

# 18. Environment

In March 2008, Business NH Magazine inaugurated its first annual Lean and Green Awards. Seven New Hampshire companies won awards in three categories: Green Processes, Green Building, and Green Products/Services. The idea is to promote and reward green practices that help save the environment and natural resources while improving the bottom line. The University of New Hampshire won the Overall Judges Award for its extensive green practices, such as switching to a cogeneration plant for electricity and heat, and transitioning its fleet of vehicles from diesel to low-sulfur biodiesel.

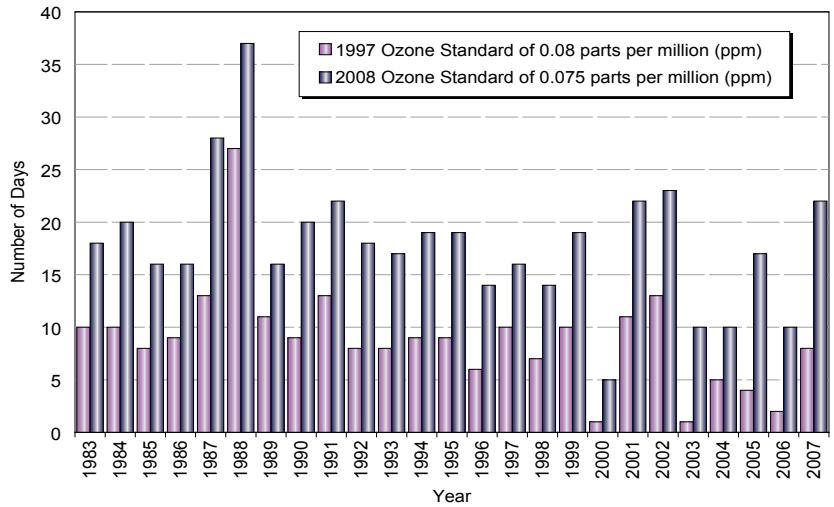
## Pay as you Throw

Residents of some New Hampshire communities have a decision to make. Do they reduce the amount of garbage produced or change to a 'pay as you throw' system to pay for higher tipping rates for disposal of trash? For example, fees based on the Concord Regional Solid Waste Cooperative's contract with Wheelabrator Technologies will jump from $43.50 per ton to $56 in 2010 and $65 in 2011.[1] Many communities have already made the switch while others ponder the idea. With pay as you throw, the customer is charged by the bag, so that those who throw away the most pay the most.

One intended result of pay as you throw is the incentive to recycle. Taking plastic, glass, aluminum, tin, paper and cardboard out of the general trash stream can reduce volume greatly. Recycling has generated revenue for cash-starved towns, while keeping solid waste disposal costs down. Although this source of revenue has largely dissolved as the global economic downturn has decreased the demand for recycled materials.

1 Schoenberg, Shira. "All of that trash could go at a price." October 6, 2008. Concord Monitor. Accessed October 21, 2008. <www.concordmonitor.com/apps/pbcs.dll/article?AID=/20081006/FRONTPAGE/810060302>.

## Days Exceeding the 8-Hour Ozone Standard in New Hampshire




Source: Lisa Landry, New Hampshire Department of Environmental Services

# 18. Environment

"Pay as you throw" is already in place in 43 New Hampshire communities, requiring purchase of special trash bags and/or a fee per bag disposed. Recycling is mandatory in about 125 communities and voluntary in over 90 more.[2]

## Air Quality

The standard limit for ground-level ozone defining an unhealthy day has changed. The New Hampshire Department of Environmental Services now uses the EPA standard of .075 parts per million. By this standard, there were 22 unhealthy days in 2007. Under the old standard of .08 parts per million, there were only eight. The number of unhealthy days increased each year from 1983 through 2007 when evaluated with the new standard measurement.

The EPA estimates that revising the standard will improve the air quality enough to provide benefits valued between $2 and $17 billion by reducing bronchitis, asthma, nonfatal heart attacks, and other health risks. Ground level ozone not only affects people, but also plants, trees and crops.

## Regional Greenhouse Gas Initiative

Ten states, including New Hampshire, participate in the Regional Greenhouse Gas Initiative (RGGI). These states have agreed to cap carbon emissions from power plants, reducing them by ten percent by 2019. This cap and trade program, simply put, is an allowance system. The RGGI agrees on a capped level of carbon emissions. Each of the states in the agreement is provided enough allowances to cover their current emissions. The emission levels are scheduled to be reduced annually until the prescribed reduction of 10 percent is reached by 2019. Emission producing entities can either sell or purchase "allowances" to cover the quantity of their emissions. The cap-and-trade

| Water Quality (assessed biennially) | 2008 Site Specific* | 2008 (PBM)** |
|---|---|---|
| Lakes and ponds | | |
| Total Acres | 164,615 | In process |
| Aquatic Life | | |
| Acres Fully Supporting | 258 | In process |
| Acres Not Supporting | 101,238 | In process |
| Insufficient Information | 39,640 | In process |
| Acres Not Assessed | 23,479 | In process |
| Swimming | | |
| Acres Fully Supporting | 115,865 | In process |
| Acres Not Supporting | 12,081 | In process |
| Insufficient Information | 24,639 | In process |
| Acres Not Assessed | 12,030 | In process |
| Rivers and streams | | |
| Total Miles | 9,659 | 9,659 |
| Aquatic Life | | |
| Miles Fully Supporting | 105 | 3,429 |
| Miles Not Supporting | 2,480 | 1,298 |
| Insufficient Information | 1,064 | 3,910 |
| Miles Not Assessed | 6,009 | 413 |
| Swimming | | |
| Miles Fully Supporting | 835 | 7,527 |
| Miles Not Supporting | 898 | 556 |
| Insufficient Information | 421 | 554 |
| Miles Not Assessed | 7,506 | 413 |

* Because the site-specific assessments tend to focus on rivers and streams with known water quality issues, the results of the assessments are not indicative of water quality statewide with respect to the recreation and aquatic life uses. To create a more representative picture of water quality in the state's rivers for those uses, DES also conducted a probabilistic assessment of wadeable (fourth order and smaller) streams for 2008 that covers 94% of out river miles.

** Probability Based Monitoring

Source: New Hampshire Department of Environmental Services, Water Division

[2] New Hampshire Community Profiles Survey. Economic and Labor Market Information Bureau, New Hampshire Employment Security. 2008.

system for carbon is as yet untested in the nation, but has the potential of keeping electric costs down as well as improving air quality.

The first auction for carbon emissions offsets was held on September 25. The result? Thirty-nine million dollars were raised, with the price per ton of carbon emitted settling at $3.07.[2] New Hampshire did not participate in this auction, but most likely will in the future. The next auction is planned for December 2008.

## Water Quality

To assess the quality of surface waters, the New Hampshire Department of Environmental Services (NHDES) uses two data collection methods. The first is site-specific assessments that focus on rivers, streams, lakes and ponds with known quality issues. The other is a probabilistic assessment of these bodies of water, using Probability Based Monitoring (PBM). This involves sampling a portion of the number of bodies of water. Random sampling ensures that no particular portion of the population is favored over another. The PBM method data is now complete for rivers and streams; the study of lakes and ponds is now in process.

## I-93 Rebuilding and Widening

As rebuilding work continues on the 20-mile stretch of Interstate 93 from Salem to Manchester, several environmental issues are being considered and steps being taken to reduce the impact of construction.[3]

### Stormwater Management

After a rain, stormwater runoff contains suspended solids and other particles that might be injurious to streams, rivers, ponds and wetlands. The EPA and the NHDES have set standards for stormwater treatment. These may include use of grass swales, infiltration and other basins, and the creation of gravel wetlands. Gravel wetlands technology is relatively new and will be used throughout the Salem to Manchester corridor.

### Chloride Surface Water

The largest source of chlorides is presumed to be road salt. Winter road maintenance is one source, but chlorides may also come from commercial parking lots, septic, and water softening systems. The New Hampshire Department of Transportation (NH DOT) and the EPA are now involved in a study to conduct water quality monitoring along I-93.

### Environmental Mitigation

The improvements along I-93 directly affect 77 acres of wetland. NH DOT uses three methods to mitigate the impact of construction near wetlands: avoidance, minimization (steeper slope sides or construction of retaining walls) and compensation (creation of new wetlands). Mitigation efforts will protect over a thousand acres of land and create 27 acres of

[2] Salmon, Felix. "Cap and Trade in the US." Market Movers. October 7, 2008. Accessed October 21, 2008. <www.portfolio.com/views/blogs/market-movers/2008/10/07/cap-and-trade-in-the-us>.

[3] "Environmental." Rebuilding I93, Salem to Manchester. New Hampshire Department of Transportation. Accessed October 21, 2008. <www.rebuildingi93.com/content/environmental/>.

new wetlands when the project is complete.

## Mount Washington Cog Railway

Every little bit helps when it comes to keeping air clean. For 139 years, Old Peppersass, a coal-fired steam engine and others like it have been chugging to the summit of Mount Washington, leaving trails of black smoke. But in September, a new, greener locomotive was introduced, one that runs on biodiesel and ordinary diesel fuel. The name of the new train is Wajo Nanatasis, pronounced "Wadzo Nanna-tassis." It is Abenaki for "Mountain Hummingbird" and was selected from several entries in a "Name That Train" Contest.[4] The new engine is expected to diminish emissions and conserve fossil fuel.

4 "Governor Dedicates the Mount Washington Cog Railway's First Biodiesel Locomotive." The Mount Washington Cog Railway. September 6, 2008. Accessed October 21, 2008. <www.thecog.com/nametrain>.

# 18. Environment

| Toxic Release Inventory | 2004 | 2005 | 2006 | 2007 | Source |
|---|---|---|---|---|---|
| On-site and Off-site Disposal and Other Releases in Pounds | | | | | |
| New Hampshire | 5,326,521 | 5,256,977 | 4,173,403 | n/a | EPA |
| Percent Change | -7.9% | -1.3% | -20.6% | n/a | NHES/EPA |
| New England | 30,405,654 | 30,236,122 | 27,725,988 | n/a | EPA |
| Percent Change | -6.9% | -0.6% | -8.3% | n/a | NHES/EPA |
| U.S. (thousands) | 4,238,737 | 4,353,946 | 4,248,865 | n/a | EPA |
| Percent Change | -4.6% | 2.7% | -2.4% | n/a | NHES/EPA |

| Ozone Levels | 2004 | 2005 | 2006 | 2007 | Source |
|---|---|---|---|---|---|
| Ozone levels (ozone season April 1 to October 31):<br>Highest 1-hour maximum hourly values in parts per million, selected monitoring sites<br>[National Ambient Air Quality Standard (NAAQS) 0.125 parts per million (ppm)] | | | | | |
| Manchester | 0.104 | 0.101 | 0.087 | 0.092 | EPA |
| Nashua | 0.110 | 0.105 | 0.091 | 0.104 | EPA |
| Portsmouth | 0.116 | 0.097 | 0.092 | 0.096 | EPA |
| Rye | 0.114 | 0.106 | 0.100 | 0.115 | EPA |
| Estimated Days above NAAQS standard (0.125 ppm) | 0 | 0 | 0 | 0 | EPA |
| Unhealthy Days (days above 0.08 ppm/8 hours, state) | 10 | 17 | 10 | 22 | DES-ARD |

| Solid Waste | 2004 | 2005 | 2006 | 2007 | Source |
|---|---|---|---|---|---|
| SOLID WASTE Residential and Commercial (tons per year-thousands) | | | | | |
| Generated | 1,451 | 1,443 | 1,336 | 1,330 | DES-WMD |
| Diversion (recycling + composting) | 519 | 466 | 412 | 445 | DES-WMD |
| Disposed of | 941 | 878 | 866 | 844 | DES-WMD |
| Pounds per person per day | 6.1 | 7.7 | 7.1 | 6.9 | DES-WMD |
| Exported | 43 | 99 | 28 | 40 | DES-WMD |
| Imported (for incineration and landfill) | 644 | 395 | 546 | 243 | DES-WMD |

| Carbon Monoxide | 2004 | 2005 | 2006 | 2007 | Source |
|---|---|---|---|---|---|
| Highest maximum eight-hour concentration in part per million (ppm) | | | | | |
| Manchester | 1.7 | 1.9 | 5.8 | 1.8 | EPA |
| Nashua | 2.8 | 3.3 | 2.7 | 2.3 | EPA |