloride (PVC) monomer production that included an annual production limit. During the FWP development, this facility approached the NJDEP about the possibility of removing this limit. The Agency and the facility worked together to conduct a facility-wide assessment for all sources of vinyl chloride monomer (VCM) releases, including fugitive releases. Using the results of the assessment, the Department and the facility came up with the novel approach of including a requirement that allowed increases in annual production only if there was a concomitant reduction in VCM releases. The FWP established baseline production and pounds of emissions per pounds of product (lb/product) levels. If the facility wanted to increase production by 10 percent, they would have to achieve a 10 percent reduction in the baseline lb/product.

A significant challenge for the FWP Program was the result of a key regulatory decision that NJDEP made. The P2 Act gives the NJDEP the authority to issue more stringent limits in a FWP based on the P2 methods included in a facility's P2 Plan. However, in its rules, NJDEP chose not to promulgate this authority. This decision's impact on the design of the New Jersey FWP model was significant. By not being able to issue more stringent limits, the FWPs were restricted to existing regulatory permit standards. As a result, unless an unacceptable risk was uncovered, the only way in which NJDEP was able to issue FWPs with more protective permit limits was if a facility voluntarily agreed.



## Northeast Assistance & P2 Roundtable Timeline

(2002 continued)

- **1<sup>st</sup> P2 & Compliance Assistance Metrics Software released**
- **P2Rx™ “Marina” Topic Hub launched**
- **P2Rx™ “Environmental Management Accounting” Topic Hub launched**
- **P2Rx™ “Rapid P2 Response” service started**
- **EPA Compliance Assistance Advisory Committee (CAAC) participation started**
- **1<sup>st</sup> P2 webinar on environmentally preferable purchasing held**
- **Salvage Yards Workgroup started**

2003

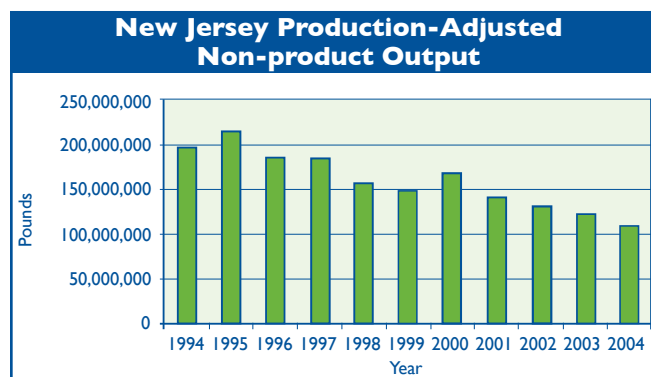
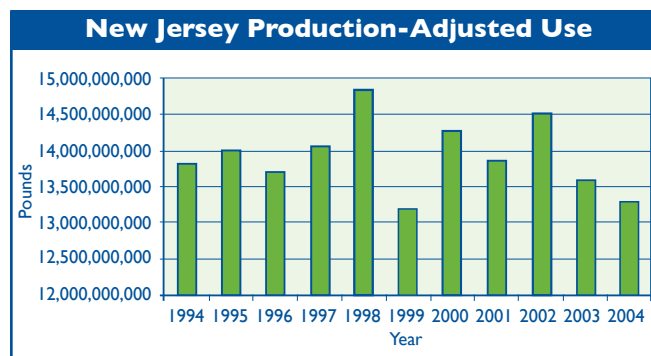
- **“EMS...” Feature Article in NE A&P2 News vol. 13 published**
- **“P2 & Environmental Security” Feature Article in NE A&P2 News vol. 13 published**
- **“Greening the Hospitality Industry” Feature Article in NE A&P2 News vol. 13 published**
- **IMERC Alert published**
- **Trivalent Chromium Replacement for Hexavalent Chromium Plating published**
- **Closed-Loop Aqueous Cleaning published**
- **“Mercury Source Reduction Legislation...” published**
- **P2Rx™ “Regional P2 Virtual Library” posted**
- **Webinars on green building, P2 for ski areas, EMS, & PBTs held**
- **“Greening Government” Conference held**
- **Dioxin-Burn Barrel Workgroup formed**
- **National P2 Results Task Force launched**

(continued on page 21)

**P2 Trends Analysis**

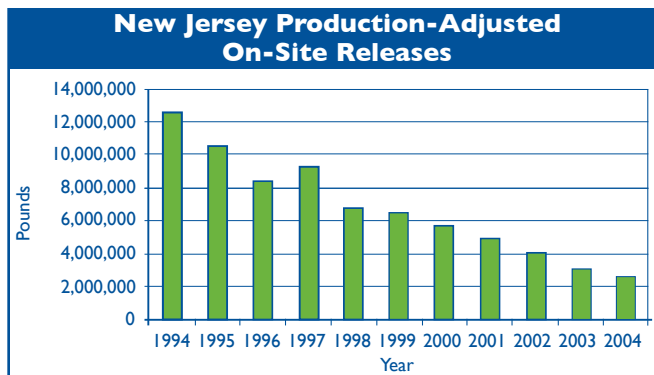
Another part of the P2 Act directed the NJDEP to analyze P2 trends. Starting in 1996, the Department has conducted trends analyses to determine progress towards reducing hazardous substance use and generation as non-product output (NPO). In a 1996 Trends Report, the NJDEP found that facilities decreased NPO by at least 50 percent between 1987 and 1994, which was the statewide policy goal in the P2 Act.

Subsequently, the Department has published two updates (2004 and 2007) to the original Trends Report. As shown in the table and charts on page 20 and 21, the 2007 Report showed that, from 1994-2004 facilities substantially decreased hazardous substances generated as NPO and releases into the environment, even though production levels increased by 25 percent. Adjusted for production, use decreased by 4 percent; NPO decreased by 45 percent; and on-site releases decreased by 80 percent. The Reports are available at: [www.nj.gov/dep/opppc](http://www.nj.gov/dep/opppc). There are plans underway to update the Trends Report using the most current data (2008).



Use, Non-product Output (NPO), & On-site Releases of Toxics 1994 – 2004 (Thousands of Pounds, Rounded)								
Year	Toxics Use		Non-product Output		On-site Releases		Weighted Production Index	
	Use (Adjusted)	Use	NPO (Adjusted)	NPO	On-site Releases (Adjusted)	On-site Releases	Yearly	Cum
1994	13,824,668	13,824,668	196,751	196,751	12,568	12,568	1.00	1.00
1995	13,986,931	14,714,252	214,009	225,138	10,508	11,054	1.05	1.05
1996	13,705,028	15,398,092	185,099	207,965	8,423	9,463	1.07	1.12
1997	14,059,088	15,874,871	184,519	208,351	9,251	10,446	1.01	1.13
1998	14,836,340	18,092,709	156,189	190,471	6,754	8,237	1.08	1.22
1999	13,208,422	15,849,765	147,988	177,582	6,496	7,795	0.98	1.20
2000	14,263,421	16,294,182	167,519	191,369	5,674	6,482	0.95	1.14
2001	13,837,860	15,175,710	141,580	155,268	4,815	5,281	0.96	1.10
2002	14,517,174	15,533,377	131,050	140,224	4,000	4,280	0.97	1.07
2003	13,567,864	15,738,723	122,849	142,505	2,990	3,469	1.08	1.16
2004	13,273,631	16,592,039	109,062	136,328	2,552	3,190	1.08	1.25
Total Change	-551,038	2,767,370	-87,689	-60,423	-10,016	-9,378	25% Increase	
% Change	4% Reduction	20% Increase	45% Reduction	31% Reduction	80% Reduction	75% Reduction		

Adjusted columns present data adjusted for changes in production.



There are a number of challenges with respect to analyzing data reported on the RPPR. Since it is self-reported data, certain data elements on the RPPR report are calculated quantities that lack any verification of the reported value and therefore must be taken at face value. Further difficulties include trying to keep track of the changes in the regulated universe. Facilities come and go, change names and ownership, and shut down production processes, which makes it difficult to analyze trends over time.

The P2 Planning Program now faces the challenge of a prescriptive statute that does not allow for flexibility as the program matures. Numerous facilities have experienced three cycles of P2 planning and have already “picked the low hanging fruit”, which results in many facilities currently setting goals of zero reduction of NPO and use. The Program is exploring possible improvements, including encouraging firms to make GHG reductions for reportable substances and encouraging energy efficiency.

To help businesses implement P2, NJDEP supports a technical assistance program in conjunction with Rutgers University, called the New Jersey Program for Manufacturing Excellence (NJME) that offers energy audits as part of its P2 assistance. The NJDEP P2 program has also been working with sectors not covered under the P2 Act, such as auto repair facilities and dry cleaners, to foster greater adoption of P2.



## Northeast Assistance & P2 Roundtable Timeline

### 2004

- .... **“Buying Green” Feature Article in NE A&P2 News vol. 14 published**
- .... **“Lean & Clean Manufacturing...” Feature Article in NE A&P2 News vol. 14 published**
- .... **IMERC Alert published**
- .... **P2Rx™ “Dioxin” Topic Hub posted**
- .... **P2Rx™ “Lead” Topic Hub posted**
- .... **P2Rx™ “Wood Finishing” Topic Hub posted**
- .... **4 P2Rx™ Mercury Topic Hubs posted**
- .... **“Spray Painting Cars” Workshop held**
- .... **“Improving Websites” Workshop held**
- .... **“Innovations” Regional Summit held**
- .... **Webinars on pharmaceutical waste, green building, cleaners, measurement, environmental justice held**
- .... **P2 Results Data System initiated**
- .... **NEWMOA strategic plan adopted with a focus on P2 & waste management**

### 2005

- .... **“NE States... Address Climate Change” Feature Article in NE A&P2 News vol. 15 published**
- .... **“Addressing... Measurement of... P2” Feature Article in NE A&P2 News vol. 15 published**
- .... **P2Rx™ “P2 News” started**
- .... **“Lamp Recycling” brochures published**
- .... **“Lamp Recycling” displays produced**
- .... **“Achieving Mercury Reductions in Products & Waste...” Conference held**
- .... **“Promoting Environmental Responsibility... Summit” held**
- .... **“High Production Volume Chemicals” Workshop held**

(continued on page 23)

## Promoting Multi-Media P2 in New York

By Allan Geisendorfer, New York State Department of Environmental Conservation (NYS DEC) Pollution Prevention Unit

In 1990, the New York State Department of Environmental Conservation (NYS DEC) established the Pollution Prevention Unit (PPU) to plan, monitor, manage, and coordinate ways to encourage business and industry to prevent pollution. The PPU promotes multi-media P2 awareness and provides compliance assistance to targeted business sectors. In the past 20 years, NY has demonstrated great progress, learned many important lessons, and faced various challenges.

### *Business Assistance*

In the early years of the PPU, there was a dual focus on expanding the understanding of P2 both within NYS DEC and outside the Agency. Much of the focus outside the Agency was on the development of P2 and compliance assistance manuals for sectors, such as printers, metal finishers, pulp and paper, food production, marinas, and electronics. The development of these manuals was usually coupled with workshops across the state and efforts to engage with individual businesses to provide P2 assistance. These efforts also included an annual conference and a Governor's Award for P2.

By the late 1990s, it became evident providing assistance to business from within a regulatory agency presented challenges. Even with successful partnerships with business associations to plan workshops and develop manuals, these efforts did not typically reach as large an audience as hoped. Also, efforts to engage directly with businesses to offer assistance were not effective. The PPU realized that they needed to clarify the relationship between assistance and enforcement programs to maximize their effectiveness. Businesses were uncertain about how non-compliance would be addressed if it was discovered during assistance. Further, many companies likely passed on the workshops because they feared that showing up would

## Hot P2 Topics in the Northeast: 2000-2004

**Auto body shops, auto salvage yards, metal finishing, metal fabrication, wood furniture, health care facilities, schools, ski areas, marinas, colleges & universities, dental facilities, chemical management, compliance assistance, environmental management systems (EMS), mercury, dioxin, toxic use reduction, websites, electronic waste, green buildings, measuring P2, environmental management accounting, greening government, flame retardants, lead, P2 integration, P2 & security, environmentally preferable purchasing (EPP), design for the environment (DfE), lean & green manufacturing, innovation**

put them on the Agency's radar and open them up to more regulatory scrutiny. Lastly, dwindling Agency resources made engaging the regulatory programs in the workshops and assistance manuals more difficult.

### *Multi-media Inspections*

Throughout the 1990s, the PPU tried to build an understanding of P2 and integrate it throughout the DEC's regulatory programs. The most significant of these efforts was the Multi-Media Pollution Prevention (M2P2) program. This involved having the regulatory programs commit to implementing several multi-media P2-focused regulatory inspections annually. In each of the DEC's regional offices, there was a M2P2 coordinator that led their region's M2P2 efforts. However, by the late 1990s resources became challenging, and the M2P2 program began to lose its momentum.

In the early 2000s, the M2P2 program ceased to formally exist, and the support structure that the PPU had built with the regional M2P2 coordinators became a victim of funding cuts. Nevertheless, M2P2

program implementation did leave its mark on the Agency. Although the regional offices were no longer required to have M2P2 inspections in their work plans, some continued to conduct these inspections in certain situations.

### *Transition*

Starting around 2000, the PPU entered a period of transition. The PPU began to place an emphasis on promoting Environmental Management Systems (EMS) and developed a DEC policy on EMSs. Part of this policy stated that DEC would lead by example and pilot EMSs within the Agency. In addition, the Unit partnered with the EPA on the National Environmental Performance Track and began initial discussions with stakeholders on developing a similar State program to encourage and motivate sustained environmental leadership. This resulted in the development and implementation of the NY Environmental Leaders Program, which the PPU now leads. At the same time, the PPU reassessed how they recognized success. The Governor's Award for P2 was consolidated with other DEC awards programs into the Environmental Excellence Awards, which the PPU continues to lead (see Program Update below).

Further, the Unit assessed its priorities and defined future directions. In 2002, the DEC completed a multi-stakeholder Comparative Risk Project to identify NY's most pressing environmental risks and the P2 strategies to address them.

The PPU supported several legislative forums that led to the development in 2003, of a legislative white paper entitled "Helping Small Businesses Succeed through P2." From that paper and other efforts, it became clear that a statutory basis was missing from PPU's earlier efforts. That changed in September 2005 when Article 28, "Pollution Prevention" of NY's Environmental Conservation Law was signed into law. This law endorsed some of PPU's existing activities and charted a new course. It mandated that the DEC have a small business P2 and environmental compliance assistance program, which has enabled the



## Northeast Assistance & P2 Roundtable Timeline

(2005 continued)

- .... **"Brominated Flame Retardants' Workshops held**
- .... **"Pharmaceuticals in the Environment" Workshops held**
- .... **Webinars on climate change, municipalities, greening the supply chain, effective social marketing held**
- .... **Integrated Chemicals Workgroup formed**
- .... **EMFACT™ project launched**

2006

- .... **"Reducing Lead..." Feature Article in NE A&P2 News vol. 16 published**
- .... **"Assessing Alternatives to... Toxics" Feature Article in NE A&P2 News vol. 16 published**
- .... **"Tanning Bed Lamps Out? Recycle" brochure published**
- .... **"Briefing Paper on Mercury Use in Lighting" published**
- .... **Computer-to-Plate Lithographic Printing published**
- .... **"National P2 Results Data System" posted online**
- .... **Common Measures Project started**
- .... **ERP Consortium formed**
- .... **"U.S. High Production Volume Chemicals" Conference held**
- .... **"Mercury Reduction in Schools" Workshops held**
- .... **Webinars on survey design, stormwater control, & improving websites held**
- .... **EMFACT™ Advisory Group formed**

(continued on page 25)

Unit to focus on improving chemical management in schools, greening the hospitality sector, improving the management of pharmaceuticals, and placing P2 interns in businesses. The law also requires the establishment of a P2 and Environmental Compliance Coordinating Council (Council) to coordinate the delivery of P2 and compliance assistance across New York government agencies and authorities. The PPU led the initial deliberations of the Council and the development of the required reporting to the legislature before rotating the chairmanship to Empire State Development this past year.



### **P2 Institute**

The P2 Law requires the DEC to establish a Pollution Prevention Institute (P2I). The P2I was launched in March 2008 at the Rochester Institute of Technology and is a partnership with Rensselaer Polytechnic Institute, Clarkson University, State University at Buffalo, and the state's 10 regional technology development centers. The P2I has helped to address DEC's previous difficulty in effectively providing assistance. The Institute is independent from DEC's regulatory programs and is able to provide support for business through direct assistance, research and development, and technology transfer. In addition, some of the P2I work builds on what the Agency learned during the implementation of the M2P2 program. Instead of having a specific component with multi-media regulatory inspections, the P2I was tasked with training DEC regulatory staff so that inspectors are better able to identify facilities that are ripe for P2 assistance. When DEC inspectors identify these facilities, they make a referral directly to the P2I. The training element of this approach was offered to DEC staff at three locations in 2009.

In addition, the P2 law gives specific powers to the DEC to develop policies that set forth how enforcement will be taken when discovered during assistance

activities. While previous efforts to advance discussion on this topic did not prove to be fruitful, language within Article 28 has created a renewed emphasis on developing an enforcement discretion policy. PPU staff is currently working with the DEC Office of General Counsel in finalizing a draft of this policy. The policy may ultimately lead to new approaches for P2, compliance assistance, and enforcement integration.

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**“It is great to see the growth of P2 in New York. From developing Waste Minimization Plans, to the passing of legislation that promotes P2 and the development of the P2 Institute. We’ve come a long way baby.”**

*Dennis Lucia, New York State Department of Environmental Conservation*

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### **Green Procurement**

Starting around 2000, the PPU became involved in green procurement and worked on implementing an executive order requiring government agencies to utilize green cleaning products. A recent executive order on green procurement (EO-4) has pushed these activities beyond cleaning products. PPU staff is now actively involved in the development of, with a number of State government agencies, green specifications that cover many product categories.

### **Advancing P2 Through Partnerships in Rhode Island**

*By Richard Enander, Rhode Island Department of Environmental Management (RI DEM) & Jim McCaughey, Narragansett Bay Commission (NBC)*

Since 1990, the Rhode Island Department of Environmental Management (RI DEM) has partnered with numerous institutions and agencies, including the University of Rhode Island (URI), Narragansett Bay Commission, Rhode Island Manufacturers



Extension Service, and Economic Development Corporation, and others, to deliver high-quality, hands-on P2 assistance to more than 500 companies. These partnerships have helped businesses improve economic performance while eliminating millions of pounds of industrial waste.

The URI Center for Pollution Prevention – RI's key technical resource – provides laboratory and research facilities for analytical work and pilot testing of P2 technologies; graduate and undergraduate student internships for specialized industrial projects; P2 researchers in the Departments of Chemical Engineering, Civil and Environmental Engineering, Food Science and Nutrition, and Textile Chemistry; a “safe haven” for corporations that wish to work on sensitive environmental issues without direct government involvement; an incubator for new ideas and technologies; and international cleaner production collaborative efforts in South Korea, Thailand, Columbia, and Central America. In addition to having trained hundreds of graduate students and industry professionals in P2 at URI, notable areas of ongoing research focus on replacing toxic cleaning processes, identifying and implementing sustainable energy management measures for POTWs, and assessing renewable energy opportunities.

In support of Rhode Island's P2 efforts, more than \$2.5 million in competitive grant dollars for business and industry (e.g., seafood processing, textile and chemical manufacturing, plating/metal finishing, jewelry manufacturing, auto body repair, and dental practices) have been awarded by the EPA, National Oceanic and Atmospheric Administration, and National Science Foundation.

#### ***Environmental Results Program***

Within the past ten years, a major program focus at RI DEM has been to integrate P2 and the ERP for the auto body repair, auto salvage, underground storage tank, hospitality and tourism, exterior lead paint removal contractor, and construction stormwater runoff sectors. This integrated, “evidence-based”



## **Northeast Assistance & P2 Roundtable Timeline**

### *2007*

- .... **“Green Cleaning” Feature Article in NE A&P2 News vol. 17 published**
- .... **“Biofuels in the Northeast” Feature Article in NE A&P2 News vol. 17 published**
- .... **...Spray Gun Washers Using Alternative Cleaners published**
- .... **NE States Succeed in Reducing Mercury &...Address...Challenges published**
- .... **Mercury Use in School Classrooms... published**
- .... **P2Rx™ “P2 for Consumers” Topic Hub posted**
- .... **“High Production Volume Chemicals” Regional Workshops held**
- .... **“Chemical Cleanout of Schools” Workshops held**
- .... **“Methods for Assessing Chemical Alternatives...” Workshop held**
- .... **“P2 Measurement Regional Workshops” held**
- .... **Webinars on P2 grants, cleaners, spray painting, printing, hospitality, P2 integration held**
- .... **Beta version of EMFACT™ launched**
- .... **NEWMOA Climate Change & Waste Management initiative started**
- .... **Paperless meetings started**

### *2008*

- .... **“... Hospitality Industry” Feature Article in NE A&P2 News vol. 18 published**
- .... **“...Garment Cleaning” Feature Article in NE A&P2 News vol. 18 published**
- .... **Trends in Mercury Use in Products published**
- .... **P2Rx™ Lead Sinker Topic Hub posted**

*(continued on page 27)*

approach to environmental compliance and P2 has not only produced measurable results but has done so during a time of severe fiscal constraints and decreasing resources. Example results include:

- **Auto body sector**- RI's auto body ERP has resulted in a 33 percent improvement in hazardous waste manifest tracking; a 28 percent reduction in methylene chloride usage; 37 percent and 48 percent improvements in wash water runoff and wastewater discharge signage, respectively; and a 45 percent increase in compliance with occupational health requirements.



- **Auto salvage yards**- RI's auto salvage yard ERP has resulted in improvements in auto salvage yard lead acid battery storage, lead acid battery leak inspection, removal and recycling of mercury switches from hood/trunk, and labeling of waste oil containers. In total, 10,713 mercury-containing switches (yielding 24 pounds of mercury) were recovered in the first year of the program. The average observed improvement in performance for these 5 indicators was 45 percent.
- **Underground storage tanks (UST)**- In the RI UST sector, comparisons of overall industry compliance at baseline and post-ERP intervention also found statistically significant improvements in compliance by checklist "category". Overall, significant improvements in compliance were found for 4 of 5 compliance categories; the average observed compliance performance improvement for these 4 categories ranged from 6 to 38 percent.

### **Reducing Wastewater**

The Narragansett Bay Commission (NBC) owns and operates Rhode Island's two largest wastewater treatment facilities, which serves approximately 360,000 people and about 8,000 businesses. The NBC initiated a P2 Technical Assistance Program (P2 Program) in September 1991 with the assistance of a grant from the U.S. EPA Pollution Prevention Incentives for States (PPIS) Program. The Program was designed to promote the use of P2 techniques and technologies by the industries serviced by the NBC. The primary goal of the NBC P2 Program is to: establish and maintain a cooperative working relationship with the regulated industrial community in order to economically minimize environmental impacts from industrial operations.

Through the P2 Program, NBC P2 staff performs technical assistance site visits to industrial users, organizes and conducts workshops and seminars, and produces fact sheets. The NBC P2 Program has experimented with the following approaches:

- **Industrial Wastewater Treatment & P2 Training**- In September of 1996, the NBC received a grant from EPA to establish an Industrial Wastewater and P2 Training course. The course curriculum was designed to offer training on up-to-date wastewater treatment, environmental regulations, and P2 techniques and methodologies.
- **National Metal Finishing Strategic Goals Program**- The National Strategic Goals Program (SGP) was developed by a group of stakeholders brought together by EPA through the Common Sense Initiative (CSI). Stakeholders included representatives from the metal finishing industry, state and local governments, environmental groups, labor organizations, and public interest groups, as well as the EPA headquarters and regional offices. This voluntary program has encouraged participants to conserve water, energy, and metals; reduce hazardous waste and air emissions; and improve economic payback. Participants have received

## Hot P2 Topics in the Northeast: 2004-2009

**Hospitality, marinas, dental facilities, auto body shops, salvage yards, garment cleaning, healthcare facilities, climate change, electronics, green cleaning, measurement, safer alternative chemicals, PBTs, lead, mercury, toxics use reduction, stormwater, energy efficiency, water conservation, green building, renewable energy, environmentally preferable purchasing, product stewardship, greening government, lean & green, greening the supply chain, DfE, social marketing, performance measurement, innovation**

technical assistance and regulatory flexibility, as rewards for committing to and achieving established goals. A total of 20 RI metal finishing companies have signed onto the Program.

- **Environmental Management System Program-** In October 1999, the NBC was awarded matching grant funds from EPA to initiate a program to train and assist the companies with developing site specific Environmental Management Systems (EMS). In early 2001, the NBC contracted with a consulting firm to conduct a series of EMS workshops. The workshops included eight modules that covered all aspects of creating an EMS. NBC continues to work with local industry to develop and utilize various aspects of EMSs through P2 assistance efforts.
- **P2 for Hospitals and Health Care Facilities-** In September 2002, NBC was awarded funding from EPA to initiate a P2 program for hospitals and health care facilities. The P2 Program and NBC Pretreatment staff with assistance from URI, RI DEM and the Rhode Island Dental Association conducted environmental compliance/P2 audits of



## Northeast Assistance & P2 Roundtable Timeline

(2008 continued)

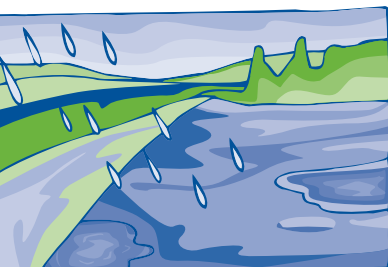
- Webinars on green cleaning, energy efficiency, garment cleaning, auto body, nanotech., & REACH & RoHS
- “P2 Measurement Regional Workshops” held
- Hospitality Workgroup formed
- NE A & P2 Roundtable updated strategic plan adopted
- Safer Chemicals Workgroup formed

2009

- “Climate Change Action” Feature Article in NE A&P2 News vol. 19 published
- “Greening Government” Feature Article in NE A&P2 News vol. 19 published
- NEWMOA Climate-Waste Action Plan published
- Common Measures Project Final Report published
- P2Rx™ “P2 Internship Topic Hub” posted
- “2009 Mercury Science & Policy Conference” held
- Meeting of EPA Region 2 programs held
- Webinars on program survival, energy management, energy efficiency, zero waste, green cleaning, safer alternatives, lean & green, common measures project held
- Updated strategic plan for NEWMOA focusing on “exploring, developing, promoting, & implementing environmentally sound solutions for reducing materials use & preventing pollution & waste...” adopted
- Interstate Chemicals Clearinghouse (IC2) started
- EMFACT™ launched & workshops held

a select grouping of hospitals, health care, and dental facilities. Using the findings of these audits the NBC conducted additional assessments, organized workshops, identified appropriate metrics, and developed BMPs to incorporate into wastewater permits.

- **Stormwater P2-** In October 2004, NBC was awarded an EPA P2 Grant to address stormwater management. As part of this effort, NBC conducted site visits; completed Stormwater Abatement Projects; held Stormwater Management Workshops; developed Stormwater BMPs documents; and conducted a variety of other activities. The



Stormwater Abatement Project has resulted in an estimated reduction of more than 15 million gallons per year of stormwater flow to NBC facilities and to combined sewer overflows.

- **Energy Management Programs-** In October 2005, NBC was awarded a P2 Grant from EPA to initiate a program to investigate energy conservation and renewable energy opportunities at the NBC. As part of this project, NBC has been conducting detailed energy audits of its various facilities and operations and researching the feasibility of utilizing renewable energy on a large scale. In October of 2008, NBC was awarded a grant from EPA to further support sustainable energy management plans for RI wastewater treatment facilities (WWTF). This project has two components. First, NBC and its partners have initiated a program for RI WWTFs to develop Energy-Focused Environmental Management Systems (EF-EMS). Secondly, NBC and RI DEM have developed and implemented an ERP for the food processing business sector to help them improve oil/grease discharge compliance and create incentives to encourage the use of collected grease as a renewable energy source.

## Moving from Waste Reduction to Sustainability in Vermont

By Gary Gulka, Vermont Department of Environmental Conservation (VT DEC), Assistance & Pollution Prevention Program

Vermont's P2 Program began in earnest with the passage of the state's Toxics Use and Hazardous Waste Reduction law in 1991. The law required industry plans, authorized technical assistance, and provided funding and positions. P2 grants from EPA provided startup funding. At that time, NEWMOA's P2 Roundtable provided essential networking, information sharing, and technical training to state programs. Vermont learned from some of the P2 pioneering states, such as Massachusetts, Washington, and Oregon since they had adopted their P2 planning laws a year or two earlier.

The Program's focus in the 1990s was on helping businesses and industries "discover" P2 so that they could implement source reduction that would result in measurable decreases in toxics use and hazardous waste. The VT DEC program became well versed at providing sector-specific outreach and assistance through workshops, focus groups, guidebooks, videos, and on-site technical assistance. This assistance focused on solvents and coatings, and such sectors as electronics, metal fabrication and finishing, wood finishing, auto body, printing, and many smaller businesses, including vehicle service and dry cleaning.

A memorable training event that DEC organized in the early 1990s was a solvent alternatives vendor show, called a Solvents Bazaar that was modeled after one developed in Massachusetts. Vendors of alternative solvents and equipment set up shop in a large auditorium. Businesses were invited to bring their parts to test clean in various alternative systems, including hot water, microbial cleaners, and bio-based solvents. Events, such as these, played a large role in the move away from chlorinated solvents to water-based and other safer cleaning methods.



By 2008, hazardous waste generated by planning facilities had decreased by 8 percent from the 1993 baseline. Toxics use had been reduced by 3 percent from the 1995 baseline. During that period, the overall number of facilities has decreased sharply – by over half – as many reduced below the threshold amounts of toxics use or hazardous waste generation required for planning. Vermont tracks the number of new hazardous waste and toxics use reduction initiatives implemented by facilities on a yearly basis. Although toxics use reduction results have seemed rather insignificant over the years, the modest decrease still represents a reversal in past trends of ever-increasing amounts of toxics use. Vermont's smaller facilities and planning thresholds have sometimes led to large swings from year to year in toxic use data as a significant change by one or two of the larger facilities can have an inordinate impact.

### ***Business Recognition Programs***

A significant VT DEC P2 Program accomplishment has been the development of business recognition programs for small and large businesses. Recognition programs serve both to provide an incentive for behavior change and as means of encouraging others to act in a similar fashion. In 1998, Vermont DEC and its partner, the Vermont Small Business Development Center, launched the Vermont Business Environmental Partnership (VBEP). VBEP developed VT's two-tiered, standards-based certification program starting with the "Green Hotels" Program and then expanding to other businesses. Other sector programs that have recently been developed include Clean Marinas and Green Restaurants. Currently, VBEP is considering starting recognition programs for golf courses and colleges/universities. The Partnership provides direct assistance in meeting beyond compliance BMPs, recognition, and a means to measure environmental outcomes through annual surveys. Currently, there are over 175 program participants and interest continues to be strong.



The Vermont Governor's Award for Environmental Excellence and P2 is currently in its 17<sup>th</sup> year. It has provided a stimulus for companies and organizations to share their successes in P2 and resource conservation and receive recognition at the highest levels, while serving as models for others. This year's awards program had the highest number of applicants since the program's inception - an encouraging sign. There are several businesses that are multi-year award recipients. IBM Burlington uses the program to nominate various project teams for their P2 efforts and has been an award recipient in every year of the program.

### ***Greening of State Government***

Vermont's P2 Program has played a key role in moving state government to more environmentally sustainable practices. The Vermont Clean State Program was established in 1995 to promote resource conservation and P2 throughout state government. For the first time, VT agencies began to comprehensively evaluate their environmental footprint. Through the Clean State Council, agencies convened regularly to develop plans to implement sustainable practices. Successful initiatives included

- Environmentally preferable purchasing policies for office paper, cleaning, and custodial supplies
- Recycled content standards for numerous products
- Downsizing the state's vehicle fleet
- Comprehensive energy audits
- Mercury product elimination

Many BMPs have been institutionalized in policy and practice, although the Clean State Council no longer exists, and there are still untapped opportunities for improvement.

### ***Mercury Reduction***

Many P2 programs, including Vermont's, have been home to programs with a focus on mercury reduction and elimination. NEWMOA played a major role 10 years ago in the facilitation and development of model mercury product legislation now adopted in

Vermont and many other states. This legislation is P2-based, targeting the elimination of mercury use and substitution of safer alternative products. Vermont is particularly proud of its programs to eliminate mercury use in schools, hospitals, dairy farms, and homes.

### **Challenges**

Many small businesses are in need of environmental assistance, especially in an economic downturn, as they look for ways to reduce compliance costs and other operating expenses. At the same time, VT DEC's non-regulatory staff positions are also less secure. The loss last year of a mercury reduction position has impacted Vermont's efforts, particularly the mercury education and reduction initiatives. Compliance assistance staffs are now being utilized to a greater extent to provide P2 assistance, though the demand for compliance assistance remains strong.

Over the years, P2 integration into DEC's regulatory programs has been met with limited success. DEC has had its greatest successes in P2 integration in the RCRA program, where regular staff meetings are held, inspection referrals are made, and joint outreach is undertaken. With recent staffing reductions, many of the other regulatory programs are too overworked and understaffed to seriously consider P2 approaches.

### **Partnering for Assistance & P2 at EPA Region I**

*By Rob Guillemain, U.S. EPA Region I-New England (EPA Region 1), Assistance & P2*

EPA New England's Pollution Prevention and Assistance Office (A&P2) was founded in 1995 by Regional Administrator John DeVillars as part of a new "problem solving" approach epitomized by the P2 Act. When it was formed as part of the Office of Environmental Stewardship (OES), the A&P2 Office was given the ambitious mission to be a "laboratory of bold experimentation" for environmental programs and policy tools. Over the years, this mission has been

accomplished in a number of notable ways, resulting in a legacy of valuable lessons and achievements. The following sections highlight some key areas that distinguish the A&P2 Office.

### **Integrated Strategies**

Unlike any other EPA office, OES was structured to combine a multi-media enforcement office and a voluntary assistance office. By placing these offices under one director, a cooperative relationship between their respective "carrot and stick" approaches could be developed. As a result, A&P2 launched a number of highly successful "Integrated Strategies" that used regulatory and enforcement pressures to drive participation in voluntary programs that, in turn, improved compliance.

The first Integrated Strategy focused on colleges and universities, a sector that was struggling to meet its environmental compliance obligations. Following a number of EPA enforcement cases in 1999, A&P2 quickly developed several popular educational programs and tools for improving compliance rates and environmental performance, including

- An "Environment 101 for Colleges and Universities" workshop
- A self-audit initiative that offered reduced exposure to enforcement for a limited time if the schools voluntarily identified and corrected violations; over 175 colleges and universities have participated
- An EMS guide for colleges and universities
- A partnership with the Campus Consortium for Environmental Excellence that created a "Best Management Practices" Catalogue

Since the first integrated strategy, similar initiatives have been developed to improve compliance and environmental performance with municipalities, auto body shops, hospitals, metal finishing facilities, wood finishing businesses, and marinas.

### *Sector-Based Assistance*

Every business sector faces a special set of environmental challenges, technical and informational barriers, economic constraints, and cultural proclivities. For this reason, the A&P2 established the New England Environmental Assistance Team (NEEATeam) in 1995 to help businesses and other regulated entities comply with environmental laws, benefit from P2, and improve environmental performance. The NEEATeam developed the following outreach and educational strategies and tools:

- Workshops on compliance, P2, and emerging technologies
- Manuals, checklists, fact sheets, videos, and online information
- Technology demonstrations, on-site assessments, and issue roundtables

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**“I remember my first meeting involving the printing industry and assistance providers in 1988. They had never met regulators before (on purpose) and wanted to put bags over their heads, so they wouldn’t be identified. Boy, have they come a long way!!”**

*George Frantz, Assistance & P2 Unit, EPA Region 1–New England*

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Over the years, A&P2 has worked with healthcare facilities, marinas, metal finishers, K-12 schools, small drinking water systems, vehicle service shops, higher education, and wastewater treatment facilities. The sector-based approach was a novel idea for EPA in the 1990s and, although the NEEATeam no longer exists as a formal program, outreach to specific sectors remains a cornerstone of A&P2 operations and grant programs.

### *New Approaches*

Since its founding, A&P2 has tested and implemented new ideas. The success of these efforts is based on two trends. First, companies now see environmental performance as a key business strategy and, second, state environmental agencies need to find better, less resource intensive ways to promote compliance and improve environmental performance. Since 1995, the A&P2 has explored ways to help businesses achieve their environmental goals and help states improve their regulatory programs.

- **Experimental Regulatory Projects-** A&P2 explored ways to overcome regulatory impediments to superior environmental outcomes by collaborating with states and businesses. A&P2 joined the Regional Innovations Workgroup to investigate better ways to achieve regulatory goals in the areas of Total Maximum Daily Loads. To overcome regulatory shortfalls, A&P2 staff supported the New England University Labs XL Project, which eventually changed federal regulations. Finally, A&P2 championed the Environmental Results Program (ERP), a self-certification program for small businesses developed by MassDEP.
- **Partnership Programs-** Modeled on state partnership programs, EPA Region 1 established the StarTrack program, which was later copied and supplanted by EPA’s national Performance Track Program. This partnership program required member companies to establish an EMS, set continuous goals, and report environmental outcomes. A&P2 supported other partnership programs, such as the Hospitals for a Healthy Environment (H2E) that began as a New England-based mercury reduction project for hospitals.
- **Environmental Management-** In the late 1990’s, A&P2 began to promote environmental management strategies. The environmental management programs assumed different names, such as Environmental Management Systems (EMS), Total Quality Management (TQM), Sigma

Six, and Lean Manufacturing, but the underlying goal was to give businesses a better understanding of environmental costs and more control over operations.

- **Environmental Technology-** Beginning in 1996, AP&2 housed the Center for Environmental Industry and Technology (CEIT), a clearinghouse of environmental technology information. The only EPA program of its kind, CEIT provided workshops, publications, and networking services to technology developers and users. In 2008, most of CEIT’s services were expanded to a national Environmental Technology Opportunities Portal ([www.epa.gov/etop](http://www.epa.gov/etop)).

**“We started our EPA compliance assistance around 1995 thinking enforcement and assistance must remain separate from one another to maintain the integrity of assistance. With time and practice comes wisdom. We now rely on good communication with our enforcement programs to help ensure that we deliver useful and timely information to those we try to assist.”**

*Mary Dever-Putnam, Assistance & P2 Unit, EPA Region 1– New England*

**Outcomes**

As a performance-based environmental strategy, P2 offers concrete economic and environmental benefits. But it has taken years to develop the policies, procedures, and tools that would enable state technical assistance programs to report on environmental outcomes. Working in conjunction with NEWMOA and state P2 Programs, the A&P2 Office has promoted P2 measurement, specifically for EPA grants. The following Table presents results that have been reported by New England states and non-profit grant recipients.

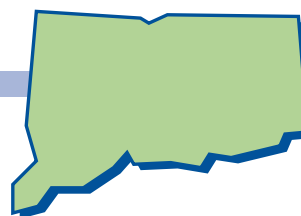
<b>Results of EPA Region 1 P2 Grants (2006-2009)</b>			
<b>Pounds of pollution prevented</b>	<b>Gallons of water reduced</b>	<b>Billions of BTU conserved</b>	<b>Dollars saved</b>
7,085,869	18,660,000	55	\$1,250,000

**Building P2 Capacity**

EPA’s funding of state and non-profit P2 projects has helped build capacity for continued P2 progress. Since 1990, EPA has awarded a national average of \$5 million per year of P2 funding. In New England, P2 funding for the past 15 years totaled over \$6 million for state P2 programs and \$1.8 million for non-profit organizations. EPA’s financial support, while only a portion of total state and local funding, has helped build a foundation for successful P2 efforts and supported a culture of collaboration and innovation.

A significant and memorable aspect of the A&P2 Office over the past 15 years is its commitment to building productive relationships with states, small businesses, and communities. The Office has witnessed how these relationships shifted away from fear and suspicion and into creative and productive collaborations. This ethic of partnership underscores a key aspect of the P2 Act and points the way to a healthy environment and sustainable economy.

**PROGRAM UPDATES**



**CONNECTICUT**

**Connecticut Department of Environmental Protection (CT DEP)**

**Green Lodging**

Since the CT Green Lodging program’s launch in May of 2009, 13 hotels have been certified, representing just over 1,500 rooms. The P2 office recently updated



the online certification workbook with changes to the recycling, swimming pool, and energy sections. In the process of revising these



sections, they have worked with a group of swimming pool suppliers to address their concerns about how points were awarded in that section. DEP has also collaborated with Boston Green Tourism on a series of training sessions. The workshops were held in New Haven in March and Old Saybrook in April. Presentations from the workshops are available on the DEP's green lodging web page.

**For more information, visit:**

[www.ct.gov/dep/greenlodging](http://www.ct.gov/dep/greenlodging).

#### **Hospital Environmental Roundtable (CHER)**

CT DEP sponsored a CHER forum called "Measuring Matters" at Bridgeport Hospital in December 2009 to discuss the importance of tracking waste disposal and recycling data for measuring success, setting goals, and managing costs. Presenters included Janet Bowen of EPA, who described EPA's free WasteWise program, the RE-TRAC tool, Energy Star, and energy benchmarking. Four hospitals presented how they are using data to enhance their waste management programs and green team projects. Waste Management's Healthcare Solutions manager presented on performing hospital waste audits.

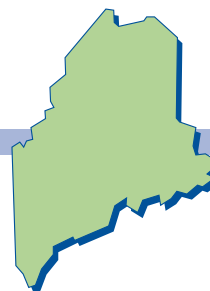
**For more information, contact:** Kim Trella, CT DEP (860) 424-3234, [kim.trella@ct.gov](mailto:kim.trella@ct.gov).

#### **Organic Land Care**

Pilot projects have been conducted for the last three years to test the use of organic land care on municipal playing fields in Manchester and Watertown. During the first two years of the pilot, Watertown experienced budget restrictions related to the project site, Deland baseball field. In 2009, the budget for the field was

cut. As a result, DEP will not be completing the third season of the project in Watertown. The Manchester pilot project has been completed, and results are available.

**For more information, contact:** Mary Sherwin, CT DEP (860) 424-3297.



MAINE

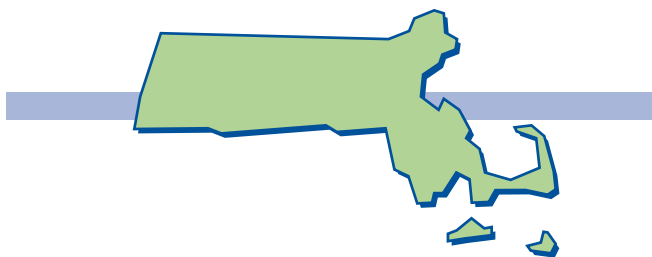
#### **Maine Department of Environmental Protection (ME DEP)**

Current activities of the Pollution Prevention Program in Maine DEP's Office of Innovation and Assistance (OIA) include:

- Implementing a state environmental certification programs for lodging businesses and restaurants. Currently, there are 110 certified lodging businesses and 27 restaurants. The P2 program has performed over 70 site visits at these businesses making an average of 10 P2 recommendations at each one. Verification audits of point totals occur annually at 12 randomly-selected locations.
- Launching a state environmental certification program for grocery stores.
- Assisting businesses and organizations with calculating their GHG emissions inventory as part of the Governor's Carbon Challenge.
- Managing the Clean Government Initiative and providing assistance to Maine's Division of Purchases on selection of Green Seal-certified cleaning chemicals, low mercury lighting, and Electronic Product Environmental Assessment Tool (EPEAT)-rated electronics.

- Assisting indoor swimming pools at the YMCA and hotels with appropriate chemical purchasing and use of a food grade enzyme to reduce phosphates, allowing the chlorine to sanitize more effectively and reducing overall chlorine usage.
- Assisting six companies and institutions with the implementation of an EMS.
- Providing onsite compliance assistance utilizing Maine's Small Business Compliance Incentive Policy (SBCIP).
- Providing assistance to the Green Campus Consortium.
- Continuing to provide assistance to a number of industry sectors.
- Facilitating the Compliance Advisory Panel (CAP) as an effective tool to weigh in on OIA activities.

**For more information, contact:** Peter Cooke, ME DEP (207) 287-7100.



## MASSACHUSETTS

### Massachusetts Department of Environmental Protection (MassDEP)

#### TURA Enforcement

Over the last several years, the MassDEP has focused increased attention on compliance of facilities and toxics use reduction planners (TUR planners) with the Toxics Use Reduction Act (TURA). While the overall compliance level has been high, MassDEP has identified a number of instances of non-compliance relative to certification requirements and deficient toxics use reduction plans. MassDEP recently took

enforcement actions against two company officials at separate facilities for certifying their facility's 2008 TUR plan summary as a TUR planner when neither was a certified TUR planner.

**For more information, contact:** Paul Walsh, MassDEP (617) 556-1011.

#### Leading by Example

Leading by Example (LBE) was established by an April 2007 Executive Order directing Mass agencies to improve energy efficiency, promote clean energy technology, and reduce their environmental impacts. The Executive Order calls on state government to reduce its GHG emissions by 25 percent (from a 2002 baseline), reduce energy consumption at state-owned and leased facilities by 20 percent, and procure 15 percent of energy from renewable sources by 2012. In addition, it established the Mass Leadership in Energy and Environmental Design (LEED)-Plus building standard for new state construction, which requires energy performance to be 20 percent better than code. To meet these goals, the LBE Program works collaboratively with various state agencies, including the Division of Capital Asset Management and the Operational Services Division.

Recently, MassDEP received an award for installing efficient lighting and occupancy sensors in its Boston office; installing computer power management software that powers down computers during inactive periods and at night; recycling 111.5 tons of paper and cardboard and 3 tons of cans and bottles in FY 2008;

**POLLUTION  
PREVENTION**

**P<sub>2</sub>R<sub>x</sub>**

**RESOURCE  
EXCHANGE**

The Northeast A & P2 Roundtable is a member of the Pollution Prevention Resource Exchange, P2Rx, a national network of regional P2 information centers linked together to facilitate information retrieval from experts around the country.

**For more information, visit:**

[www.newmoa.org/prevention](http://www.newmoa.org/prevention) or [www.P2Rx.org](http://www.P2Rx.org).

reducing the agency's vehicle fleet, which is currently comprised of 20 percent hybrid or alternative fuel vehicles; and renovating the Agency's William X. Wall Experiment Station in Lawrence, which is on track to earn LEED Gold certification.

*For more information, visit:* [www.mass.gov/dep](http://www.mass.gov/dep).

### **Pay-As-You-Throw**

This year many MA municipalities have been laying the foundation for advanced waste reduction and recycling programs through the adoption of pay-per-bag disposal systems. Currently, 130 Massachusetts communities have implemented a Pay-As-You-Throw (PAYT) program, and more are actively evaluating the program's potential.



*For more information, visit:*

[www.mass.gov/dep/recycle/reduce/assistan1.htm#payt](http://www.mass.gov/dep/recycle/reduce/assistan1.htm#payt).

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**“Per-bag disposal policies reduce the amount of trash a community throws away between 25 to 40 percent, while increasing the amount a community recycles by about 25 percent. Pay-as-you-throw creates the right mix of incentives - it helps the environment, saves the community money, and places the cost of additional disposal on those who wish to dispose more.”**

*Laurie Burt, Commissioner, Massachusetts Department of Environmental Protection*

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## **Massachusetts Toxics Use Reduction Institute**

### **Community Grant Proposals**

MA TURI is seeking proposals from non-profit community or environmental organizations interested in reducing the use of toxic chemicals. The deadline for proposals is June 30, 2010. To better understand grant requirements and elements of successful projects, organizations are encouraged to attend a TURI pre-grant workshop.

*For more information, contact:* (978) 934-4343; visit [www.turi.org/community](http://www.turi.org/community).

### **TUR Continuing Education**

TURI hosted a Continuing Education Conference in May 2010. Workshop topics included reducing chemical risks through purchasing, occupational health and safety, energy conservation and regulatory updates.

*For more information, visit:*

<https://sites.google.com/a/turi.org/springce2010/>.

### **Champions of TUR Ceremony**

The annual awards ceremony held at the MA State House is scheduled for June 9. Three community organizations will be recognized as well as Alpha Chemical Services in Stoughton, Mass. The event will also acknowledge 17 Massachusetts companies who were recognized in the spring as “TURA 20th Anniversary Leaders” (see list on page 14).

### **Wet Garment Cleaning**

Best Neighborhood Cleaners in Medford, MA has been hosting demonstrations for other dry cleaners to showcase its new professional wet cleaning system, which has eliminated their use of perchloroethylene. The events are funded by EPA Region 1.

*For more information, contact:* Joy Onasch, MA TURI (978) 934-4343, [Joy@turi.org](mailto:Joy@turi.org); visit [www.turi.org/community/wet\\_cleaning](http://www.turi.org/community/wet_cleaning).



## NEW HAMPSHIRE

### **New Hampshire Department of Environmental Services (NH DES)**

#### ***Lean & the Environment***

In partnership with the New Hampshire Manufacturing Extension Partnership (NH MEP), the NH Pollution Prevention Program (NHPPP) completed three site assessments as part of a “Lean & Environment” project. The first two assessments served largely to test the ability of the two programs to function together. By the third assessment, they were comfortably and effectively combining expertise. As a result of this assessment, both programs uncovered potential process improvements in the areas of manufacturing efficiency, water use, energy use, and solid and hazardous waste generation. During an April meeting with the NH MEP, it was decided that the programs would continue to work together

#### ***Auto Body***

For 2010 to 2011, the NHPPP is partnering with the DES Small Business Technical Assistance Program to provide compliance and waste reduction assistance to the State’s estimated 600 auto body facilities. Compliance assistance is focused on small quantity generator (SQG) regulations and new National Emissions Standards for Hazardous Air Pollutant (NESHAP) regulations affecting spray painting operations. P2 assistance is focused on solvent wastes resulting from spray gun cleaning operations. Inspections are being conducted to establish a baseline on best management practices (BMPs) and regulatory compliance. To date, staff has visited about a quarter of the State’s facilities and, in partnership with the NH Auto Dealers Association, has offered seven workshops. Following

completion of the outreach activities, inspections will be conducted to determine if BMPs are being used and compliance rates have increased.

#### ***Green Cleaning***

Following implementation of the change from bleached to unbleached paper towels, the NH Department of Administrative Services (DAS) and NHPPP focused on a switch from traditional cleaning products to Green Seal-certified products. To date, DAS eliminated two floor cleaners, an odor neutralizer, a bathroom cleaner, and urinal deodorant blocks replacing them with environmentally-friendly products. When the toxic components of the old and new products were compared against the volume of product used, 223 pounds of hazardous materials were eliminated. A significant challenge in the project has been finding a more benign floor stripper, which is used in a greater quantity than any other product. Staff continues to search for an acceptable substitute. In the meantime, the project has begun to replace traditional bathroom fixtures with low flow and no flow fixtures.

#### ***Green Hospitality***

Under a partnership agreement with the NH Sustainable Lodging and Restaurant Program (NHSLRP), NHPPP continues to promote environmental stewardship at hospitality businesses. A certification process was developed for the lodging industry that has resulted in energy savings, water conservation, and waste reduction, and is now planning to expand to the restaurant sector.

#### ***Green Slopes***

The NH DES is continuing its work with SkiNH and the National Ski Areas Association on a “Green Slopes” initiative. The next phase of the project will be creation of a Best Management Practices Manual for ski areas. In addition, SkiNH and the NHPPP will conduct educational workshops.

***For more information, contact:*** Paul.Lockwood@des.nh.gov or Melissa.Zych@des.nh.gov; visit: <http://des.nh.gov/organization/commissioner/p2au/pps/gsp/>.



## NEW JERSEY

### **New Jersey Department of Environmental Protection (NJDEP)**

#### **Auto Repair Outreach**

NJDEP Office of Pollution Prevention and Right to Know continues to work with the auto repair trade associations on the New Jersey Green Auto Repair Program (NJGARP). The Office's Small Business Assistance Program is leading this effort. NJGARP is looking to expand the program to include auto body shops.

**For more information, contact:** Michael DiGiore or Ky Asral, NJ DEP (609) 777-0518; visit: [www.njgreenautorepair.org](http://www.njgreenautorepair.org).

#### **Wet Garment Cleaning**

The P2 Office has partnered with the New Jersey Small Business Development Center (NJSBDC) on a project to encourage solvent dry cleaners to switch to professional wet cleaning. The Office, NJSBDC, and equipment manufacturers conducted three demonstration projects at existing wet cleaning establishments. Staff recently gave a presentation on this initiative as part of a National P2 Roundtable-sponsored webinar.

**For more information, contact:** Michael DiGiore or Ky Asral, NJ DEP (609) 777-0518; visit: <http://njsbdc.com/njwetcleaning>.

#### **TRI Data Management**

The P2 Office has been involved in the EPA's central data exchange (CDX) network whereby TRI reports submitted to EPA are automatically routed to the NJDEP. Staff is finalizing enhancements to the program's database that will allow them to store and view the TRI data. This will make it easier to compare the TRI data with New Jersey's Release and Pollution

Prevention Report (RPPR) data to verify accuracy and determine the appropriate RPPR-regulated universe

**For more information, contact:** Michael DiGiore, NJ DEP (609) 777-0518.



## NEW YORK

### **New York State Department of Environmental Conservation (NYS DEC)**

#### **Pollution Prevention Institute (P2I)**

The New York State Pollution Prevention Institute (P2I) is in its third year of operation. Combining cutting edge research with off the shelf technology, P2I has saved New York State companies hundreds of thousands of dollars. Moreover, their work has prevented 372 tons of hazardous materials from entering the waste stream and saved over 70,000 kilo-watts of electricity. Over 100 organizations have participated in their professional workshops, covering a broad range of topics, including toxics in toys and acid bath extension. The community grants program has funded projects on such topics as toxic free lawn care, greening the film industry, and P2 at home.

**For more information contact:** Tim Kirchgraber, NYS DEC (518) 408-0213, [tckirchg@gw.dec.state.ny.us](mailto:tckirchg@gw.dec.state.ny.us); visit [www.nysp2i.rit.edu](http://www.nysp2i.rit.edu).

#### **Pharmaceuticals**

Progress continues on pharmaceutical collections activities. To date, DEC has sponsored 8 collection events and has collected and incinerated 2,200 pounds of unwanted/expired pharmaceuticals. In addition to holding collection programs, PPU is working on the development of guidance on how to run collection programs and



how institutions should manage the pharmaceutical wastes that they generate. The Unit is also looking into trying to develop a pilot pharmaceutical mail back program. The Agency's pharmaceutical website has been expanded to include all the collection programs being scheduled in the state.

**For more information contact:** Dennis Lucia, NYS DEC (518) 402-9484, djlucia@gw.dec.state.ny.us.

### **P2 Intern Program**

The P2 Intern Program is in its third and final year under the current EPA grant. The PPU hopes to continue the program if awarded a P2 grant from EPA. This year up to seven facilities, including businesses and municipalities, will host interns to work on diverse projects, including energy conservation, water use reduction, green infrastructure, and reducing toxics. Nearly 100 students applied to the program prior to the deadline, which is a significant increase over past years. The surge in applications is attributed to the success of the web pages developed and posted last fall.

**For more information contact:** Erica Cruden, NYS DEC (518) 402-9152, ebcrudden@gw.dec.state.ny.us; visit [www.dec.ny.gov/chemical/58632.html](http://www.dec.ny.gov/chemical/58632.html).

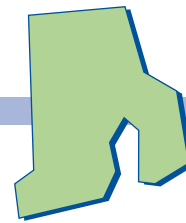
### **Environmental Excellence**

The sixth annual New York State Environmental Excellence Awards ceremony took place in Albany in December 2009. The award winning projects provide examples of how local governments, private businesses, and communities can come together to solve environmental challenges in tough economic times. The 2009 award recipients included:

- **Town of North Hempstead** began a groundbreaking initiative to partner public schools on a comprehensive recycling program in January of 2008.
- **Camp Venture, Inc.** is a not-for-profit corporation that cares for developmentally disabled children and adults within Rockland County, New York. During 2008, Camp Venture opened four new residences all of which were designed to be environmentally friendly.

- **Town of Islip** began a P2 boat pump-out program in 2006 with partial funding from the NYS Environmental Facilities Corporation.
- **Monroe County Department of Environmental Services** took the lead in facilitating the proper collection and disposal of pharmaceutical waste from households in 2008. They also produced a guidebook that outlines plans and procedures for collection events, checklists of needed materials, event preparations, and advertising samples.

**For more information, contact:** Marna Posluszny, NYS DEC (518) 402-9160, maposlus@gw.dec.state.ny.us.

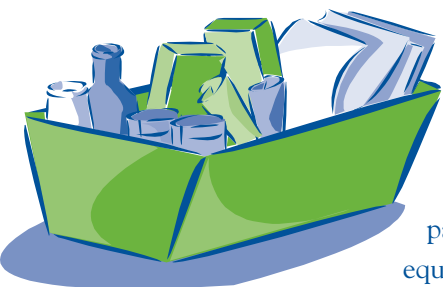


## RHODE ISLAND

### **Rhode Island Narragansett Bay Commission (NBC)**

#### **Commercial Recycling**

Under state law, all businesses in Rhode Island that have 50 or more employees are required to institute a formalized commercial recycling program. The Narragansett Bay Commission (NBC) initiated its own successful in-house recycling program in September 2001, when it moved into its newly constructed Corporate Office Building adjacent to its Field's Point Waste Water Treatment Facility (WWTF) in Providence. Tracking data for all recyclables became available in 2003. With an average annual workforce of 245, NBC employees have captured and recycled 235,904 pounds (118 tons) of solid waste since the program's inception and currently recycle an average of 33,701 pounds of mixed material each year. NBC also continues to recycle all of its scrap metal and Universal Waste. In 2009, NBC recycled 1,137 pounds of Universal Waste (primarily lamps & batteries) and 47,872 pounds of scrap metal.



NBC employees currently recycle an average of 18,637 pounds of office paper each year – this is equivalent to saving 3,610

gallons of oil, 31 cubic yards of landfill space, and 157 trees. Since electronic tracking data became available in 2003, NBC has recycled 130,460 pounds of paper, thereby helping to save 260,000 kilowatt hours of energy, 455,000 gallons of water, and an estimated 3,900 pounds of air pollutants.

Employee education and involvement, in addition to upper management support, have both played integral roles in the success of NBC’s recycling. NBC’s program is specifically designed to capture workplace recyclables at-the-point of generation. The benefits of such a process equate to a higher level of employee participation, value recyclables, a more organized framework for janitorial staff, and a more accurate means of tracking monthly recycling efforts.

**For more information, contact:** Dave Aucoin, NBC (401) 461-8848, x 418, [daucoin@narrabay.com](mailto:daucoin@narrabay.com).



VERMONT

**Vermont Department of Environmental Conservation (VT DEC)**

The Vermont Business Environmental Partnership (VBEP) has launched two new sector initiatives – Clean Marinas and Green Restaurants. The first marina and restaurant have recently achieved program standards. These two sectors will be a focus of the VBEP in the coming year. Over 20 new Green Hotels have joined the program in the past year.

The 17<sup>th</sup> annual Governor’s Award for Environmental Excellence ceremony was held on May 3. This year

there were 26 projects recognized in the largest applicant pool to-date.

Planning is underway for the 5<sup>th</sup> Annual “Greening Up Your Bottom Line” Conference, scheduled for October 6 at the Sugarbush Ski Area. The conference is sponsored by the VBEP and several businesses and will include various business sustainability topics, featuring business case studies, panel discussions, and vendors.

**For more information contact:** Peter Crawford, VT SBDC, [PCrawford@vtc.vsc.edu](mailto:PCrawford@vtc.vsc.edu).

**Auto Body Outreach**

VT DEC is participating in auto body workshops on EPA’s NESHAP regulation affecting spray painting operations. To date, more than 290 auto body technicians have received training through the VT Small Business Compliance Assistance Program. Additional workshops are planned in conjunction with paint formulators to provide both classroom and hands-on technician training. On-site assistance and consultations with auto body shops is on the rise as a result of the workshops.

**For more information, contact:** Gary Gulka, VT DEC (802) 241-3626.



**EPA REGION 1 – NEW ENGLAND**

**SmartWay & Clean Diesel**

EPA’s Assistance and P2 (A&P2) Office promotes collaboration between EPA’s SmartWay and related Clean Diesel programs and the Federal Highway Administration’s (FHWA) freight operation program and resource center. This involves sharing resources, contacts, and project ideas at the federal, state,

regional, and local levels. Throughout New England, state transportation and air agencies are using Diesel Emissions Reduction Act funds for projects that implement SmartWay and other fuel-saving clean diesel technologies, including truck parking electrification, locomotive engine idle reduction devices, and shore power stations for boats.

**For more information contact:** Abby Swaine, EPA Region 1 (617) 918-1841.

### **Stormwater**

EPA-New England is providing assistance to communities managing Phase II small municipal storm sewer systems (MS4s). The Region is holding MS4 Stormwater Permit Compliance Seminars that start on May 11th with a “Hands-On” GPS Workshop for Mapping Water Infrastructure Systems in Merrimack, NH. Later this year, EPA will conduct workshops that address all aspects of MS4 stormwater permit compliance. At these workshops, experts will describe stormwater control BMPs and Low Impact Development (LID) technologies.

**For more information contact:** Joshua Secunda, EPA Region 1 (617) 918-1736; visit <http://www.epa.gov/region1/stormwater>.

### **Green Landscaping**

On May 11, the A&P2 Office provided a green landscaping or “Greenscaper” workshop in Bridgeport, Connecticut. The Office is working with the Bridgeport Parks Department and Small Business Office to develop an internship program to promote the use of Low Impact Development (LID) for stormwater runoff management. Through these efforts, approximately 25 landscapers will be trained and receive certificates of skill as “greenscapers.” The expectation is that 20-50 rain gardens or other innovative stormwater runoff control projects will be designed and installed on residential and city-owned property. Additional partners in these efforts include the University of Connecticut Non-Point Education for Municipal Officials, U.S. Department of Agriculture National Water Program, CT DEP, and Rutgers University.

**For more information contact:** Myra Schwartz, EPA Region 1 (617) 918-1696.

### **Green Economy**

The A&P2 Office is supporting the Region’s focus on green economy outcomes, including: providing leadership on the regional Green Jobs Network, providing input to the newly-formed EPA Headquarters Office focused on the green economy, and working on a number of green curriculum projects with the Department of Labor and Bridgeport, CT.

**For more information contact:** Anne Leiby, EPA Region 1 (617) 918-1076.



### **EPA REGION 2**

### **Greening Hospitality**

EPA Region 2’s Pollution Prevention (P2) Team has identified the greening of the hospitality sector as one of its priorities. Region 2 supports this sector through: economic assistance (the P2 and Source Reduction Assistance grants), targeted outreach and education (e.g., workshops, publications, and on-line tools), and direct technical assistance (e.g., regional and national experts, partnership programs), and the Green Team. Region 2’s recent hospitality sector activities include projects in New York and Puerto Rico.

**New York:** Through a grant to State University of New York College at Buffalo (SUNY-B), student interns work with the Erie County P2 Team (ECP2T) to identify P2 opportunities at hospitality businesses in the Buffalo area. The interns have conducted assessments to reduce hazardous and priority chemicals, promote environmentally preferable purchasing, and conserve resources at 10 facilities. A second round of



funding was recently awarded to SUNY-B to expand its P2 assistance to additional hospitality businesses through on-site assessments focused on heating, ventilating and air conditioning; grounds maintenance; and transportation. The project will also include the development of a college curriculum on P2 for hospitality, which will be offered at SUNY-B and will be available for other colleges to use. SUNY-B and ECP2T have also partnered with the Buffalo Niagara Convention & Visitors Bureau to develop the Buffalo's "Green Hospitality Initiative", which has begun work with hospitality partners to review current environmental practices and establish a more comprehensive green plan for the industry.

The P2 Team recently awarded a grant to the NY Restaurant Association Foundation for a project entitled "The Green Restaurant Initiative" (GRI). The purpose of the GRI is to create awareness and deliver effective methods for restaurants in New York City to begin greening their operations by organizing information into a format that can readily be used by restaurant operators.

**Puerto Rico:** EPA Region 2 provided a P2 grant to the Puerto Rico Solid Waste Management Authority (PRSWMA) to advance P2 and sustainability within the hospitality sector. As part of this initiative, PRSWMA (working in partnership with the PR Hotel & Tourism Association), held a number of workshops in Puerto Rico to provide stakeholders with information about energy and water efficiency, and waste reduction practices. PRSWMA has worked closely with 10 hospitality facilities to demonstrate commercially available green technologies, such as energy and water efficient fixtures, and measure environmental and economic benefits.

**Workshop:** In January 2009, Region 2 hosted a workshop entitled "Pollution Prevention in the Hospitality Industry: How Managing the Environment Can Help Your Bottom Line." Representatives from government, hospitality facilities, industry suppliers, non-governmental organizations, and academia attended the session to learn more about opportunities to prevent pollution.



## NEW PUBLICATIONS & EDUCATIONAL MATERIALS

The following is a list of *new* publications and other educational resources available online.

### Green Hospitality Websites

New York State Green Hospitality Initiative:  
[www.dec.ny.gov](http://www.dec.ny.gov)-New York State Green Hospitality Initiative

EPA Region 2 on-line learning tool for hospitality:  
[www.epa.gov/region02/p2/hospitality/index.html](http://www.epa.gov/region02/p2/hospitality/index.html)

### P2 Libraries – Now Available Through [www.newmoa.org/prevention/p2rxinfo/libraries.cfm](http://www.newmoa.org/prevention/p2rxinfo/libraries.cfm) including:

#### P2 InfoHouse

P2 InfoHouse is an online P2 reference collection of more than 40,000 documents. It is searchable by keyword. P2 InfoHouse is a product of P2Rx™ and the NC Division of P2 & Environmental Assistance. For notices of the latest documents added to the collection, use the following RSS news feeds:

- New Documents - updated continually  
[http://p2pays.org/infohouse/newdoc\\_rss.xml](http://p2pays.org/infohouse/newdoc_rss.xml)
- "Hot Topic" Documents - updated monthly  
[http://p2pays.org/infohouse/hotdoc\\_rss.xml](http://p2pays.org/infohouse/hotdoc_rss.xml)

For more information, visit: [www.p2pays.org/infohouse/](http://www.p2pays.org/infohouse/).

#### MA TURI Library

The TURI Library Catalog includes information on P2, environmental management, hazardous chemicals and alternatives, innovative technology, industrial processes, public health and safety, and sustainable development. The Library's online public access catalog (OPAC) describes over 14,000 documents. The TURI Library's *Greenlist Bulletin*™ is a free weekly update on reports, journal articles, and web updates.

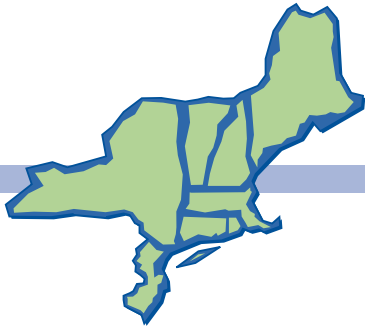
For more information, visit: <http://library.turi.org>.

#### MA TURI Updates

Stay up-to-date on trainings, grants, and news by signing up for email updates; and visit [www.turi.org](http://www.turi.org) to sign up for a monthly newsletter. Also, follow MA TURI Laboratory updates through the "Clean Break" Blog at [www.turicleanbreak.blogspot.com/](http://www.turicleanbreak.blogspot.com/).

**Technical Assistance:** Region 2 has worked directly with lodging facilities interested in using EnergyStar tools to reduce energy consumption and GHGs. Similar efforts have been undertaken in water conservation and solid waste management.

**For more information, contact:** Joseph Bergstein, EPA Region 2 (212) 637-3890; visit [www.epa.gov/region02/p2/](http://www.epa.gov/region02/p2/).



## NORTHEAST ASSISTANCE & P2 ROUNDTABLE

### Puerto Rico Sustainability Conference

NEWMOA held “Expanding Business Value through Pollution Prevention & Sustainable Practices,” on May 18-19, 2010 at the Caribe Hilton Hotel in San Juan, Puerto Rico. The overall purpose of the conference was to foster more sustainable business practices in Puerto Rico and the U.S. Virgin Islands among the manufacturing and hospitality industries.

Conference goals included:

- Giving businesses practical approaches to greening their practices and saving money
- Sharing experiences from industry leaders about how they overcame institutional barriers to sustainability
- Ensuring the health and economic vitality of communities by improving environmental performance

The agenda included manufacturing and hospitality tracks. The conference was organized in association with the Puerto Rico Manufacturers Association

(PRMA) and the Puerto Rico Hotel & Tourism Association (PRHTA). Financial support was provided by EPA Region 2.

**For more information, visit:**

[www.newmoa.org/prevention/cwm/pr/](http://www.newmoa.org/prevention/cwm/pr/).



# EMFACT

Energy & Materials Flow and Cost Tracker

EMFACT™ software addresses the need and opportunity for manufacturers to more effectively implement environmental management accounting as a key tool to aid in setting P2 priorities, identifying value-added opportunities for sustainable production, and implementing materials and energy efficiency improvements. EMFACT™ can be a useful adjunct for compliance assurance, quality management, lean manufacturing, environmental management systems, productivity and resource efficiency improvements, and preventing accidents and losses.

**To download EMFACT™ and supporting materials, visit:** [www.newmoa.org/prevention/emfact/register.cfm](http://www.newmoa.org/prevention/emfact/register.cfm).



## PR Rapid Response

The Rapid Response Service is provided as an aid to locating P2 information and answering technical P2 questions. NEWMOA's engineering staff field questions and, in consultation with other P2Rx Centers, performs research of P2Rx resources and the internet. They then forward any relevant information they find to the person making the request.

**For more information, visit:** [www.newmoa.org/about/library.cfm](http://www.newmoa.org/about/library.cfm), or call (617) 367-8558 x306

## NORTHEAST ASSISTANCE &amp; P2 CALENDAR

TITLE	SPONSOR	DATE / LOCATION	CONTACT
International Symposium on Sustainable Systems & Technology	IEEE	May 17-19; Washington, DC	<a href="http://www.ieee-issst.org">www.ieee-issst.org</a>
Expanding Business Value Through P2 & Sustainable Practices	NEWMOA	May 18-19; San Juan, Puerto Rico	<a href="http://www.newmoa.org/prevention/cwm/pr">www.newmoa.org/prevention/cwm/pr</a>
4th Annual Energy Efficiency Finance Forum	ACEEE	May 20-21; Chicago, IL	<a href="http://www.aceee.org/conf/10finance/10financeindex.htm">www.aceee.org/ conf/10finance/10financeindex.htm</a>
New England Eco-Hospitality Expo	NHLRA	May 25; Concord, NH	<a href="http://www.nhlra.com/index.php?page=eco-expo">www.nhlra.com/index.php?page=eco-expo</a>
2010 National Environmental Partnership Summit	NPPR	May 25-27; Orlando, FL	<a href="http://www.environmentalsummit.org">www.environmentalsummit.org</a>
Electronics Recycling Conference & Expo	International Electronics Recycling	May 26-27; Burlingame, CA	<a href="http://www.electronic recycling expo.com">www.electronic recycling expo.com</a>
Northeast Resource Recovery Association, 29th Annual Conference	NRRA	June 7-8; Manchester, NH	<a href="http://www.nrta.net">www.nrta.net</a>
Resilient Water Management Strategies for a Changing Climate	EPA	June 8-10; New York, NY	<a href="http://epa.blhtech.com/resilientwater-workshop">http://epa.blhtech.com/resilientwater-workshop</a>
East Coast Green Manufacturing Expo	GMX®	June 8-10; New York, NY	<a href="http://www.devicelink.com/expo/gmx10/ny_event.html">www.devicelink.com/expo/gmx10/ ny_event.html</a>
Go Green Expo	CBS Television	June 11-13; Atlanta, GA	<a href="http://www.gogreenexpo.com/events/index.php?evd=20">www.gogreenexpo.com/events/index. php?evd=20</a>
Paper Recycling Conference & Trade Show	GIE	June 13-15; Chicago, IL	<a href="http://www.paperrecyclingconference.com">www.paperrecyclingconference.com</a>
Environment, Energy Security, & Sustainability Symposium & Exhibition	NDIA	June 14-17; Denver, CO	<a href="http://e2s2.ndia.org/Pages/Default.aspx">http://e2s2.ndia.org/Pages/ Default.aspx</a>
Urban Environmental Pollution	Environmental Pollution; Elsevier	June 20-23; Boston, MA	<a href="http://www.uep2010.com">www.uep2010.com</a>
Beyond Green: Sustainability Action Summer Institute	Lowell Center for Sustainable Production	June 21-25; Lowell, MA	<a href="http://www.sustainableproduction.org/proj.summerinstitute.overview.php">www.sustainableproduction.org/proj. summerinstitute.overview.php</a>
2010 Lean & Green Summit	Assoc. for Manufacturing Excellence	July 12-13; Savannah, GA	<a href="http://www.leanandgreensummit.com">www.leanandgreensummit.com</a>
Product Stewardship Institute 6th Annual Forum	PSI	July 20-21; Boston, MA	<a href="http://www.productstewardship.us">www.productstewardship.us</a>
2010 HHW & SQG Conference	NAHMMA	July 26-30; St. Petersburg, FL	<a href="http://www.nahmma.org/displayconvention.cfm">www.nahmma.org/displayconvention.cfm</a>
WasteCon 2010	SWANA	August 15-17; Boston, MA	<a href="http://wastecon.swana.org">wastecon.swana.org</a>
Summer Study on Energy Efficiency in Buildings	ACEEE	August 15-20; Pacific Grove, CA	<a href="http://www.aceee.org/conf/10ss/index.htm">www.aceee.org/conf/10ss/index.htm</a>
Greening Up Your Bottom Line	VTBEP	October 6; Sugarbush Ski Area, VT	<a href="mailto:PCrawford@vtc.vsc.edu">PCrawford@vtc.vsc.edu</a>

For more up-to-date listings of upcoming events, visit [www.newmoa.org](http://www.newmoa.org)



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Officials' Association

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