

LANCASTER COUNTY - A REGION AT RISK

Think of regions dealing with air pollution problems and you may form a mental picture of Los Angeles belted in smog, or a metropolitan area upwind of Philadelphia covered by a dingy, yellow refinery haze.

But people would instantly think of Lancaster. The county's lush farmland and rolling hills evoked in pictures? Impossible.

Yet, according to Jim Salvaggio, that is the case. Salvaggio, the Director of the Bureau of Air Quality for Pennsylvania's Department of Environmental Protection, addressed some special news and view targets to the Hourglass Foundation on June 17.

While Lancaster is not insulated with the only to see respiratory pollution that affects major industrial centers, the county is being inundated with a type of pollution that is equally toxic and deadly.

"OZONE AND AIR QUALITY IN LANCASTER PENNSYLVANIA"

In fact, Lancaster County is one of those regions in Pennsylvania that is currently not in compliance with the federal ozone levels. Salvaggio noted, "Ozone is the single most widespread air pollution problem we have in Lancaster County, and across the entire country."

Delivered to The Hourglass Foundation

THE FROM By WE FACE

Jim Salvaggio
Director of the Bureau of Air Quality
Pennsylvania Department of Environmental Protection

June 17, 1998

"What we need to do is get our citizens to recognize that they really have a problem. We must recognize that we receive pollution here, we produce pollution here and we pass it on to others." Jim Salvaggio

Salvaggio explained, "Ozone is not a pollutant in the same way that particulates, lead and mercury are. Ozone is produced in the atmosphere by a chemical reaction between nitrogen oxides and volatile organic compounds. When these pollutants are transported to the reaction zone, ozone is produced."

The problem, Salvaggio said, is also indicative of a much larger problem - the growing interdependence of communities across the country.

Ozone is produced in regions throughout the United States and traveling winds carry the ozone to other communities in their path.

"Population centers create ozone, but when they do they are only adding on to a base of pollution that is already produced elsewhere and moving into our area," Salvaggio said. "What we do here affects the people of Michigan, and what happens in Michigan affects us."

The "Ozone" problem, however, is a year-round air quality issue in June, July and August. Salvaggio explained that the heat produced in these months, coupled with the stagnant air patterns, creates an environment where producing ozone. "It is important to note," he said, "that sunlight is the key ingredient in the ozone recipe. Ozone breaks down at night without sunlight, and the problem is aggravated by winter's cold air."

With the aid of a revealing computer-generated graphic, which information compiled by nation-wide ozone measurements, Salvaggio was able to show how ozone production in the Midwest combines with wind patterns to create numerous "hot spots" in the East - with one of the major spots appearing in Lancaster County.

LANCASTER COUNTY – A REGION AT RISK

Think of regions dealing with air pollution problems and you may form a mental picture of Los Angeles bathed in automobile emissions enhanced smog, or Philadelphia covered by a dingy, yellow refinery haze.

Few people would instantly think of Lancaster. The county's lush farmland and rolling hills awash in pollution? Impossible.

Yet, according to Jim Salvaggio, that is the case. Salvaggio, the Director of the Bureau of Air Quality for Pennsylvania's Department of Environmental Protection, introduced some alarming news and vivid images to the Hourglass Foundation on June 17.

While Lancaster is not inundated with the easy to see particulate pollution that affects major industrial centers, the county is being inundated with a type of pollution that is equally toxic and dangerous – ozone pollution.

In fact, Lancaster County is one of those regions in Pennsylvania that is currently not in compliance with the federal ozone levels. Salvaggio noted, "Ozone is the single most widespread air pollution problem we have in Lancaster County, and maybe the entire country."

THE PROBLEM WE FACE

"What we need is to convince people in the area to recognize that they really have a problem. We must recognize that we receive pollution here, we produce pollution here and we pass it on to others." Jim Salvaggio

Ground-level ozone, Salvaggio explained, is not emitted directly, but is created when heat and energy are applied to other by-products. Petroleum-based product emissions react with other pollutants such as nitrogen oxides. When the sun's heat and light are introduced to that reaction, ozone is produced.

The problem, Salvaggio said, is also indicative of a trend many people wish to ignore – the growing interdependence of communities across the country.

Ozone is produced in regions throughout the United States and prevailing winds carry the ozone to other communities in their path.

"Population centers create ozone, but when they do they are only adding on to a base of pollution that is already produced elsewhere and moving into our area," Salvaggio said. "What we do here affects the people of Maine, and what happens in Minnesota affects us."

The East Coast, however, is a prime target for ozone pollution in June, July and August. Salvaggio explained that the heat produced in those months, coupled with the stagnant air patterns, create an excellent ozone-producing situation. (It is important to note, he said, that sunlight is the key ingredient in the ozone recipe. Ozone breaks down at night without sunlight, and the problem is alleviated by winters' cold air.)

With the aid of a revealing computer-generated graphic, using information compiled by nation-wide ozone measurements, Salvaggio was able to show how ozone production in the Midwest combines with wind patterns to create numerous ozone "hot spots" in the East – with one of the major spots appearing in Lancaster County.

INCREASING HEALTH PROBLEMS

What people are now beginning to understand, Salvaggio said, is the degree of negative health affects caused by ozone. Not only can it exacerbate problems associated with asthma and heart disease, ozone pollution can cause new health problems.

"When ozone enters the lungs, it causes abrasions, much like a sunburn does to the skin," Salvaggio noted. The abrasions can last from three to five days and during that time the lungs will ooze fluid. If the ozone problem is not taken care of, it will continue to cause abrasions in the lungs and they will continue to ooze.

"A person growing up in an area of high ozone levels will have approximately 80% of the lung capacity as a dweller in a non-ozone area," Salvaggio stated.

Unfortunately, Salvaggio observed, the times of highest ozone concentration -- June, July and August -- are the times when people want to be outside.

WE ALL LIVE DOWNSTREAM

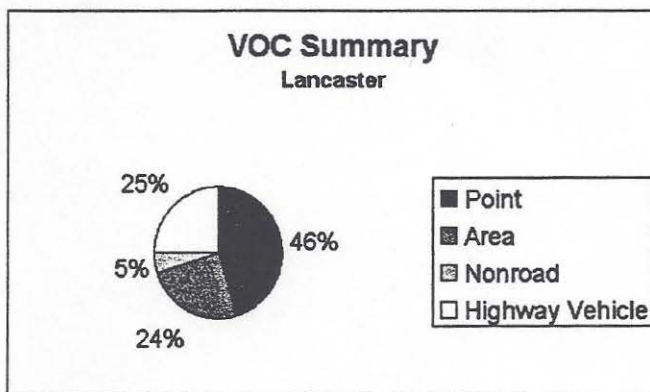
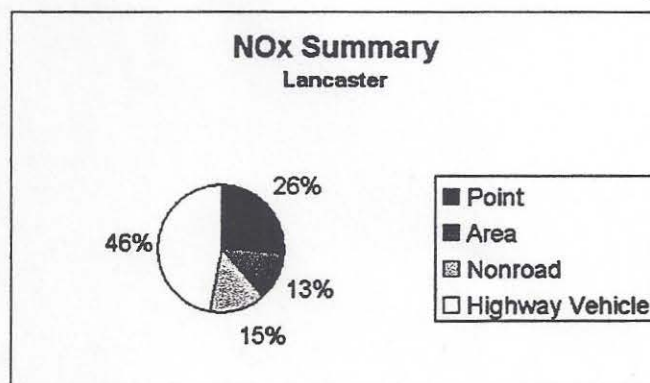
With the help of various charts Salvaggio showed that highway vehicular traffic is responsible for producing 46% of the nitrogen oxide (a major component of the ozone mix) in Lancaster and is also responsible for 25% of the Volatile Organic Compounds (VOC's) produced here as well.

Other producers of nitrogen oxide and VOC's are classified as point sources (industrial activity), area sources (home products such as paints, cleaners, solvents) and non-road sources (boats, tractors, lawn mowers).

The state has been able to identify the major industrial producers and has been working with them to deal with the problem.

"Brunner Island, for example, is a big nitrogen oxide producer," Salvaggio said, "but PP&L has been very cooperative with us in working toward a solution."

The state has also petitioned the EPA to force polluters South and West of us to reduce their emissions.



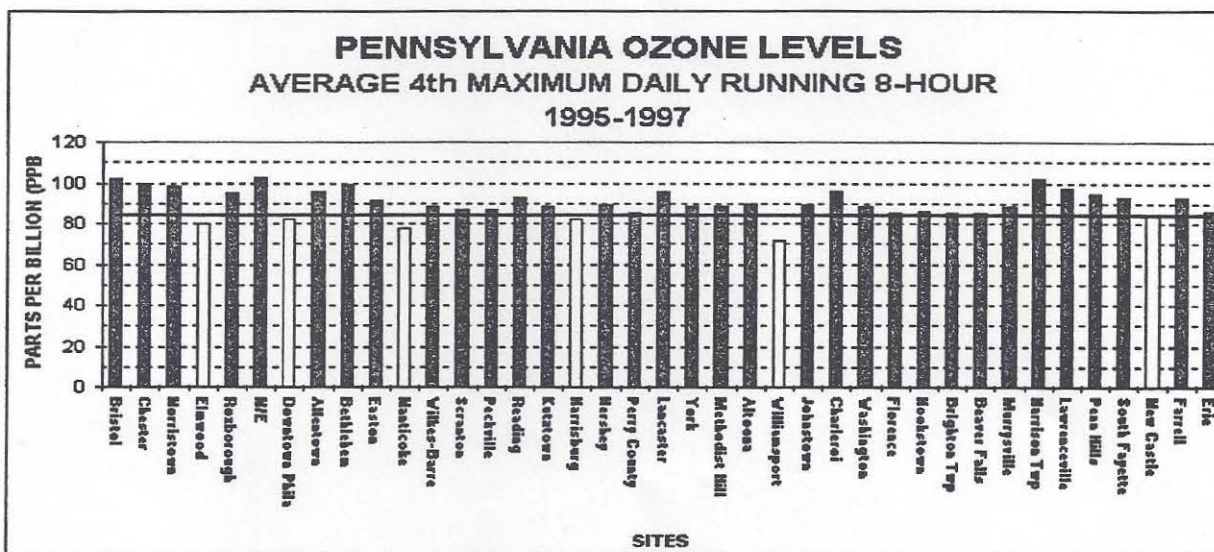
The charts above depict sources of ground-level ozone pollution in Lancaster County. Ground-level ozone is formed when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react in heat and sunlight in the earth's lower atmosphere.

Source: Pennsylvania Department of Environmental Protection

LOOKING INTO THE FUTURE

Air quality is improving, Salvaggio noted, but the problem is far from solved. Growth and resulting increases in vehicle use and energy consumption continue to present challenges to areas such as Lancaster. The U.S. Environmental Protection Agency just tightened the health-based standard for ground-level ozone, making it more difficult for regions to meet clean air goals. Salvaggio presented charts depicting ozone levels during the summers of 1995 through 1997 under the new standard (see chart below). Of the state's 39 air quality monitors, only six areas would have met the EPA's new standard. Oddly enough, one of these six "clean air" areas is Downtown Philadelphia.

"They have other air quality problems," explained Salvaggio. "It just so happens that ground-level ozone isn't one of them."



WHAT WE CAN DO VOLUNTARILY

In addition to the Commonwealth's pollution prevention efforts, there are a number of initiatives currently underway to encourage citizens to help provide clean air, Salvaggio said. Two of the more notable are the Susquehanna Valley Ozone Action Program, and the Susquehanna Valley Ozone Stakeholders.

Ozone Action's main thrust is to encourage voluntary efforts by citizens. Its first priority is to educate the public that the problem exists, and that it affects everyone (though most notably children and the elderly). Its second priority is to offer information to individuals who wish to help the situation.

Some of that information is already known – such as the need to car pool. Other information is not as well known – such as the suggestion that people fuel their vehicles at night when the gasses released during refueling do not get "cooked" into ozone. Or the suggestion that people consider electric mowers for their lawns. (One gas mower operated for one hour, Salvaggio said, has the same impact of driving a car 300 miles.)

OZONE STAKEHOLDERS

The Ozone Stakeholders is comprised of groups in Pennsylvania who pull together cross-sections of the community to research the ozone issue in their specific areas. The state Department of Environmental Protection will convene a Stakeholders group for South Central Pennsylvania this fall through July of 1999 so that specific recommendations can be developed by August of 1999.

In closing, Salvaggio noted that while regulatory and statutory systems are able to handle the pollution problems facing Pennsylvania, "what we need is to convince people in the area to recognize that they really have a problem. We must recognize that we receive pollution here, we produce pollution here and we pass it on to others."