



**NHPP**  
NEW HAMPSHIRE  
POLLUTION PREVENTION PROGRAM

**2011** *Biennial Report* **2012**



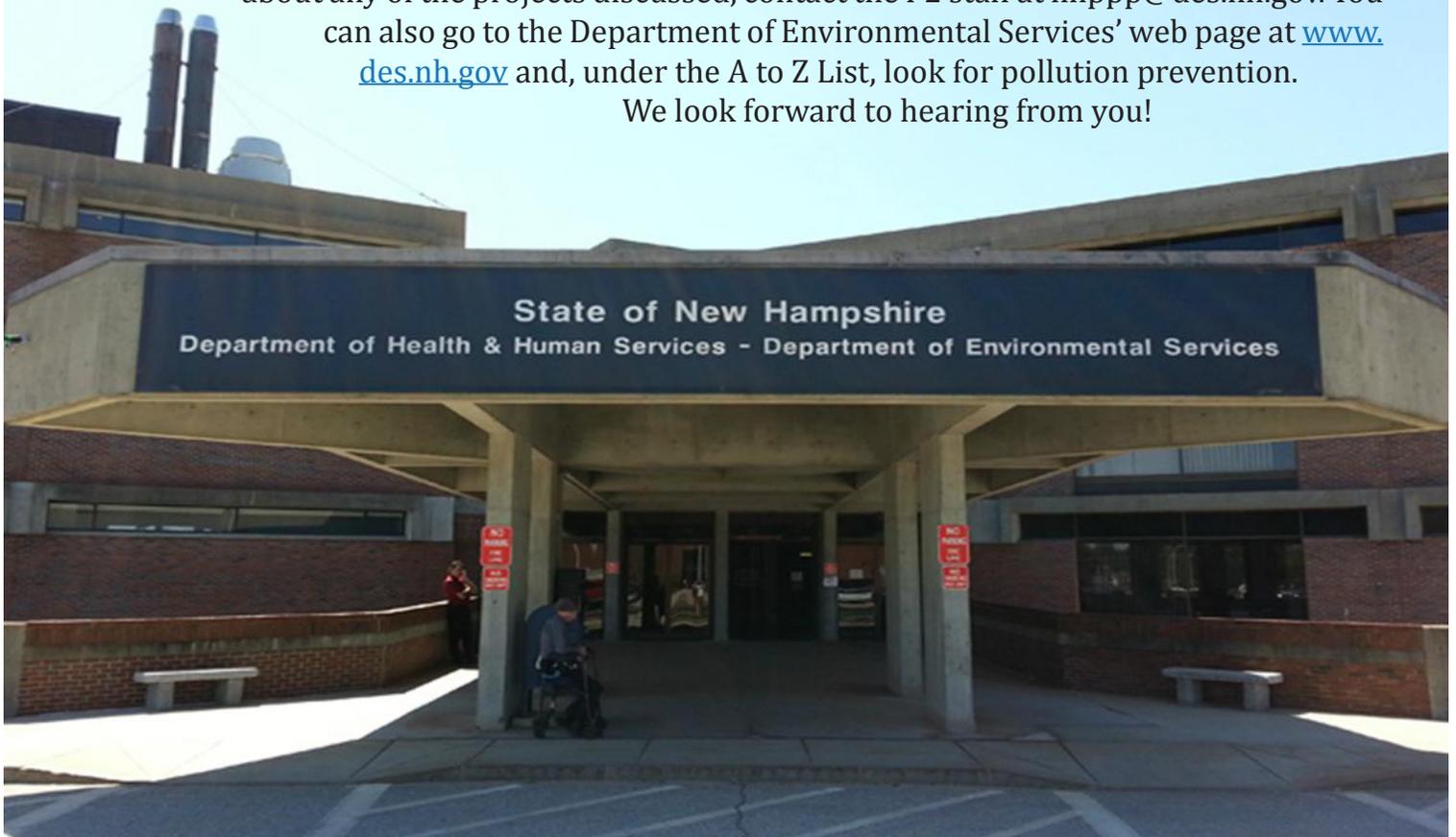
***Pollution prevention***, also called P2, refers to activities or strategies that reduce or eliminate waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream.

The New Hampshire Pollution Prevention Program (NHPPP) has provided free, confidential, compliance and pollution prevention assistance to the state's businesses, municipalities, public agencies, organizations and residents since 1991. The program has worked with hundreds of New Hampshire businesses, helping them to save millions of dollars on everything from material purchases to water and energy savings, and from hazardous and solid waste management to disposal costs. NHPPP provides assistance in the form of site assessments, technical research, compliance assistance, and through the DES/UNH Pollution Prevention Summer Intern Program.

This report highlights the program's activities for calendar years 2011 and 2012. During the reporting period, NHPPP focused on specific business sectors and projects including: the hospitality industry, concrete facilities, ski resorts, golf courses, auto body shops and mercury reduction. In 2011, many DES programs saw major cuts to their budgets and NHPPP was no exception. The program lost a 20 year veteran of pollution prevention when his position was eliminated due to budget reductions. Because the Program Manager position was already vacant, this left the program understaffed and led to the elimination of certain projects and activities. In 2012, the Program Manager position was finally filled and NHPPP gained a new staff person.

In the spirit of pollution prevention, this biennial report is offered electronically to minimize paper use and printing costs. If you would like a paper copy or additional information about any of the projects discussed, contact the P2 staff at [nhppp@des.nh.gov](mailto:nhppp@des.nh.gov). You can also go to the Department of Environmental Services' web page at [www.des.nh.gov](http://www.des.nh.gov) and, under the A to Z List, look for pollution prevention.

We look forward to hearing from you!



# Sustainable Hospitality



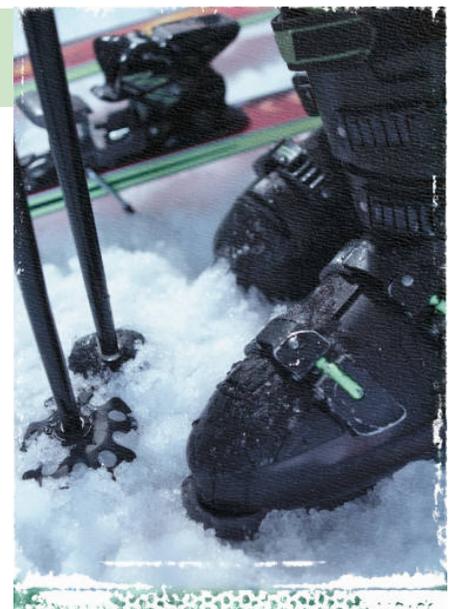
Based on the success of previous work with the hospitality industry, NHPPP continued to partner with the NH Lodging and Restaurant Association's Sustainability Program (NHLRSP) to promote energy use reduction, water conservation, food waste reduction and improved fats, oils & grease (FOG) management. Through outreach and site visits, 4 hotels, 4 restaurants, 2 bed and breakfasts and a University dining hall became certified as "Environmental Champions" and "Partners" in the Sustainability Program. To qualify for this title, each facility had to fill out an application and meet requirements in each of the categories: energy, waste and water. Staff from NHPPP and NHSLRP then visited the facilities to verify these requirements. These required initiatives not only help to lessen the impact on the environment, they often save the facility thousands of dollars. The program offers recognition to these facilities which in turn use this to market to green consumers. In addition to these 11 facilities that certified for the program, NHPPP reached out to 18 more facilities to offer assistance in implementing environmental initiatives.

The following table shows the results of these efforts:

Reductions	Savings
Gallons of Water Reduced	7,411,363
Energy Reduced	898,839 kWh
Pounds of Greenhouse Gases Reduced	1,366,424
Pounds of Food Waste Composted	60,000
Pounds of Food Waste Reduced	71,154
Pounds of Hazardous Chemicals Reduced by Switching to Green Cleaners	1,149
Dollars Saved	\$266,966

## Green Slopes

NHPPP continued its partnership with SkiNH through the *Green Slopes Program*, providing environmental outreach to New Hampshire's 30 downhill and cross country ski areas. In 2010, NHPPP and SkiNH surveyed ski areas to determine where more assistance was needed. The results from the survey assisted NHPPP in planning for the 2011 Green Slopes Conference. This conference was co-hosted by the Dartmouth Skiway. Topics covered included: erosion control, groundwater withdrawals, water conservation, solar options, recycling, french fry oil recycling, green snowmaking practices, overall sustainable practices, and permitting. The Green Slopes project was funded through a pollution prevention grant from the Environmental Protection Agency (EPA) that ended in 2011. NHPPP continues to offer assistance to ski areas and works with SkiNH when help is requested.



# Auto Body

NHPPP began work with this sector in 2009, partnering with DES' Small Business Technical Assistance Program and the NH Small Business Development Center. Workshops and site visits were provided to offer compliance assistance with the National Emission Standards for Hazardous Air Pollutants (NESHAP): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources rules [40 (CFR) Part 63, Subpart HHHHHH], NH Hazardous Waste Rules, and to offer P2 strategies for waste reduction.

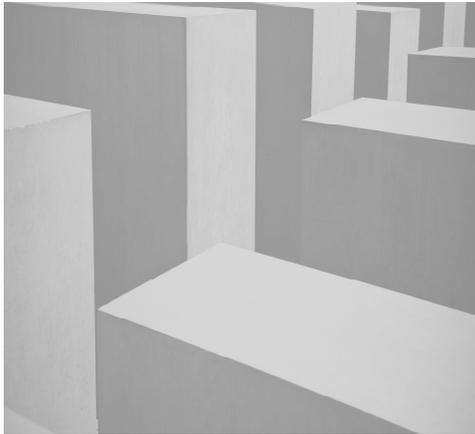


Due to these outreach efforts, there has been increased compliance with the NESHAP rules, NH Hazardous Waste Rules, and also an increase in pollution prevention techniques.

These include:

- 81% of auto body shop employees received training on the new painting regulations.
- 28% of shops use on-site solvent and thinner waste recycling.
- 94% of shops use High Volume Low Pressure spray guns to reduce the amount of paint wasted by older types of spray guns.
- 13% of shops switched to water based paint.
- 28% of shops are now using gun cleaning stations which allows solvent to be reused multiple times in the cleaning process prior to being disposed of as hazardous waste.

# Concrete - Stormwater



Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people. Concrete production facilities contribute to stormwater pollution in the form of total suspended solids, chemical oxygen demand, pH, lead, iron, zinc, biological oxygen demand, oils and grease. The runoff from these areas may discharge pollutants directly into nearby water bodies or indirectly via storm sewer systems. In 2009, one New Hampshire facility was fined by EPA for failing to take adequate precautions to avoid wastewater and stormwater from running into wetlands and waterways and for not having the proper permit for the discharge of water used for cleaning concrete mixers and other

plant operations. NHPPP initiated this exploratory project to determine compliance with EPA's Stormwater Rules, gather data on water and energy use, and offer waste reduction strategies. A survey was developed based on EPA's stormwater management requirements. Other questions on the survey addressed stormwater best management practices and waste, energy use and water conservation initiatives. With the help of an intern from the UNH/DES Pollution Prevention Intern Program, NHPPP designed an informational brochure and compiled a list of energy and water saving techniques. A survey was created and a few site visits were undertaken to collect data. Phone calls to several concrete facilities served to verify knowledge of their obligations. Most facilities contacted knew of their responsibility for compliance with EPA's rules and had fulfilled their obligations. NHPPP provided assistance to two facilities that needed help with compliance.



# Golf Courses

New Hampshire has over 120 municipal, semi-private and private golf courses. In 2011, NHPPP began a project to examine fertilizer and pesticide use by these golf courses. On average, an 18-hole golf course covers 150 acres of which about 100 acres, or 67%, consisting of maintained turf grass in the form of greens, fairways, tees, rough, practice areas, etc. The remaining 50 acres are devoted to bunkers, water bodies, buildings, parking lots and non-turf grass landscape. Environmental concerns over the use of land for golf courses has grown over the past 40 years; specific concerns include the amount of water used, as well as chemical fertilizers and pesticides used for maintenance that could affect stormwater runoff. According to national statistics, the average golf course uses approximately 14 million gallons of water per year for irrigation while about 276 pounds of fertilizers (in the form of nitrates, phosphates and potash) are applied annually. Further, about 1,000 pounds of pesticides (mostly herbicides) are applied to an average golf course each year. Insecticides, fungicides, rodenticides and herbicides are applied at roughly 4 to 7 times the average amount used in agriculture, on a per acre basis.



NHPPP initiated this project to determine how New Hampshire golf courses compared to the national average in their water, fertilizer and pesticide use, and offer suggestions for reductions where applicable. NHPPP partnered with the DES Watershed Management Bureau to gather and analyze information on fertilizer use by golf courses in the coastal region of the state. The Watershed Bureau sent out a survey to all golf courses in the coastal watershed as part of a project to identify possible sources of elevated nitrogen concentrations in NH's Great Bay and associated watershed. Preliminary results from the fertilizer survey demonstrate that NH golf courses administer less nitrogen than the Northeast average and far less than the national average. This survey only included the coastal region of NH, so NHPPP is currently collecting data from the other regions of the state. Based on this data, NHPPP will offer pollution prevention strategies for reductions where applicable.

Based on input received from NH golf industry members, NHPPP is developing a Golf Course Best Management Guide. This document focuses on sustainable business practices and highlights pollution prevention methods tailored to golf courses in the state. The handbook provides suggestions and recommendations to assist golf courses in reducing the pesticide, fertilizer, water and energy inputs at their courses. In 2012, NHPPP staff began visiting golf courses and so far has found that the course superintendents are diligent about using the least amount of chemical fertilizer, pesticides and water possible. More visits have been scheduled for 2013 and once the Best Management Guide is completed, it will be distributed to golf courses throughout the state. Results of the visits will be reported in the 2013-2014 NHPPP Biennial Report.



# Core Activities

## Governor's Award for Pollution Prevention

The Governor's Award for Pollution Prevention recognition program began in 1994. That was during a time when P2 was a relatively new process to look at ways to reduce the amount of waste a company generates. Throughout the years, businesses have embraced P2 strategies to reduce wastes and save money. In 2011, there were two companies honored for their efforts. Monadnock Paper Mills in Bennington and Southeastern Container in Hudson have proven that the process of pollution prevention planning (see tables below) is an excellent way to examine a company's processes and achieve the greatest waste reductions possible. Both companies are past winners of the award and in 2011 Southeastern Container was an Excellence in Pollution Prevention Award for their continuous improvement efforts.



Results of the 2011 Governor's Pollution Prevention Award winners' efforts:

### **Monadnock Paper Mills**

#### Annual Savings

Water	10 Million Gallons
Fuel	77,500 gallons, reducing 8 tons of SO <sub>2</sub> , 2 tons of NO <sub>x</sub> , and .5 tons of CO <sub>2</sub>
Waste Reduction/Reuse	50,000 dry pounds paper
Energy	6200 kWh & \$8,000



### **Southeastern Container, Inc.**

Honored for Past Five Years Savings

#### **Five Years** of Pollution Prevention Results

Reduced Raw Material Consumption	2.8 million pounds
Energy Use Reductions	7.8 million kWh
Water Use Reductions	459,000 gallons
Solid Waste Reductions	290,000 pounds
Reduced CO <sub>2</sub> Emissions	12,000 tons
Savings	\$4.4 million

The Governor's Award for Pollution Prevention was put on hold in 2012 due to lack of NHPPP staff. The program is in the process of being reinvigorated with the hope of re-starting it in 2014.

# UNH/DES P2 Intern Program



The University of New Hampshire (UNH) continued to partner with NHPPP to offer an internship program to students majoring in Chemical and Environmental Engineering. Students receive 10 weeks of training during their spring semester and are then placed in facilities to assist with pollution prevention projects during the summer. This highly successful initiative connecting students with manufacturing facilities to gain real-world experience began in 1993. Since then, over 120 UNH students have worked with 70 New Hampshire companies on pollution prevention projects that reduced or eliminated waste and ultimately saved those companies millions of dollars. In many instances, companies were so impressed with their work, the intern was offered full-time employment.

During 2011 and 2012, ten students were placed in four manufacturing facilities, the EPA office in Boston and NHPPP in Concord. For details on the results of their efforts go to: <http://des.nh.gov/organization/commissioner/p2au/pps/ppp/p2-internship-program.htm>



## Compliance Assistance

NHPPP offers free, confidential, non-enforcement compliance assistance and pollution prevention strategies to all New Hampshire businesses, institutions, municipalities and agencies. Without the risk of enforcement, these facilities can schedule a site visit at which staff will assist with compliance issues and offer suggestions to reduce waste, energy use and water consumption. After the visit, a report containing observations and suggestions is generated and sent to the company.

NHPPP also provides support by phone and email. In 2011 and 2012, NHPPP responded to 220 requests for technical research, product information and regulatory questions. Staff conducted 90 site visits to various facilities and transfer stations to ensure compliance and provide a variety of assistance.

## P2 Training Activities

Pollution prevention training is a valuable way to help people understand the benefits of waste reduction planning and implementation. NHPPP provided training to Certified Hazardous Waste Coordinators as part of the hazardous waste generators annual compliance requirement. NHPPP spoke with students from Southern New Hampshire University, provided presentations to various organizations and staffed informational booths at public events such as "Greenerpalooza" in Gilford and the Monadnock Paper Mills Sustainability Fair. NHPPP staff is available to provide presentations and the P2 training module free of charge to businesses, schools and organizations upon request.



# *Mercury Reduction Activities...*

## *Program Overview*

The NHPPP continues to coordinate the DES mercury reduction efforts in accordance with the New Hampshire Mercury Reduction Strategy and the Northeast Regional Action Plan, both adopted in 1998. New Hampshire met its initial goals (also shared by the other New England states and the Eastern Canadian provinces) of reducing mercury emissions by 50 percent by the end of 2003 and achieving a 75 percent reduction by 2010. Most recently, mercury emissions reduction requirements went into effect for coal-fired power plants, bringing New Hampshire's overall emissions reductions to greater than 90%. New Hampshire continues to work on reducing or eliminating the remaining sources of mercury to the environment, in particular mercury in products and wastes.

The P2 Section Supervisor continued to co-chair the New England Governors'/Eastern Canadian Premiers' Regional Mercury Task Force. The Task Force was formed in 1998 to work on regional and international mercury reduction efforts. Progress to date includes developing model mercury-added products legislation to reduce mercury in consumer and commercial products, numerous outreach and education efforts, and significant reductions in mercury emissions from major source categories, such as municipal waste combustors and medical waste incinerators. NHPPP staff also participates in the Interstate Mercury Reduction and Education Clearinghouse, which serves as a coordinating body for state mercury products legislative efforts.

## *Transfer Station Visits*

In 2011, an intern from the UNH/DES P2 Internship Program visited 18 random transfer stations throughout the state to determine compliance with regulations governing the handling and disposal of mercury containing devices. His visits found that all 18 transfer stations accepted fluorescent lamps, rechargeable batteries and various mercury-added items such as thermometers, button cell batteries and switches and all but one station collected mercury containing thermostats.

Transfer stations are required by state law (RSA 146-M:53) to: have postings at the facility banning disposal of mercury-added items; provide written notification of the mercury-added items disposal ban to customers; have an implemented inspection procedure to detect mercury-added items; and have an updated Facility Operating Plan to show implementation of procedures to detect the presence of illegally discarded mercury-added items.

Findings from the transfer station visits:

- 12 out of the 18 had postings or signage.
- 14 stations provided written notification in either a pamphlet mailer or on the town's web site.
- 11 stations had methods of inspecting incoming waste to ensure mercury-added items are not being disposed of improperly.
- Out of the 11 stations that had inspection methods, only 5 of them had a Facility Operating Plan.

The intern also observed improper storage of some of these items and offered compliance assistance to minimize the risk of accidental releases of mercury to the environment.

# Mercury-Containing Products and Devices

The NHPPP continued to manage several programs to capture and recycle sources of mercury that previously were often discarded in solid waste, thereby enabling the release of mercury into the environment. Working with the Household Hazardous Waste program, the NHPPP promoted the collection of other mercury-containing devices, such as fluorescent lamps, thermometers, mercury batteries and tilt switches, at municipal solid waste facilities.

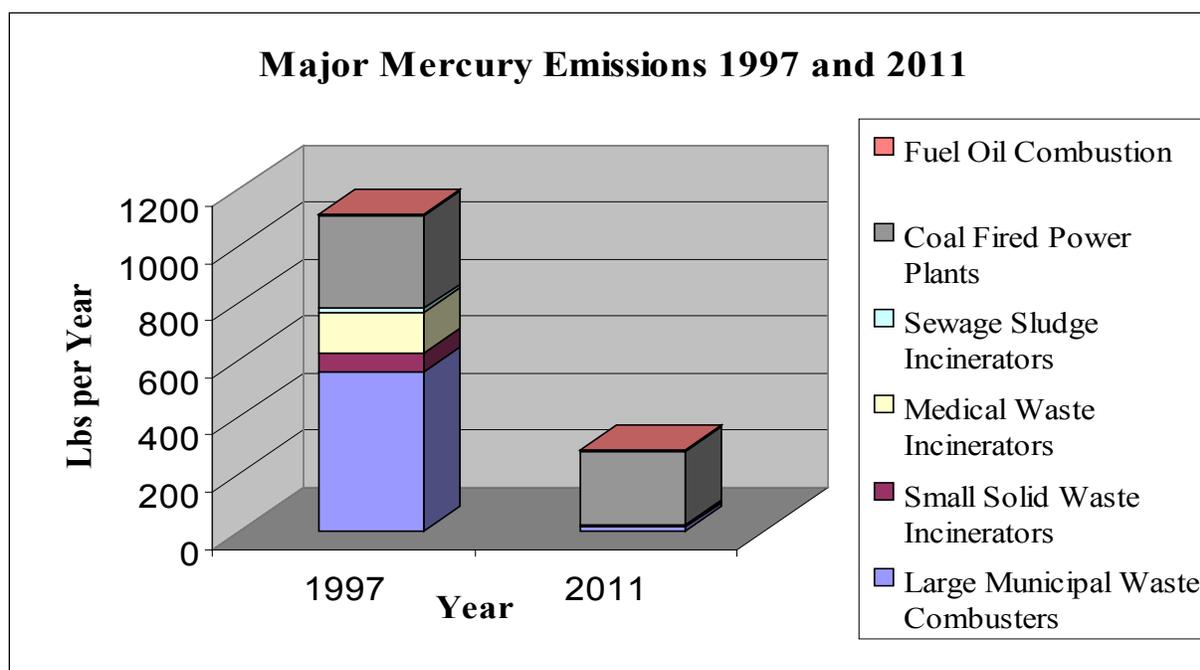
The New England states, including New Hampshire, as well as several states outside of the region, have passed legislation to restrict or prohibit the sale of many mercury-added products. The Interstate Mercury Education and Reduction Clearinghouse used data submitted by manufacturers on their use of mercury in products sold in the United States in 2007 to update its analysis of the trends in mercury use in products. Key findings include:

- Overall use of mercury in products declined 46% between 2001 and 2007
- Dental amalgam use dropped nearly 50% between 2004 and 2007
- Mercury use in thermostats dropped 73% between 2001 and 2007 and continues to decline as more manufacturers phase-out mercury-added thermostats

The findings are largely attributed to efforts by the states to prohibit sales and distribution of mercury-containing products. The trends in products analysis will be updated in the next reporting period based on the most recent manufacturer data. It is likely that the data will show additional significant reductions in mercury use in products.

## Outreach

Outreach efforts to New Hampshire hospitals, businesses, schools, auto salvage yards, municipalities, and citizens on mercury reduction are also ongoing and are instrumental in the reduction of mercury in waste. Ensuring the proper management and recycling of mercury-added products is an ongoing challenge which the NHPPP will continue to pursue.



Source: NHDES Air Resources Division

# Upcoming Projects

In addition to the ongoing projects detailed above, the NHPPP is initiating two new projects:

## ***Small Quantity Hazardous Waste Generators***

There are over 2,100 registered New Hampshire Small Quantity Generators (SQGs) (i.e., companies generating less than 220 lbs. of non-acute hazardous waste per month) located throughout the state. Cumulatively, these SQGs generate an average of 730,000 pounds of hazardous waste annually. Typically, these businesses do not fully understand compliance issues and lack resources to dedicate to finding waste reduction opportunities. NHPPP will provide pollution prevention strategies to reduce waste and offer compliance assistance to the many types of industries in the SQG category.

## ***Greening State Government through Energy Efficiency***

As part of the NH Climate Action Plan, the State of New Hampshire mandated a goal for reducing fossil fuel energy consumption in state buildings by 25% below 2005 levels by the year 2025. NHPPP will be working with the Department of Administrative Service's State Energy Manager to implement projects to reduce energy consumption in state-owned buildings.

## ***Updating Green Business Workbook***

With the assistance of DES staff from various divisions, NHPPP will be updating the 2008 award-winning "Making Your Business Greener Workbook". The new edition will have more suggestions for energy efficiency, water conservation and waste reductions, as well as links to regulatory information to help businesses with compliance.



NH Department of Environmental Services  
NH Pollution Prevention Program  
Office of the Commissioner  
29 Hazen Drive; PO Box 95  
Concord, NH 03302-0095  
603.271.6460  
[nhppp@des.nh.gov](mailto:nhppp@des.nh.gov)  
[www.des.nh.gov](http://www.des.nh.gov)  
R-CO-13-02