



# Northeast Assistance & Pollution Prevention News

## FEATURE ARTICLE

### Lean & Clean Manufacturing: Competing Smarter

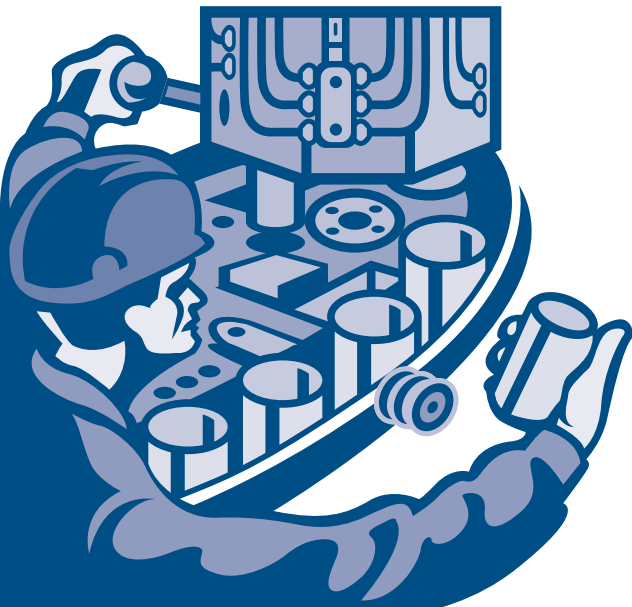
“Lean manufacturing is a systematic approach to identifying and eliminating waste (non-value-added activities) through continuous improvement by flowing the product at the pull of the customer in pursuit of perfection.”  
– The MEP Lean Network

There are many pressures on American businesses today, including increasing global competition, which is leading to the loss of manufacturing jobs in the U.S. Companies must find and eliminate all wastes in order to reduce costs and become more responsive to customer needs. Lean manufacturing practices are becoming a standard way of operating in many companies today. More and more manufacturers are realizing the benefits of this continuous improvement process that is driven by such practices as reduced lot/batch sizes, minimal lead-time, inventory as needed, and elimination of waste.

Lean manufacturing’s philosophy uses manufacturing performance as a competitive weapon. Lean Manufacturing is a systematic approach to identifying and eliminating waste in all phases of the manufacturing enterprise. Companies that successfully eliminate waste experience:

- Reduced lead times
- Reduced finished goods inventories
- Reduced work-in-process inventory
- Reduced costs
- Improved quality
- Reduced cycle times
- Improved on-time performance

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**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 to explore, develop, promote, and implement environmentally sound solutions for the reduction and management of materials and waste, and for the remediation of contaminated sites, in order to achieve a clean and healthy environment. The group fulfills this mission by providing a variety of support services that:

- facilitate communication and cooperation among member states and between the states and the US EPA; and
- support the efficient sharing of state and federal program resources to help avoid duplication of effort and to facilitate development of regional approaches to solving critical environmental problems in the region.

NEWMOA's 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 and Pollution Prevention Roundtable (NEA&P2 Roundtable). This program involves the following components:

- NEA&P2 Roundtable meetings and workgroups
- Regional information resource center and databases
- Research and publications
- Training events
- Regional policy coordination and development.

**For more information contact:**

Terri Goldberg, NEWMOA, (617) 367-8558 x302, tgoldberg@newmoa.org, website - www.newmoa.org.

**Northeast Assistance & Pollution Prevention News**

Northeast Assistance & Pollution Prevention News is published a few times per year by NEWMOA's program, called the Northeast Assistance & Pollution Prevention Roundtable (NEA & P2 Roundtable). The publication is provided free to the Northeast states, EPA, and other interested individuals and is supported by funds from EPA Region I- New England and the Northeast States.

The NEA & P2 Roundtable would like to thank the following people for writing and producing this newsletter: Tom Armstrong, Andy Bray, Pam Civie, Peter Cooke, Peter Crawford, Michael DiGiore, Rob Guillemain, Gary Gulka, Sara Johnson, Susan Langey, Dennis Lucia, Hannah Sarnow, David Sarokin, Kim Trella, Paul Walsh., and Judy Wlodarczyk. Terri Goldberg managed production of the newsletter.

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**Lean & Clean Manufacturing**

*Continued from page 1*

Common lean methods include: Value Stream Mapping, 5S, Total Productive Maintenance (TPM), Cellular Manufacturing, Quick Changeover, Pull/Kanban, Point-of-Use Storage (POUS), and Lean Sigma. Lean fosters a team approach focusing on employee participation across all departments and divisions.

Lean manufacturing goals are business-oriented and focus on reducing non-value added activities. Although lean can produce environmental benefits, lean methods do not explicitly incorporate environmental performance considerations, forgoing some environmental improvement opportunities. Using environmental best practices to eliminate the "other wastes" is the next logical step on the lean journey.

"Clean Manufacturing seeks to continuously improve products and processes to increase a company's competitiveness and lessen its impact on the environment. Clean optimizes use and selection of resources and technologies to aim for elimination of waste." – The MEP Network

"Lean" eliminates	"Clean" adds
Defects	Full use of raw materials
Overproduction	Energy efficiency
Waiting	Water conservation
Non-utilized resources	Elimination of toxic materials
Transportation	Reduction of:
Inventory	• Solid & hazardous waste
Motion	• Emissions to air & water
Extra processing	• Regulatory obligations & risks

**Do Lean & Clean Work?**

The following are examples of how lean and clean have worked for two companies in the Northeast:

**CT Mirror Manufacturer – Reduced Scrap—**

- 50 percent reduction of scrap on one production line
- \$248,000 annual throughput gain
- 25 percent reduction in water usage
- 19 percent reduction in energy, annual savings of \$12,500

**MA Tool Manufacturer – Eliminated Packaging—**

- \$150,000 annual savings by using an adhesive label instead of packaging

- Eliminated 8 tons of packaging
- Increased throughput by automating process due to no packaging

### **Green Suppliers Network**

The *Green Suppliers Network* (GSN) is an innovative industry-government partnership that links the combined resources of multiple aerospace, automotive, healthcare, and office furniture original equipment manufacturers (OEMs) to the Environmental Protection Agency (EPA) and the national network of Manufacturing Extension Partnerships (MEP).

The GSN *Lean and Clean Manufacturing* program is designed to help small and medium-sized manufacturers remain competitive. The GSN program utilizes the core tenets of lean manufacturing to foster bottom-line improvements while optimizing material efficiency and process flow and reducing environmental impacts. The GSN program includes:

- A top-level assessment with estimates of cost saving opportunities
- Value stream and process maps to identify sources of waste
- A facilitated opportunities session
- A final report with recommendations and cost benefit analysis.

Companies who participated in these technical assistance projects have documented a 4:1 return on their investment. The following opportunities were identified for two CT metal finishers who participated in an aerospace pilot program:

- Company A – potential of \$274,000 in annual savings in lean and clean opportunities. Energy consumption reduction recommendations identified a 16 percent reduction in annual bills, \$77,752 annual savings.
- Company B – potential of \$982,000 in annual savings in lean and clean opportunities. Energy consumption reduction recommendations identified an 8 percent reduction in annual bills, \$94,958 annual savings.

The typical implementation cost for this program is \$7,000, nominal compared to the benefits. EPA has committed financial support for a limited time and budget of \$2,500 on a first-come-first serve basis for companies in the designated industries with fewer than 500 employees per facility.

Combining lean and clean manufacturing practices in such programs as the Green Suppliers Network can raise the awareness of the relationship between lean and environmental performance and its potential to reduce the environmental footprint of manufacturing.

**For more information contact:** Judy Wlodarczyk, CONNSTEP, Inc. (860) 644-9718, jwloadarc@connstep.org

### **MASSACHUSETTS**

The Executive Office of Environmental Affairs' (EOEA) Lean and Green Initiative is designed to streamline environmental regulations while ensuring continued environmental protection – enforcement will focus on high-risk activities and “bad actors.” In addition, the initiative promotes the adoption of new and local environmental technologies. Efforts are underway to identify business sectors where a new and innovative approach to permitting could prove effective. The Environmental Results Program (ERP) provides alternative compliance strategies for certain sectors and environmental issues, keeping with the Lean and Green agenda.

The MA Executive Office of Environmental Affairs (EOEA) has identified the biotechnology industry as one of the sectors for the new ERP, which ties into the state's overall Biotechnology Economic Development Initiative. A central component of the biotech initiative will rely on a robust education and technical assistance program that will:

- increase communities' knowledge of and ability to work with the biotechnology sector;
- identify appropriate sites for biotechnology facilities; and
- assist municipalities in becoming “Biotech Ready.”

As part of this effort, EOEA is charging the Massachusetts Office of Technical Assistance (OTA) with a lead role working with the Massachusetts Biotechnology Council, the Department of Business and Technology, and such organizations as the Regional Competitiveness Councils to develop and deliver a technical assistance program for municipal boards and officials.

**For more information contact:** Paul Richard, MA OTA (617) 727-3260, paul.richard@state.ma.us; visit <http://www.mass.gov/ota>.

**VERMONT**

The Vermont Manufacturing Extension Center (VMEC) does not just teach lean manufacturing. The VMEC team is committed to transferring knowledge and experience with lean for systematic project planning and detailed implementation support for lean projects. Through this commitment, the VMEC team enables companies to successfully initiate lean transformations and progress on their lean journey.

Over 3,000 Vermont manufacturing employees (shop floor to top management) have taken the lean manufacturing courses offered by VMEC in the three years the courses have been offered. The courses can dramatically reduce work in process, stuck on the shop floor, and inventory overstock, as well as general waste.

VMEC augments its broad offering of lean workshops with onsite assistance to Vermont manufacturing companies, with three levels of involvement as described below:

Onsite Training in Lean Principles & Techniques

VMEC can conduct any of its workshops at an in-house facility and can customize the material to maximize the benefit to employees. At this level, VMEC trains employees to execute the improvements with internal resources. The workshop topics include: Principles of Lean Manufacturing; Value Stream Mapping; Set-up Reduction; 5S; Visual Organization; and Total Productive Maintenance.

Onsite Training with Implementation Assistance

VMEC can help organize lean projects and provide ongoing advisory follow-up services as the project unfolds.

Full Implementation Service

VMEC staff also works closely with onsite teams to execute the planned project. This option helps a company with limited staff to manage lean improvements and maintain momentum.

*For more information visit:* [www.vmec.org](http://www.vmec.org).

**ENVIRONMENTAL PROTECTION AGENCY**

The EPA has begun expanding its interest in lean manufacturing and is involved in several efforts to explore the intersection between lean and green. An overview of their efforts is available at [http://www.epa.gov/innovation/leanfs\\_environment.pdf](http://www.epa.gov/innovation/leanfs_environment.pdf).

As described above, the EPA's Green Suppliers Network works with major manufacturing firms to green the supply chain by applying lean manufacturing techniques. EPA works in close partnership with NIST MEP's (Manufacturing Extension Partnerships) to implement the GSN. For more information on the GSN visit <http://www.epa.gov/p2/programs/gsn.htm>.

The US EPA Office of Policy, Economics and Innovation (OPEI) has convened a Lean Manufacturing Steering Committee at EPA to explore new initiatives. Several states participate in the Committee. Others interested in participation should contact Mitch Kidwell, EPA OPEI, [kidwell.mitch@epa.gov](mailto:kidwell.mitch@epa.gov).

An initial effort of the Steering Committee was a review of the strengths and weaknesses of the lean manufacturing approach from the vantage point of environmental protection. The resulting report won a much-heralded Shingo Prize (which has been dubbed the Nobel Prize of Lean Manufacturing). The report, "Lean Manufacturing and the Environment" is available at <http://www.epa.gov/innovation/leanreport.pdf>.

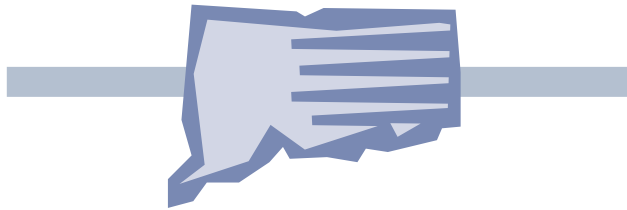
There are numerous dialogues underway with companies and facilities in the federal sector. The conversations serve the purpose not only of learning more about lean manufacturing (LM) but exploring possible partnerships with LM practitioners. Members of the Steering Committee have been meeting with Boeing, HNI (formerly, HON) industries, Robins Air Force Base, Army Materiel Command, Baxter Health Care, and a few others. EPA is interested in hearing about other contacts they should be making.

EPA is also exploring the relationship between lean manufacturing and EMS through an initial research effort in the shipbuilding and ship repair sector. For more information contact: Shana Harbour, EPA, [harbour.shana@epa.gov](mailto:harbour.shana@epa.gov).

David Sarokin, EPA Office of Pollution Prevention and Toxics is currently serving as a state/regional liaison on lean manufacturing.

*For more information contact:* David Sarokin, EPA (202) 564-8852, [sarokin.david@epa.gov](mailto:sarokin.david@epa.gov)

## PROGRAM UPDATES



### CONNECTICUT

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

##### ***Pit Stops Guidebook & Workshops***

The CT DEP Office of Pollution Prevention (P2), with funding from EPA revised and enhanced its Pit Stops Fact Sheets for the vehicle services industry to provide up-to-date information about regulations and P2 relevant to this sector. The P2 Office worked with staff from regulatory programs to develop the new fact sheets and present the material in two training sessions. The new Pit Stops guidebook contains 24 fact sheets in a spiral bound book. Other materials developed included a one-page laminated checklist that can be used by the business owner as a quick reference to gauge compliance with certain regulations. The checklist references the fact sheets for additional information.

DEP publicized this workshop to approximately 5,000 licensed vehicle-related facilities in CT, including auto body and repair shops, used and new vehicle dealerships, towing companies, and some vocational-technical schools. The P2 Office also worked with stakeholder organizations, particularly the Connecticut Auto Retailers Association (CAR) in identifying areas of interest for the workshops. DEP held two, three-hour workshops in June 2004. The first, co-sponsored by CAR attracted 95 of their members. The second workshop, held in the evening for non-CAR members, attracted 86 people. At this workshop, there was also a vendor show featuring environmentally preferable products and services.

The format of the two workshops was the same: attendees received a package containing the guidebook, the laminated checklist, and a case study on aqueous parts washers. Inspectors from the DEP Waste, Water and Air

Bureaus, using the checklist as a training tool, conducted the workshop with P2 staff. “Before and after” quizzes were given to participants to assess the effectiveness of the training. Data was also collected from the participants so that P2 staff will be able to do phone follow-ups in September 2004 to see if the participants have implemented any of the information they learned. Initial and follow-up data will be entered into the NEWMOA metrics database.

**For more information contact:** Judith Prill, CT DEP,  
Judith.Prill@po.state.ct.us

##### ***High Performance Schools***

Rebuild America and the US Department of Energy are sponsoring a series of workshops on High Performance Schools around the US. A High Performance Schools conference will be held on October 5<sup>th</sup> in Hartford, CT, at Rensselaer Institute. The all-day event will feature sessions on: HP Design and Process, Lighting, HVAC, Roofing, Commissioning, Indoor Air Quality, and Utility Management.

**For more information contact:** Kim Trella, CT DEP,  
Kim.Trella@po.state.ct.us

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

In response to numerous requests for information on this topic, DEP developed a web page on environmentally-preferable alternatives to toxic household cleaners. The web page shows a cut-away of a house and gives corresponding green “recipes” for each room. To further promote use of these make-your-own alternatives, P2 staff has put on demonstrations at various venues, including health and wellness seminars, cable TV shows, and fairs.

To expand this outreach, the Office of Pollution Prevention is partnering with Hartford Hospital’s Healthy Homes program to promote green cleaning techniques for urban residents with asthma. DEP will be training the program’s outreach workers and will provide them with a cleaning caddy of non-toxic supplies and recipes for 35 families.

In addition, DEP is partnering with the network of hazardous waste officials from CT (HAZNET) and will be producing simple exhibits and sample cleaning caddies for use by municipal recycling and household hazardous waste coordinators doing P2 outreach to community groups.

**For more information contact:** Judith Prill, CT DEP,  
Judith.Prill@po.state.ct.us

**Smart Growth**

The Smart Growth-Hartford 2000 (H2000) Project is a training program in smart growth for urban environmental justice communities. The project includes two days of training and follow-up technical assistance. The Capitol Region Council of Governments (CRCOG) is the technical assistance provider.

Through a Request for Proposal (RFP) process, the Parkville Revitalization Association, a Neighborhood Revitalization Zone (NRZ) in Hartford, was selected to use an area in their neighborhood as the focus for the project. Two trainings sessions have been conducted. One program included a review of smart growth entitled, "Building Blocks of a Livable Community," and a walking audit of the half-mile wide area. The evening concluded with a planning session utilizing large-scale aerial photos of the project area. The technical assistance remains to be completed.

**For more information contact:** Mary Sherwin, CT DEP, Mary.Sherwin@po.state.ct.us.

**CT Climate Change**

Connecticut has begun implementing the 38 greenhouse gas (GHG) reduction measures from the Climate Change Stakeholders Report developed this year and the recent legislation, An Act Concerning Climate Change. A key action item is to investigate the benefits of a fuel switching program at a state facility, where biodiesel would replace conventional diesel for a heating application. Work is also underway to expand climate change education to promote municipal, institutional, and individual participation in addressing climate change.

**For more information contact:** Lynn Stoddard, CT DEP, Lynn.Stoddard@po.state.ct.us

**Hospital Outreach**

Based on a strategic assessment of needs conducted cooperatively with EPA in 2003, DEP is now partnering with Hartford Hospital and Hospitals for a Healthy Environment (H2E) to assist Connecticut hospitals in preventing pollution. The *Connecticut Hospital Environmental Roundtable (CHER)* was formed. The Roundtable will provide opportunities for hospitals to learn from each other by sharing ideas, presenting success stories, keeping up-to-date on available resources, and discussing environmental issues that affect the health care industry. The group will meet quarterly at different host facilities. Meetings are half-day meetings and are hosted by hospitals or other organizations.

In April 2004 the kick-off event was held at Hartford Hospital, with approximately 45 participants representing over 20 hospitals, indicating a fair amount of interest in this effort. The topic was "How Hospitals Can Cut Costs and Reap Additional Benefits through Responsible Waste Management." DEP will continue to provide outreach to the hospital in 2004-05. A November meeting is currently being planned with EPA and the CT Hospital Association. Utilizing information collected at the April meeting, as well as information from EPA and other DEP staff, the topic will focus on RCRA, biomedical waste, and universal waste. A DEP P2 web page with hospital information has been developed and will be posted soon.

**For more information contact:** Nan Peckham, CT DEP, Nan.Peckham@po.state.ct.us

**Capitol Region Bike to Work**

CT DEP is working as part of a consortium of organizations dedicated to encouraging Hartford-area commuters to bike to work. There are nearly 2,000 registered participants to date! The last Friday of each month through biking season an organization sponsors free coffee and bagels for commuters who arrive on bicycle. The effort of these bicyclists translates into several tons of air pollutants avoided, a fact that is promoted during Ozone Awareness Week.

**For more information contact:** David Westcott, CT DEP, David.Westcott@po.state.ct.us

**Garment Care / Dry Cleaners**

Back by popular demand - the CT Korean Dry Cleaners Association requested that CT DEP provide a second environmental workshop for their members. The first workshop was held in 1998. A set of fact sheets has been updated that provides information on regulatory compliance as well as pollution prevention. A training workshop is planned for September 26<sup>th</sup>.

**For more information contact:** David Westcott, CT DEP, David.Westcott@po.state.ct.us



## WEB RESOURCES

This section of the NE Assistance & P2 News lists useful web resources that are focused on the topics of the Feature Article. For more information contact: Andy Bray, NEWMOA (617)367-8558 x306, [abray@newmoa.org](mailto:abray@newmoa.org).

### LEAN MANUFACTURING

#### What is Lean Manufacturing?

<http://www.connstep.org/web/frames.nsf/pages/leanmanufacturing>

Provides a brief, introductory overview of lean manufacturing.

#### Building Lean Enterprise Excellence

<http://www.optiprise.com/index.htm>

This is a consulting firm's site; it is rich in the history and principles of lean. It includes an overview of recognizable lean titles and a "favorite lean readings" section.

#### A Case Study of Creativity & Innovation in Automotive Engineering

[http://www.dig.bris.ac.uk/teaching/m\\_o\\_i/studen10.htm](http://www.dig.bris.ac.uk/teaching/m_o_i/studen10.htm)

This article provides an introduction to the Toyota Production System (TPS), a.k.a, Lean Manufacturing.

#### Lean Manufacturing

<http://www.mamtc.com/lean/index.asp>

This site provides information useful in making decisions about how one might approach implementing lean strategies into business operations.

#### NIST Manufacturing Extension Partnership

<http://www.mep.nist.gov/lean/lean.html>

National Institute of Standards and Technology's Manufacturing Extension Partnership, a network of non-profit organizations dedicated to assisting small manufacturers, provides information on lean manufacturing to improve business.

### ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA)

#### EMA Research & Information Clearinghouse

<http://www.emawebsite.org>

A source of comprehensive information on Environmental Management Accounting (EMA).

#### Environmental Accounting for Competitive Advantage

[http://www.competitive-e.com/Publications/Misc\\_Publication%20pdf/EnviroAccoCompAdvan1999.pdf](http://www.competitive-e.com/Publications/Misc_Publication%20pdf/EnviroAccoCompAdvan1999.pdf)

This chapter of *Environmental Management and Business Strategy: Leadership Skills for the 21<sup>st</sup> Century* discusses Environmental Accounting – its history, precision in data collection, advice for practitioners, making EA systems work, and decision making using EA.

#### The Lean & Green Supply Chain: A Practical Guide for Material Managers & Supply Chain Managers to Reduce Costs and Improve Environmental Performance

[http://www.emawebsite.org/documents/emaric\\_112.pdf](http://www.emawebsite.org/documents/emaric_112.pdf)

This booklet illustrates the efficiency-enhancing opportunities that arise when companies incorporate environmental costs and benefits into mainstream materials and supply chain management decision-making. It provides introductory guidance on how to identify these costs and benefits and how to adjust existing information systems and analysis techniques to better account for this significant category of costs.



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

**Current P2 Activities**

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

- Updating new P2 web site.
- Providing training to auto salvage and auto repair facilities.
- Working with small businesses that report to the Toxics and Hazardous Waste Reduction Program and assisting them with tracking their toxics and hazardous waste reduction, pollution prevention planning, and future reduction.
- Partnering technical assistance with the Public Utilities Commission's small business energy assistance program, the Department of Labor Safetyworks Program, and other small business providers, including SBA, SBDC, and Coastal Enterprises Inc.
- Providing outreach and assistance to small business development centers and small business counselors.
- Establishing further partnerships with business assistance providers.
- Establishing partnerships within the energy efficiency sector and promoting their services to Maine businesses.
- Assisting four companies with the implementation of environmental management systems.
- Conducting onsite compliance assistance utilizing Maine's Small Business Compliance Incentive Policy (SBCIP).
- Continuing to provide assistance to the Green Campus Consortium in their efforts to move towards sustainability.
- Working in conjunction with the Climate Change Steering Committee on the New England Governor's and Eastern Canadian Premiers' initiative to reduce green house gas levels 10 percent under 1990 levels by 2012.
- Continuing to provide assistance to a number of industry sectors.

- Revitalizing the Compliance Advisory Panel (CAP) as an effective tool to weigh in on OIA activities.
- Attended ISO 14001 EMS lead auditor training.
- Attending monthly EPA EMS training.

Maine DEP's Small Business Assistance Program has been working with the auto repair sector, providing compliance assistance and pollution prevention educational outreach. The efforts with this sector have been assisted by the Iowa Waste Reduction Center. The Office is in the process of kicking off an Environmental Results program focusing on auto-body shops that will emphasize compliance self-certification, pollution prevention in application and cleaning techniques, and alternative environmentally friendlier products. This project will focus on the southern Maine region.

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



**Massachusetts Department of Environmental Protection (MA DEP)**

**Toxics Use Reduction Leader**

More than a dozen years after the Toxics Use Reduction Act (TURA) became law, Massachusetts is still on the cutting edge of reducing toxic chemical use and waste. In its most recent annual report, the Massachusetts Department of Environmental Protection (DEP) documents that under TURA, major chemical-using facilities in the state have continued to reduce their reliance on toxic chemicals.

TURA progress has historically been measured by using data (excluding trade secret data) normalized for changes in production that is reported by a core group of TURA facilities that were subject to reporting in 1990 and continue to report today. Originally, the 1990 Core Group represented nearly 100 percent of TURA chemi-



cal use in Massachusetts. However, because certain chemicals and industry groups were added to the TURA program after 1990, the 1990 core group now represents only about half of all current reported toxics use. Therefore, a new Core Group has been created to more accurately represent progress within the TURA reporting universe from a 2000 baseline year.

In 2002, the new core Group used 989 million pounds, or 99 percent of the total toxic chemicals reported. Adjusting the data to account for a 10 percent decrease in production from 2000 to 2002, the new Core Group facilities reduced:

- Toxic chemical use by 6 percent,
- Toxic byproducts by 9 percent,
- Quantities of toxics shipped in product by 14 percent,
- On-Site releases of toxics to the environment by 21 percent, and
- Transfers of toxics off-site for further waste-management by 17 percent.

By comparison, the 1990 Core Group used 532 million pounds in 2002, or 53 percent of the total toxic chemicals reported. Adjusting the data to account for a 22 percent increase in production from 1990 to 2002, the 1990 Core Group facilities reduced:

- Toxic chemical use by 42 percent,
- Toxic byproducts by 67 percent,
- Quantities of toxics shipped in product by 58 percent,
- On-site releases of toxics to the environment by 92 percent, and
- Transfers of toxics off-site for further waste management by 54 percent.

2002 was the third year that TURA facilities reported on chemicals now classified as persistent, bioaccumulative, toxic (PBT) chemicals by the Environmental Protection Agency (EPA) under the Toxics Release Inventory (TRI) Program. PBT chemicals are of special concern because they are highly toxic, remain in the environment for long periods of time, are not readily destroyed, and build up in the food chain. The most widely reported PBTs are polycyclic aromatic compounds, benzo(g,h,i)perylene, lead, and lead compounds.

**For more information contact:** TURA Program (617) 556-1011; visit [www.mass.gov/dep/bwp/dhm/tura](http://www.mass.gov/dep/bwp/dhm/tura) or [www.turi.org/turdata](http://www.turi.org/turdata)

### **TURA Electronic Reporting Grows**

The MA DEP reports that 15 percent of the Massachusetts companies subject to the Toxics Use Reduction Act (TURA) completed and submitted their 2003 reporting and planning forms electronically, using the Agency's eDEP online interface. A total of 109 TURA filers took advantage of Web-based reporting, more than quadrupling the previous year's electronic submissions.

The 2003 reporting year was the first when all reporting and planning forms could be filed online. In cooperation with the Environmental Protection Agency (EPA) and the state Office of Technical Assistance (OTA), DEP conducted four electronic filing training sessions across the state attended by some 250 TURA filers and planners.

**For more information contact:** Walter Hope, MA DEP (617) 292-5982; visit <http://www.mass.gov/dep/bwp/dhm/tura>

### **Massachusetts Office of Technical Assistance (MA OTA)**

#### **Trichloroethylene (TCE) Use Reduction**

MA OTA and the Massachusetts Toxic Use Reduction Institute (TURI) have completed year one of a grant from the EPA to assess trichloroethylene (TCE) use among smaller Massachusetts businesses. The grant targets small business because they often do not have the expertise within the company to address process engineering and chemical input substitution changes. Most users of TCE in Massachusetts use the solvent in cleaning and degreasing applications to remove contaminants from their products during manufacture.

Current Massachusetts users of TCE were identified and offered assistance in reducing or substituting TCE with less toxic alternatives. Joint OTA/TURI site visits resulted from the outreach efforts. Following the site visits, alternative cleaners were tested for these companies in the TURI Surface Solutions Laboratory. Satisfactory non-chlorinated solvent alternatives were identified for all of their applications, and the results reported to the companies. To date, some of the companies have undertaken pilot testing of the alternatives at their plants.

A year is a very short time for companies to develop and implement substitution strategies for TCE. To continue the momentum built up under the grant, OTA/TURI received a second year of funding to continue to approach companies with offers of technical assistance, sponsor two workshops to educate TCE users on MACT standards and alternatives to using TCE, assess reduction in TCE

use from successful implementation of alternatives, and prepare a report on this project.

OTA will be seeking assistance, through a contractor, with collecting and assessing information pertaining to the technical, economic, or other barriers to reducing the use of TCE in Massachusetts. The hope is that the contract start date will be October 2004 and take approximately 3-4 months to complete, so that results will be published early next year.

**For more information contact:** Rich Bizzozero, MA OTA (617) 626-1080, Rich.Bizzozero@state.ma.us

**Clarifying Paper & Textile Effluent**

A pilot unit to test the technical feasibility of using hydrogen peroxide with TAML® activator is under construction at the Advanced Technology & Manufacturing Center at UMass-Dartmouth. Field trials with manufacturing facilities are expected to begin in December 2004. The project is currently soliciting companies in paper and textile industries that have color issues with their wastewater effluents to participate in the trials.

The TAML® activator or catalyst was developed by investigators at Carnegie Mellon University. With this activator, new chemical pathways to implement advanced oxidation processes using hydrogen peroxide have been discovered. The removal of colors from effluents of paper and textile mills can result in economically advantageous conservation of water, process chemicals, and energy. This promising new approach should also be a more environmentally friendly alternative to chlorine-based oxidants, which could produce persistent organic halides or dioxin.

**For more information contact:** Gus Ogunbameru, MA OTA (617) 626-1065, augustus.ogunbameru@state.ma.us

**Massachusetts Toxics Use Reduction Institute (MATURI)**

**EMS Fast Track in Biotechnology**

Although there are many competing priorities in running a business, especially in lean times, Millipore recognized that a coherent EMS would help them save money, avoid risk, and improve their company's image. These reasons, along with the drive to run a sustainable and environmentally responsible business, helped Millipore's senior management see the business value of developing and implementing an EMS for its Massachusetts facilities.

Millipore is a multinational, high technology bioscience company that provides technologies, tools, and services for the development and production of new therapeutic drugs.

Headquartered in Billerica, Massachusetts, Millipore serves the worldwide life science research, biotechnology, and pharmaceutical industries. The company has a strong corporate culture of environmental stewardship and social responsibility. Millipore employs 4,200 people in 7 manufacturing plants and more than 31 offices around the world.

Millipore was selected to receive a Matching Grant and host the Toxics Use Reduction Institute's Industry EMS Peer Mentoring Work Group for fiscal year 2004. As part of this year's Peer Mentoring Work Group, Millipore's charge was to share its experience as a leader in the environmental arena and solicit advice and feedback from the members of the group. In addition, Millipore was expected to pursue aggressively its goal of achieving ISO 14001 certification for its chemical-intensive facility in Bedford, Massachusetts by 2005. After just nine months, Millipore is 80 percent complete towards achieving an ISO 14001 certifiable system. This fast track approach has been challenging, and has at the same time resulted in obvious environmental and cost benefits to the facility.

The 2004 Industry EMS Peer Mentoring Work Group hosted by Millipore had participants from many companies in the biotechnology and high technology sectors. Participants included Genzyme Corporation, Avectia Biotechnology, Abbott Laboratories/MediSense Products, Applied Biosystems, Polaroid, and General Electric Aircraft Engines. Millipore counts its involvement in this group as one of the highlights of its accomplishments with respect to its EMS goals in the past year. The opportunity to learn from peers while aggressively pursuing ISO 14001 certification was invaluable to the success of its process.

Other accomplishments that Millipore has achieved during the course of its first year in developing and implementing an EMS at its Bedford Massachusetts facility include:

- Created ISO implementation teams that combine environmental, health, and safety staff; quality assurance/quality control staff; and facilities staff to address specific aspects of the facility's EMS development. Those teams have a total membership of 20 people, ranging from plant managers through middle management down to boiler technicians. Teams meet on a weekly or bi-weekly basis to discuss progress on identified projects and set goals for continual improvement. Three major teams are:
  - Water reduction
  - Wastewater treatment, and
  - Raw material reduction.

These teams identify projects that directly relate to the facility's significant impacts in order to achieve quick payback on implemented activities.

- Conducted general awareness training for virtually all employees at the Bedford facility. More in-depth training was provided for middle and senior facility management. As a result of this training, the company experiences a level of support that goes beyond Millipore's traditional belief in environmental responsibility, to a depth of supervisory understanding that initiates rapid and meaningful change in procedures and processes.
- Provided internal auditor training for a number of ISO team members. This training was held at Millipore's headquarters facility. Offered by the Toxics Use Reduction Institute to increase the effective use of EMS, the program encourages continual improvement in toxics use reduction and environmental stewardship. The training was open to the general public, and representatives from government, industry, and consulting firms attended this one day event.
- Implemented several projects as a result of the work of the ISO teams and Millipore's commitment to environmental stewardship. These projects include:
  - Methanol Recovery System – A state-of-the-art methanol recovery distillation column was built and put on-line in an effort to reduce significantly the amount of methanol purchased at this facility. Millipore expects to recover over 100,000 gallons of methanol for reuse each year.
  - De-Ionized (DI) Water System Upgrade – Millipore relies on DI water in its manufacturing process to assure the quality of its many products. The Water Reduction Team identified two DI water projects to improve the quality and consistency of the facility's DI water supply while reducing the amount of water and energy required to operate the system.
  - Prioritized Chemical Usage System – Millipore has expanded its TURI activities to include a systematic evaluation of all chemical usage at the Bedford facility. In conjunction with careful monitoring of chemical usage throughout the facility, Millipore is developing a systematic approach for identifying priority chemicals for use reduction projects.

Millipore's European facilities and its facility in Jaffrey, New Hampshire have had ISO 14001 certifications for more than five years. It was partially their successful examples that prompted Millipore to pursue EMS at its Massachusetts facilities. The Cork Ireland facility, in particular, has demonstrated that effective implementation of an EMS can lead to increased environmental awareness and willingness to push the envelope. This facility has used its EMS experience to successfully promote Lean Manufacturing ethics in the workplace, significantly reducing waste throughout the production process. Millipore's Bedford facility has identified that subsequent to acquiring ISO 14001 certification for its EMS, it will pursue the implementation of Lean Manufacturing as the logical next step in its progress towards a dynamic and thriving business that has minimal impact on the environment.

**For more information contact:** Pam Civie, MA TURI  
(978) 934-3142, pcivie@turi.org



## NEW HAMPSHIRE

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

#### **Healthcare Project**

New Hampshire Hospitals for a Healthy Environment hosted a Small Quantity Generator Training to healthcare facilities in June 2004. The training covered the general rules associated with being a hazardous waste generator, such as storage and labeling, but also covered healthcare specific guidelines on managing epinephrine, a P-listed waste, and unused chemotherapy formulations in IV bags.

**For more information contact:** Sara Johnson, NH DES  
(603) 271-6460, sjohnson@des.state.nh.us; visit [http://www.des.nh.gov/nhppp/Healthcare\\_P2/PListGuidelines.pdf](http://www.des.nh.gov/nhppp/Healthcare_P2/PListGuidelines.pdf)

**Pollution Prevention Internship**

The University of New Hampshire and Department of Environmental Services has recently been recognized for their efforts on the P2 Internship Program (P2I). The P2I Program pairs engineering students with sponsors in local businesses and government agencies. After receiving training, the students apply the latest techniques and design methods to promote source reduction, risk reduction, and energy efficiency at their sponsors.

In April 2004, the P2I Program received an Environmental Merit Award from EPA Region 1-NE. In September 2004, P2I Program will receive a Most Valuable Pollution Prevention Award from the National Pollution Prevention Roundtable. Since its creation in 1993, the P2I Program has placed approximately 93 interns at 48 facilities. Based on conservative estimates, the program has saved participating companies a total of more than \$3 million per year.

**For more information contact:** Sara Johnson, NH DES (603)-271-6460, [sjohnson@des.state.nh.us](mailto:sjohnson@des.state.nh.us); Dr. Ihab Farag, UNH (603) 862-2313, [ihab.farag@unh.edu](mailto:ihab.farag@unh.edu)

**Green Yards**

After much anticipation and strategizing, the New Hampshire Green Yards Program web page is up and running. The web page covers the Green Yards Program, describes the steps in auto recycling, and discusses environmental concerns and best management practices. The most recent addition to the web page is the distribution map of salvage yards in New Hampshire.

**For more information contact:** Paul Lockwood, NH DES (603) 271-2956, [plockwood@des.state.nh.us](mailto:plockwood@des.state.nh.us); visit <http://www.des.nh.gov/SW/Greenyards/>

**Green Paint Program**

The Household Hazardous Waste Program has initiated a "green" paint public-private education campaign on the proper methods of disposing of surplus household and commercial paint. The campaign, a partnership between DES and paint retail stores in New Hampshire, has begun distributing informational materials to educate consumers at the point-of-purchase about the possible disposal problem that can result from unwanted leftover paint.

Due to the way paint is packaged, priced, and used, the consumer generally purchases more paint than they need and ends up with leftover paint. There is a tendency for the homeowner to hang on to leftover paint "just in case" they may need some for a touch up job in the future and because there may not be a convenient disposal option.

Eventually, the paint is brought to a household hazardous waste (HHW) collection event and results in large financial costs to the municipalities and the HHW grant program.

**For more information contact:** Melanie Wheeler, NH DES (603) 271-2047, [mwheeler@des.state.nh.us](mailto:mwheeler@des.state.nh.us)

**Occupational Safety & Health Consultation Service**

A new program at DES provides free on-site health and safety services to eligible employers. Although the Consultation Service is primarily targeted to small businesses, the program will assist employers of any size. Whether an employer has a question about the safe use of a specific piece of equipment or would like information about establishing a workplace safety program at a work site, program staff is available to provide consultation to employers seeking such assistance.

The NHPPP has been working with the Consultation Service over the past few years when they were located at the Department of Health and Human Services. By having the Consultation Service at DES, the two programs hope to strengthen their partnership by hosting workshops, joint site assessments, and making the connection between pollution prevention and safety and health issues at manufacturing facilities.

**For more information contact:** Sara Johnson, NH DES (603) 271-6460, [sjohnson@des.state.nh.us](mailto:sjohnson@des.state.nh.us)



The Northeast Assistance and 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. Current P2Rx projects include online Topic Hubs and a National Assistance Programs Database. For information about these efforts, visit <http://www.newmoa.org/prevention>.

**For more information contact:** Andy Bray, NEWMOA (617) 367-8558 x306, [abray@newmoa.org](mailto:abray@newmoa.org)



## NEW JERSEY

### **New Jersey Department of Environmental Protection (NJ DEP)**

In June 2004, the Office of Pollution Prevention and Right to Know released a report entitled *Industrial Pollution Prevention in New Jersey: A Trends Analysis of Materials Accounting Data From 1994 to 2001 and An Annual Report for 2001*.

New Jersey is one of only two states that require industries to prepare what is referred to as facility-level materials accounting data, which provides a complete view of hazardous substances used in manufacturing operations. This unique information provides insight into pollution prevention progress and potential public health exposure concerns not seen in other data, such as the annual Toxic Release Inventory (TRI). The report also tracks three separate groups of chemicals of concern: carcinogens; persistent, bioaccumulative, toxic substances; and extraordinarily hazardous substances. Tracking these chemicals separately helps NJ DEP's enforcement and permitting programs and keeps the public informed about trends for these important chemicals.

In terms of statewide trends from 1994 to 2001, a substantial decrease was identified in hazardous substances generated as waste and released into the environment during production activity at facilities in New Jersey. Even though production levels increased by 10 percent, facilities decreased their waste (or non-product output) generation by 26 percent from 1994 to 2001. The amount of this waste released into the environment decreased by 58 percent in this same time period from 13.7 to 5.7 million pounds. By comparison, national total on-site releases for the same period decreased by 40 percent. It is evident that New Jersey facilities have reduced releases more than the national average.

On-site releases of carcinogens decreased by 68 percent, or 1.6 million pounds between 1994 and 2001 using unadjusted quantities. In 2001, carcinogens accounted for 15 percent of statewide releases, or 828,080 pounds out of 5.5

million pounds. The air emissions in 2001 accounted for more than 90 percent of the releases of carcinogens.

New Jersey facilities have made less progress from 1994 to 2001 reducing the use of hazardous substances compared to the reductions in the amount of waste generated or released to the environment. Facilities actually increased the use of hazardous substances by 8 percent, from 13.8 to 14.9 billion pounds, even though they are using substances more efficiently. The increases in production outpaced efficiencies employed, so total use rose.

While there is a clear downward trend in overall waste generation and releases statewide, there are instances where increases are taking place. Of the 197 core chemicals tracked, the following trends were seen: use of 63 chemicals increased (32 percent); waste of 67 chemicals increased (34 percent); and on-site releases of 43 chemicals increased (22 percent). An analysis of specific facilities shows a similar distribution of increases. This analysis shows that numerous facilities reported increases in use (24 percent), waste generation (23 percent), and releases to the environment (16 percent) of hazardous substances. It is important to document where these increases took place and whether they create localized affects to human health and the environment.

The lack of progress in reducing the use of hazardous substances is due to the fact that this measure is dominated by the quantity of chemicals shipped as, or in, products. In 2001, hazardous substances shipped as products accounted for 87 percent of all hazardous substances used. Between 1994 and 2001, hazardous substances shipped as product increased by 15 percent. Such industries as petroleum refineries and metal fabrication account for more than 90 percent of the quantities in products. These types of facilities have limited options for reducing use compared to other types of industries. Statewide trends are often driven by changes at a few large facilities. This is particularly true for hazardous substance use, which is dominated by petroleum refineries, metal manufacturers, and a few large plastics and chemical manufacturers. Increases in use by the top 10 facilities mask decreases in use achieved by all other facilities combined. If the top 10 facilities were excluded from the analysis, statewide use would show a decrease of 10 percent instead of the 8 percent increase.

Reductions in releases, on the other hand, are more often attributed to the combined actions of several smaller facilities. Changes by the top 10 facilities account for approximately 46 percent of the statewide release

reductions. This means that the remaining universe of facilities has contributed more to statewide release reductions than the top 10 facilities. In the last trend analysis by DEP, facilities decreased waste generation by at least 50 percent between 1987 and 1994.

Data are submitted by facilities under the Worker and Community Right to Know (W&CRTK) Act and Pollution Prevention Act (P2 Act). New Jersey's materials accounting data includes facilities that report approximately 20 different quantities that constitute a complete accounting for their hazardous substances.

DEP began using facility information to identify potential public health risks in the state in 2002. The first enforcement action occurred at a facility in Newark because it was the state's largest emitter of hydrazine, a carcinogenic air pollutant. The facility chose to shut down its operations later that same year. In addition, DEP targeted the top 25 facilities releasing toxic substances. One result was the investigation of all boat manufacturers using styrene, another carcinogen. Based on these efforts, the industry reformulated to reduce the styrene emissions to below levels that would represent a health concern. Over the past two years, DEP conducted two geographic-based enforcement sweeps in Camden and Paterson, urban areas of the state where residents were concerned about the impact of various industrial facilities on their children. New data was used to target facilities within these municipalities.

**For more information visit:** [www.nj.gov/dep/opppc/reports.html](http://www.nj.gov/dep/opppc/reports.html)



**NEW YORK**

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

**Mercury Legislation**

On July 12, 2004 New York State joined a growing number of other states in adopting legislation that recognizes the importance of labeling and responsibly

managing waste from mercury-added products. The new law stipulates the following: products with mercury content must be labeled; waste from products containing mercury must not be incinerated; waste from products containing mercury must be managed separately from other solid waste according to regulations to be developed by NYS DEC; New York State participation in IMERC is endorsed; sales of mercury thermometers and novelty products containing mercury are restricted; purchase and use of elemental mercury by primary and secondary schools is prohibited; sales of elemental mercury except for specific research, dental, and manufacturing uses are limited; and an advisory committee will be appointed and will make recommendations to reduce mercury pollution.

**For more information contact:** NYS DEC P2 Unit (518) 402-8705

**Environmental Leaders Program**

The NYS DEC, as directed by the draft Commissioner's Policy on Environmental Management Systems (EMS), is developing an Environmental Leaders Program to encourage EMSs. An EMS Policy was signed by Commissioner Crotty on April 5, 2004. The Commissioner's Policy requires Department programs to promote EMSs that consider the following: views of stakeholders; measurable performance; credibility; and public disclosure and communication. Additional information on this policy is available at: <http://www.dec.state.ny.us/website/ppu/p2ems.html>.

A meeting was held with the NY members of the EPA's Performance Track program June 8, 2004 to get stakeholder input on the design of this program. In addition to the Performance Track members, staff from the Department and EPA were among the 30 attendees. Staff has also begun work on a survey that will be used to gather input from a diverse group of stakeholders. The results of this survey will be used to inform the agenda for other stakeholder meetings. It is likely that stakeholder meetings will be held in Albany, Rochester, and New York City. Staff will be providing an update on the program and soliciting input at the Business Council's Environment Conference on October 7th or 8th.

**Environmental Excellence Awards**

The Department has developed an Environmental Excellence Awards program. These Environmental Excellence Awards recognize industry, government, and non-government organizations for innovative and sustainable practices benefiting the environment. Over 80 applications were received by the Department through July 15, 2004. The applications will be reviewed by an

external advisory committee that will recommend award winners to the Commissioner.

**For more information visit:** [www.dec.state.ny.us/website](http://www.dec.state.ny.us/website)

### **Ski Facilities**

The Pollution Prevention Ski video is completed, and work is progressing on the development of a companion guide/checklist to supplement the information presented in the video.

**For more information contact:** Sarah Evans, NYS DEC (518) 402-9469, [shevane@gw.dec.state.ny.us](mailto:shevane@gw.dec.state.ny.us)

### **Hospitals**

The “Environmental Compliance and Pollution Prevention Guide for Healthcare Facilities” has been finalized and is posted on the NYS DEC website under the healthcare industry sector. Staff continues to work on a healthcare compliance checklist to complement the Guide. The checklist will include references to federal and New York state regulations that apply to the healthcare industry.

**For more information contact:** Dennis Lucia, NYS DEC (518) 402-2553



## **RHODE ISLAND**

### **Rhode Island Department of Environmental Management (RI DEM)**

#### **Auto Salvage Yard Certification Program**

The Department of Environmental Management has been awarded an Innovations Grant by the Environmental Protection Agency, for the development of a voluntary Environmental Results Program (ERP) for auto salvage yards. The project is entitled, “Auto Salvage Environmental Results Program: Improved Compliance and Performance Through Innovation.”

Rhode Island’s auto salvage yard industry has historically been under-regulated, due to agency resource limitations. Site inspections and enforcement activities have been sporadic, limited to responding to specific complaints

about facilities, and audits of major recycling operations where incidents of environmental contamination were found to occur. Responses to complaints have generally resulted in a single media inspection and enforcement response to the specific problem reported, rather than using a multi-media approach that allows for review and response to cross-media impacts.

Many auto salvage yards are in close proximity to residential areas and in areas that present rather unique land use conflicts. Some are found in communities where residents must rely on private wells due to the lack of public water supplies, thus presenting potential critical outcomes from groundwater contamination. The proposed ERP approach that will be used is unique, as it will allow DEM, for the first time, to take a comprehensive, multi-media sector-based approach to environmental compliance and pollution prevention in the auto salvage yard industry.

DEM’s objective for this project is to reduce environmental and health risks by improving environmental regulatory effectiveness and industry compliance through an ERP that will offer a comprehensive, statewide multi-media program, particularly relating to RCRA (solid and hazardous waste), air, and water regulatory compliance.

By state law, auto salvage yards are required to be licensed by the Rhode Island Department of Business Regulation (DBR) and comply with associated requirements. There are currently 85 licensed auto salvage yards in 26 Rhode Island communities. Of the 39 communities in Rhode Island, 13 do not have auto salvage yards within their boundaries. RI General Laws allow for local control by affording communities the opportunity, by ordinance, to issue and revoke local licenses to persons establishing, operating, and maintaining auto salvage yards.

Auto salvage yards are found in all settings — urban, suburban, and rural communities in Rhode Island — which each have some different areas of major concern. To maximize expertise that is available in the project through the grant, DEM will partner with the University of Rhode Island Center for Pollution Prevention & Environmental Health, Narragansett Bay Commission (NBC) Pollution Prevention Program, and Brown University Center for Environmental Studies.

As with other ERP projects in place or under development in Rhode Island, this project will include:

- A stakeholder process that will include representatives from state and local government, EPA, and the auto salvage industry
- Identification of Environmental Business Practice

Indicators (EBPI's) that will provide a snapshot as to both compliance status and overall environmental performance of facilities and the sector as a whole

- Identification of performance measurements and environmental outcomes that will result from implementation of the project
- Baseline facility audits to determine and document conditions prior to implementation of the project
- An easy-to-read certification workbook and certification checklist
- Free environmental compliance and pollution prevention technical assistance to participants
- Post-certification facility audits to document results and impacts from the project
- Statistical analysis, performance measurement, and reporting of the project's results.

DEM anticipates that the project will continue beyond the grant period, with voluntary self-certification to be conducted every two years and performance measurement statistics tracking all future progress in this sector.

**Other ERP Projects**

In addition to ongoing projects and P2 activities, RI DEM staff members are also working on planning and designing other certification programs, including certification by exterior lead paint removal contractors and certification of operators of facilities with underground storage tanks (this will include both Stage I & Stage II certification).

**For more information, contact:** Thomas E. Armstrong, RI DEM (401) 222-4700 x4412, Thomas.Armstrong@dem.ri.gov



VERMONT

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

**Hazardous Waste Workshops**

DEC is sponsoring a series of five workshops throughout the state for conditionally exempt hazardous waste generators in October. This workshop series has been an

annual event that is rotated to different towns and cities each year. A basic overview of hazardous waste regulations, pollution prevention, and available technical assistance resources is provided. This is a collaborative effort of DEC and the Vermont Small Business Development Center.

**Dental Amalgam Separator Pilot Project**

DEC is releasing its dental amalgam separator pilot project report in which six amalgam separators were field tested. The report will be available on line at [www.mercvt.org](http://www.mercvt.org) on the dental section of the site.

**Fluorescent Lamp Recycling**

DEC is currently working with a retail hardware store chain in Vermont to establish a two-year pilot program for the collection of small quantities of fluorescent lamps and tubes. Under the pilot project, funding would be provided to the hardware chain for lamp collection, transport, and recycling. This program would potentially provided convenient year-round collection for residential and small business generators of fluorescents throughout the state.

**Assistance to the Granite Industry**

DEC and other assistance providers are collaborating on a joint project to provide assistance to the granite industry in Barre, Vermont in areas of manufacturing process improvements, energy efficiency, environmental compliance, and pollution prevention. Two facilities will receive comprehensive on-site assessments and reviews in these areas. It is hoped that the findings in this study will serve the industry and its 35 members as a whole in finding ways to remain competitive. Other partners in the project include Efficiency Vermont, Vermont Manufacturing Extension Center, Vermont Small Business Development Center, and Vermont Department of Economic Development.

**Vehicle Service Sector Outreach**

As part of the voluntary Vermont Business Environmental Partnership, DEC is offering a compliance incentive to vehicle service facilities that meet beyond compliance best management practices and can demonstrate compliance with environmental regulations through an on-site assessment. Facilities can be designated as a "low-priority" for environmental regulatory inspections by meeting the program standards and maintaining their environmental management program. Targeted facilities for the two-year pilot program include private vehicle service and repair facilities and auto dealerships.

**For more information contact:** Gary Gulka, VT DEC (802) 241-3626, [gary.gulka@anr.state.vt.us](mailto:gary.gulka@anr.state.vt.us)

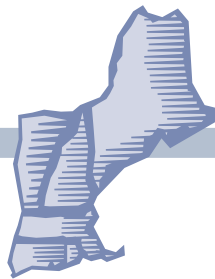


### **Vermont Small Business Development Center (VTSBDC)**

Since October 1, 2003, the Vermont SBDC Environmental Assistance program has delivered a total of 26 on-site assistance assessments, including 10 small business energy efficiency assessments and 16 VT Business Environmental Partnership environmental opportunity assessments. These assessments resulted in nine Environmental Partners and two Green Hotels.

Additionally, of the approximately 220 environmental management and energy efficiency recommendations for improvement, over 62 recommendations were implemented and another 38 planned. An annual impact survey will be sent out to participants at the end of the federal fiscal year. Numerous assessments were conducted in cooperation with the resources partners including Efficiency Vermont, the VT DEC, and Solid Waste Districts.

**For more information contact:** Peter Crawford, VT SBDC (802) 728-1423



## **EPA REGION 1 - NEW ENGLAND**

### **Environmental Management Systems (EMS)**

On July 12, the EPA Boston Office EMS Team and the EMS Board of Directors held the first EMS Management Review. This process completes the first full cycle of the EMS development process. Now the EMS moves into the continuing improvement stage and preparation for a formal EMS audit and certification by EPA Headquarters. In preparation for this, the EMS team and the Green Team will be working over the next few months to make improvements to the EMS as recommended by internal auditors. These will include updating the EMS Policy; reviewing the list of significant environmental impacts; updating EMS goals and objectives; and reviewing and verifying operational controls, compliance, and communication and awareness programs.

**For more information contact:** Jean Holbrook, EPA Region 1-NE (617) 918-1816, holbrook.jean@epa.gov

### **Greening the Convention**

The Coalition for Environmentally Responsible Conventions (CERC) helped reduce the environmental impact of the Democratic National Convention by organizing a number of projects, including food management and composting, credits for offsetting 27,000 tons of CO<sub>2</sub> emissions, transportation by fuel-cell buses, fuel-cell electricity generation, anti-idling campaigns for tour buses, a Green Hotel workshop, and reuse and recycling programs. During the week of July 26, CERC's events included a Green Building Tour, a Harbor Cruise to a Wind Turbine, and a "Walk Boston" event that encouraged delegates to walk to the Convention. CERC is also working with the Republican National Convention to "green" their event in New York City. More information and a listing of news coverage can be found at [www.cerc04.org](http://www.cerc04.org).

**For more information contact:** Cynthia Greene, EPA Region 1-NE (617) 918-1813, greene.cynthia@epa.gov

### **Lean Manufacturing Training**

On June 29 and 30, Linda Darveau hosted a two-day Lean Manufacturing Training course for EPA employees sponsored by Headquarters and conducted by ConnSTEP. Attendees learned how to "lean" a manufacturing process and explored the connection between "lean" and "clean" manufacturing.

**For more information contact:** Linda Darveau, EPA Region 1-NE (617) 918-1718, darveau.linda@epa.gov

### **Electronics Recycling**

Chris Beling, EPA Region 1-NE worked with Staples, the Product Stewardship Institute, and the EPA's "Plug in to eCycling" program to launch a six week electronic waste (E-Waste) recycling pilot that ran from May 30 to July 11. The purpose of the project was to encourage local customers to recycle their computers, monitors, and business machines at select Staples locations. The Pilot tested the economic viability of a retail reverse distribution model.

**For more information contact:** Chris Beling, EPA Region 1-NE (617) 918-1792, beling.christine@epa.gov



## NORTHEAST ASSISTANCE & P2 ROUNDTABLE

### **Improving Compliance Assistance**

For the past four years, NEWMOA's Deputy Director has been a participant in the Compliance Assistance Advisory Committee (CAAC), which was established under the National Advisory Council for Environmental Policy and Technology (NACEPT) in 2000 to provide recommendations to the U.S. EPA on compliance assistance and its use and benefit in protecting the environment. There have been two different Advisory Committees, the first from 2000 – 2001 and the second from 2002 – 2004. NEWMOA has been a representative on both of these Committees and co-chaired a Measurement Subcommittee over its entire tenure in the group. Both of the CAACs involved a wide variety of stakeholders, including representatives of various state, federal, tribal, and local governments; trade associations; small businesses; and community-based groups.

The final report of the first CAAC, "Maximizing Compliance Assistance: Recommendations for Enhancing Compliance Assistance Opportunities at EPA and Through Other Providers," was submitted to Administrator Whitman in August 2001.

In 2002, the second CAAC began building on the previous CAAC's work to produce further recommendations and insights for EPA regarding compliance assistance. The second report entitled: "Recommendations for Enhancing EPA's Compliance Assistance Program" June 2004, was recently presented to Administrator Leavitt. It focuses on the implementation aspects of three areas critical to compliance assistance: (1) integration of compliance assistance into the Agency's mission, goals, and activities; (2) development of parameters that will successfully measure the results of compliance assistance activities; and (3) optimization of the compliance assistance network across EPA and other environmental assistance providers.

In its letter of transmittal to Administrator Leavitt, the NACEPT asked that EPA contemplate the following as it considers the CAAC's recommendations:

- "All forms of environmental assistance generally, and compliance assistance in particular, are essential complements to the enforcement tools that form the traditional core of EPA's regulatory programs. Assistance and enforcement should not be viewed as mutually exclusive. Rather, EPA should continue to strive to find and employ the most effective mix of these tools to achieve the Agency's goal of protecting human health and the environment. The potential for EPA's assistance programs to prevent violations of environmental laws cannot be overstated.
- The CAAC's report emphasizes performance outcomes and environmental impacts of EPA's compliance assistance activities. While work has been done in this arena, more work needs to be done, and the NACEPT encourages EPA to fully explore this arena with the goal of establishing credible measures of success, beyond enforcement actions and fines, for all of its compliance assurance-related activities. At a minimum, these measures should reflect the compliance rates and trends for regulated entities with regard to environmental regulations.
- EPA has invested substantially in developing goals and performance measures for all of its activities, as reflected in the Agency's new Strategic Plan. To the extent attainable, these goals and measures need to speak to actual environmental endpoints.

Ideally, the regulated community would be in full compliance with environmental regulations, and enforcement would not be necessary. Even then, the need for compliance assistance would not disappear. EPA's own definition of compliance assistance properly includes assistance activities that can move entities beyond compliance. The Agency needs to keep this in mind, and to plan for and support compliance assistance as a fundamental component of its mission to protect human health and the environment."

**For more information contact:** Terri Goldberg, NEWMOA (617) 367-8558 x302, [tgoldberg@newmoa.org](mailto:tgoldberg@newmoa.org); visit: [http://www.epa.gov/ocem/nacept/nacept\\_doc\\_library.htm](http://www.epa.gov/ocem/nacept/nacept_doc_library.htm).

## NORTHEAST STATES ASSISTANCE &amp; P2 CALENDAR

TITLE	SPONSOR	DATE / LOCATION	CONTACT
High Performance Green Buildings Salon	NYSERDA	September 15, 2004, Poughkeepsie, NY; September 16, 2004, Albany, NY	518-432-6400 x221
Conference for Community Awareness of Clean & Green Manufacturing	MA OTA & Environmental Affairs' EJ Program	September 18, 2004, Worcester, MA	Susan.Lanza@state.ma.us
NH Pollution Prevention & Homeland Security Conference	UNH Continuing Education	September 21, 2004, Durham, NH	603-862-4234
2004 Summer GLRPPR Conference	GLRPPR	September 23-24, 2004, Columbus, OH	630-472-5019
Motor Management & Pump System Efficiency Workshops	NHIOF	September 30, 2004, Manchester, NH	www.nhiof.org
Clean Energy Tour	Mass Tech Renewable Energy Trust	October 1-2, 2004, Brockton, MA October 8-9, 2004, North Adams, MA	508-870-0312
High Performance Schools Conference	US DOE	October 5, Hartford, CT	Kim.Trella@po.state.ct.us
High Performance Green Buildings Salon	NYSERDA	October 6, 2004, Syracuse, NY; October 7, 2004, Buffalo, NY	518-432-6400 x221
Empire Energy & Environmental Exposition	EBA/NYS	October 12-13, 2004, Saratoga Springs, NY	518-432-6400 x224
Western Regional P2 Network Conference	WRPPN	October 13-15, 2004, San Diego, CA	www.wrppm.org
Setting the Table: Tools & Techniques for a Sustainable Food System	Northeast SARE	October 19-21, 2004, Burlington, VT	Vernon.grubinger@uvm.edu
High Performance Green Buildings Salon	NYSERDA	October 20, 2004, Poughkeepsie, NY; October 21, 2004, Albany, NY	518-432-6400 x221
Sustainable Innovation 04	CfSD	October 25-26, 2004, Farnham, Surrey, UK	44 (0)   252 89 2772
Buy Recycled & EPP Vendor Fair & Conference	MA EPPP	October 26, 2004, Worcester, MA	617-720-3351
High Performance Green Buildings Salon	NYSERDA	November 3, 2004, Syracuse, NY; November 4, 2004, Buffalo, NY	518-432-6400 x221
International Conference of The Greening of Industry Network	GIN	November 7-10, 2004, Hong Kong	781-646-4596
Public Health & the Environment	APHA	November 6-10, 2004, Washington, DC	www.apha.org
Greenbuild International Conference & Exposition	USGBC	November 10-12, 2004, Portland, OR	202-828-7422
Advancing Environmental Stewardship Through Collaboration	NPPR & Partners	April 11-14, 2005, Chicago, IL	www.p2.org

For a more complete listing of upcoming events, visit [www.newmoa.org](http://www.newmoa.org)



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