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Up in the air

By DREW KERR

STILLWATER -- On an unusually balmy afternoon late last month, Brian Lay climbed a steep set of stairs inside the visitor's center at the Saratoga Battlefield.

An environmental engineer with the Department of Environmental Conservation, Lay was making his way towards a small, attic-like space in which two small clear, plastic tubes protruded from a corner of the wall.

The tubes fed into a matrix of gadgetry that served to separate ozone particles from the air being funneled inside and record the constant stream of data being produced.

On this particular afternoon, the results were favorable: the level of ozone in the air was just 27 parts per billion, well below the mark the Environmental Protection Agency deems safe, currently set at 75 parts per billion.

The results were pretty common for a cool winter day, when there is less vehicle traffic in the area and the temperature is too cool to create the necessary chemical reaction that causes ozone to form and pollute the air, Lay said.

It's a different story in what Lay, a Ballston Spa resident who has studied air pollution in the state for more than 20 years, described as the "ozone season," generally April through October.

That season - when tourists flock to the area, energy use climbs and temperatures rise - often produces much different results, ozone information collected by the DEC shows.

In fact, ozone levels recorded at the rural Stillwater monitoring station regularly exceed the limits federal environmental officials say they want to see - a standard that may soon become even more stringent.

Just twice since 1990, the DEC's information shows,

has the annual average ozone levels recorded at the Stillwater monitoring site fallen below the national standard laid out in the federal Clean Air Act, a law that has sought to regulate air quality in the United States for more than 50 years.

The results may seem odd for such a bucolic area. But when it comes to air pollution, Lay and other environmental officials say, the problem is widespread and, looks can often be deceiving.

"It's not like ozone is formed right out here in the parking lot," Lay said during a recent visit to the ozone monitoring site, one of 33 scattered across New York. "Ozone is a regional pollutant. It's pretty much everywhere."

Ground-level ozone, a primary contributor to smog, is created when nitrogen oxide, carbon monoxide, methane and volatile organic compounds such as gasoline fumes mix with warm sunlight in the atmosphere.

The chemical reactions that provoke the pollutant's formation often take place over broad geographical areas and over a long period of time, scientists say.

In fact, much of the ozone found to be hovering at ground level above Warren, Washington and Saratoga counties may actually be traced back to factories, cars and other fossil-fuel burning sources hundreds of miles removed outside the region and in states as far removed as Kentucky or Ohio.

The source of those emissions includes everything from lawn mowers to power plants - pretty much anything that involves fossil fuels and combustion - all of which are regulated in some way by state and federal laws that aim to control the amount of pollutants in the atmosphere.

Those regulations could soon become tougher, too: Last month, the EPA proposed new ozone limits supporters say will lead to cleaner air and improve health for both humans and plants.

If enacted, the rules would change the allowable level of ozone in the atmosphere to between 60 and 70 parts per billion, an adjustment from the 75 part per billion standard set in 2008 by the Bush administration.

Officials with the New York Department of Environmental Conservation say it would be up to them to craft plans that would improve air quality in areas, including Saratoga County and several surrounding counties, that don't meet the new standards.

Such plans would have to be finished by 2013, and the new limits would have to be met between 2014 and 2031.

If they're not, federal highway funds could be withheld and new road construction efforts may be put on hold. Companies found to be contributing to the problem could also face civil penalties, according to EPA officials.

Exactly what new rules - as well as how quickly they may take effect - remains largely uncertain.

Officials familiar with past efforts to tighten restrictions say the effort could ultimately take years to see to fruition, and that the initiative could include anything from stricter fuel economy standards to the promotion of less noxious consumer products such as water-based paints.

The cost of such changes, by law, can not be considered by those crafting the new rules.

"It's hard to predict now what will be the silver bullet," said Richard Ruvo, an EPA official who oversees air quality in New York and New Jersey. "Nobody at this point really knows."

Officials who support the EPA's push to address the nation's air quality say more stringent rules have the potential to have a measurable impact on both vegetation and human health.

Higher concentrations of ozone, they say, can interrupt photosynthesis - the process by which plants produce and store food - while also reducing new growth and leaving ecosystems more susceptible to certain diseases.

That's particularly true in sensitive areas in the Adirondack Park above 3,000-feet, where plant life is already feeling the impacts of acid rain said, John Sheehan, a spokesman for the Adirondack Council.

"The combined stress is shortening the lifespan of spruce and fir trees, which are also succumbing to diseases they would not normally succumb to," he said. "The fact that these tree are dying off faster than we've ever seen is a very alarming trend."

For humans - particularly children, the elderly and those with lung disorders - higher levels of ozone can also make breathing more difficult, cause respiratory infections and aggravate chronic lung diseases such as asthma, emphysema and bronchitis, doctors say.

Dr. Norman Edelman, the chief medical officer of the American Lung Association, said people with asthma "know exactly when the ozone levels are higher" but that there are a certain percentage of people that are otherwise normal who will also be impacted by ozone.

While the new limits do show a sign of good faith on the part of the EPA, Edelman said, they do not go far enough. The World Health Organization, he noted, says a healthy level is 50 parts per billion - the limit presently in place in Canada.

While difficult to see and conceptualize, all residents should take an interest in seeing efforts to clean up the air succeed, he said.

"I think all citizens should be concerned about the fact that people they love are breathing unhealthy air," said Edelman, who practices in New York City.

Stephen Monn, a lung specialist at Glens Falls Hospital, said instances of smog-related lung issues are difficult to distinguish and are rare in the area, however.

Other air contaminants such as soot, dust and sulfur are far more pervasive problems in the region, said Monn, a former Los Angeles resident and runner who said there is a "clear cut difference" between air quality here and his former home.

"Ozone, to be perfectly honest with you, is the least of our problems," Monn said. "Airborne pollutants as a whole are contributing to hospitalizations, but to pull one out and say it needs to be treated, I'm not sure is going to be accomplishing too much."

Information collected by the EPA shows Saratoga, Washington and Warren counties are home to several large emitters of the chemicals that contribute to ozone.

The Lehigh Cement Co., Finch Paper in Glens Falls, the Wheelabrator trash burning facility in Hudson Falls and the Ball Corp. in Saratoga Springs are each listed as among the EPA's chief emitters of air pollutants in the three-county region.

Officials speaking on behalf of some of those companies said in recent interviews that it is far too early to tell what kind of an impact the newly proposed rules may have on their local operations.

But they also said that company officials are not opposed to the move, and that they will do everything possible to comply with whatever standards are ultimately adopted.

John Brodt, a spokesman for Finch Paper, said that while paper-making is an energy-intensive process, the company is making a concerted effort to reduce their energy use, and the emissions it creates.

Energy-saving measures put into place last year helped trim use by 4 percent, he said, and the company has also installed boilers that are specifically designed to control emissions of nitrogen oxide, one of the chemicals that creates ozone.

"The reality of the situation is that everything we do as humans has an impact," Brodt said.

"Our job is to minimize those impacts as much as possible."

Tim Matz, the corporate director of environmental affairs at Lehigh Cement, said the process used to make cement - which involves heating four raw ingredients to temperatures of 2,750 degrees - isn't likely to change anytime soon.

But the company is using as much low-emission technology as is possible and is well within the emissions levels imposed on them by their government permits, he said.

Any future expansions the company undertakes will take into account the new rules, Matz said. The costs of doing so, though, are unlikely to "be detrimental in terms of the cost-benefit analysis" and would not stymie growth, as some other manufacturers have suggested, he said.

"I'm pretty confident that any type of new controls that we may have to install would hold us up," said Matz, who works from Dallas, Texas but makes regular visits to the company's Glens Falls operations.

Representatives from National Grid and the New York Power Authority, meanwhile, said they are already taking measures to control emissions produced by their power plants, which are concentrated downstate.

National Grid is in the midst of a \$60 million program to reduce smog-contributing emissions at the company's power plants on Long Island while the NYPA spent \$144.5 million on similar efforts last year - the largest yearly investment in emission-control technologies the company has ever made.

Despite the push to adopt more stringent air quality regulations, it remains unclear exactly how vociferously the EPA's new limits will be enforced.

Supporters of the new rules point to the fact that no penalties have ever been imposed on the state despite years of exceeding federal limits.

Making tougher rules, they say, will only make a difference if enforcement is taken more seriously.

"We've got a real problem with air and water pollution going undetected and allowed to continue," said Sheehan, of the Adirondack Council.

Still, Sheehan and others concede that significant changes will ultimately only come about when residents begin to change their personal habits - purchasing more environmentally friendly products and cutting down the amount of time they spend behind the wheel of a car.

Robert Sliwinski, the director of the DEC's bureau for air quality planning, said the state has long struggled to help residents realize the environmental impact their lifestyle has.

In the future, New York may do more to explain this to the public, he said.

"Hopefully, people will begin to make the connection and to modify their behavior," Sliwinski said. "People want to do things that will help themselves. The challenge is in getting that message out there."