2002 Public Hearing Report

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Wednesday, April 10, 2002 Trenton, New Jersey

INNOVATIVE SOLUTIONS FOR CLEAN AIR

EXECUTIVE SUMMARY

The Clean Air Council received comments from the public on improving New Jersey's air quality through both societal and technological innovations. Testimony centered largely on mobile sources and included suggestions for increased mass transit, traffic control, "smart growth," diesel improvements as well as adoption of the LEV II (Low Emission Vehicle) program. Testimony also supported green buildings, telecommuting opportunities and expediting Title V Permits. The Council's deliberations reached consensus on all of these issues with the exception of the LEV II program. The Council concluded that at this time full adoption of the LEV II program in New Jersey would be too expensive and too complex. However, the Council recommends that New Jersey endorse some available innovations derived from the California program. Return to top of page

SOCIETAL RECOMMENDATIONS

1. Because New Jersey's burgeoning growth impacts air quality, the Council recommends that the State's Municipal Land Use Law be strengthened and the State Development and Redevelopment Plan be promoted to more tightly control New Jersey's land-use planning. A different land development pattern, one that considers mixed use, can significantly change travel behavior. The Council recognizes the complexity of societal issues in New Jersey and urges continued in-depth analysis by the Department and the Administration and the Legislature with opportunities for informed contribution by county and local governments and by citizens so that the State may continue to more forward in this area.

2. The Council recommends that the State actively pursue the "Smart Growth" portion of the State Plan in order to reduce the increasing VMT (Vehicle Miles Traveled) statewide, recognizing that significant improvements in public transportation infrastructure will be required to meet this goal. Offering incentives for bike paths and walkways throughout the state will also reduce VMT.

3. The Council recognizes the air quality impact of ever increasing traffic congestion and recommends that the State promotes and advocates ride-sharing programs, telecommuting opportunities, and increased park & ride options, utilizing CMAQ (Congestion Mitigation & Air Quality) funding for these purposes.

4. Because improving the flow of traffic will decrease air pollution, the Council recommends that municipalities in conjunction with the State and Counties improve the flow of traffic and lessen congestion by taking the following steps: providing left- and right- turn lanes at many intersections; reconstructing certain intersections to eliminate confusion, jogs, and offsets which interfere with signal timing and traffic flow; improving signal timing; converting "isolated" signal installations from fixed timing to actuated operation; putting signals on "flashing" mode at night where traffic flows permit; synchronized, interconnected signals favoring inbound or outbound traffic during rush hour, the placement of "No Right Turn On Red" signs; synchronization where appropriate during the day and other approaches, such as bike paths, bus shelters, carpool / vanpool encouragement. Municipalities in conjunction with the NJ DOT (Department of Transportation) and the MPOs (Metropolitan Planning Organizations) should revisit these issues especially in congested urban areas.

5. The Council recommends that the NJ DEP (Department of Environmental Protection) and BPU (Board of Public Utilities) serve as catalysts to bring together State Agencies such as NJ DOT, State Planning and Education to more aggressively coordinate policy and program priority recommendations offered in the CAC Hearing report.Return to top of page

TECHNOLOGICAL RECOMMENDATIONS

1. The Council has concluded that adoption of the California LEV II program is not feasible at this time. Although the LEV II program represents innovation, the Council is convinced that many problems serve as barriers to the implementation of an adopted program.

The LEV II program is very complex and still evolving. In order to adopt, New Jersey would have to provide auto manufacturers a two model-year lead time and in order to withdraw a two-year transition again. Changing programs in any shorter time would be in violation of federal law, and could provoke a lawsuit.

California has costly public outreach and has expended large sums for the purchase and lease of ZEVs at all levels. In this period of fiscal distress, New Jersey may not be able to undertake this expensive program. The Council believes that present federal Tier II standards, as they take effect in 2004, will show significant air-quality improvements.

Finally, the Council is disturbed that New Jersey would be completely subject to decisions made in California. Participation in the LEV II program does not offer any flexibility of participation in the decision process in California. The Council cannot recommend participation in LEV II at this time.

Although the Council cannot recommend participation in the LEV II program at this time, it does recommend that NJDEP focus on the technological innovations already developed in the California LEV II program. To a great extent, these new technologies have doubled operating efficiency of advanced motor vehicles. The Council further recommends that the State promote, through public awareness, the purchase of Ultra Low Emission Vehicles (ULEV) and cleaner vehicles, hybrid vehicles and fuel-efficient vehicles by state, local governments and individuals. The Council recommends that the State promote public awareness of the green vehicle-labeling programs for motor vehicles in the State.

2. The Council recommends that the State begin to retrofit its diesel fleet in order to reduce fine particulate emissions and the use of biodiesel fuel to reduce such emissions. It may not be cost effective to retrofit the entire State fleet but retrofits should be undertaken when appropriate for the age of the vehicle. These measures should also be extended to contractors' vehicles and equipment on all state-funded construction projects, and transportation service providers.

3. The Council recommends that the State support the US Green Building Council and the LEED (Leadership in Energy and Environmental Design) rating system by adopting a policy that all new state buildings must adhere to LEED and by providing financial incentives for all new buildings in the State to adopt the LEED rating system. Indoor air quality can be improved through building design and specification.

4. The Council recommends that the Department aggressively address the backlogged Title V Permit Program by assessing the availability of resources, by investigating other successful state programs and by considering third party certification by licensed environmental professionals which can provide a mechanism for streamlining the overall program. The Department, in order to enhance effective clean air compliance, should consider the use of private resources to augment existing public resources.

5. The Council recommends that the public policy of New Jersey should be to increase the utilization of public transportation to the maximum extent possible. This policy should encourage more light rail projects as well as programs that better coordinate and connect existing public transportation systems. In addition, increased ridership will justify more buses, more routes and more frequent scheduling. Improvements in bus stop shelters, clean and safe bus and train depots and continuing public relations emphasizing the benefits of public transportation will all improve mobility in New Jersey without compromising air quality. Alternative fuels and/or motive power for buses will help reduce emissions.

6. The Council continues to support a statewide public awareness and education program with emphasis on the impact of automobiles on air quality in general and air toxics in particular. This program should continue to stress the importance of reducing VMT, the advantage of the use of public transportation, the benefit of the purchase and use of LEVs, ULEVs, SULEVs and ZEVs (respectively, low, ultra-low, super ultra-low and zero-emission vehicles), as well as the importance of good vehicle maintenance.

7. The Council commends the State for its use of renewable, alternative energy to replace polluting fossil fuels and encourages such programs throughout the State.

8. The Council continues to support undiminished implementation of the enhanced I/M (inspection and maintenance) program for automobiles, and expansion of the heavy-duty Diesel Vehicle Inspection Program. Return to top of page

SCOPE

New Jersey is the most densely populated state and still growing. It is also located in a region of dense population. Although the State has worked consistently at complying with NAAQS (National Ambient Air Quality Standards) since the passage of the Clean Air Act in 1970 and has improved its air quality, it is still out of compliance for ozone. Therefore, the State needs to develop new strategies to meet recently enacted federal standards for ozone and fine particulates. New Jersey also needs to reduce air toxics.

Ground level ozone is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react in the presence of sunlight. With respect to VOCs and NOx, New Jersey has already achieved approximately 95% of the reductions which would be required to meet the one-hour ambient air standard for ozone. However, the remaining 5% may prove to be difficult to achieve because mobile sources are the main problem and are difficult to control. Achieving adequate reduction on high ozone days will likely require greater attention to short-term emissions sources and may require specific control strategies.

Air toxics and fine particulates (PM 2.5) remain a public health concern in New Jersey. Efforts to better understand the nature and effects of these pollutants need to be continued.

This public hearing solicited advice from interested parties on new ways in which New Jersey can meet clean air goals. Return to top of page

BACKGROUND

Stationary and mobile sources of air pollution in New Jersey have been the subject of legislation and regulation in order to bring the State into compliance with the requirements of the Clean Air Act Amendments (CAAA). The first Federal Clean Air Act (1970) established the basis for achieving National Ambient Air Quality Standards (NAAQS) in the United States. Each state was directed to write a State Implementation Plan (SIP) describing its strategy for attaining and maintaining these federal standards. When an area does not meet the Clean Air Act standards, it is "not in attainment" and New Jersey is still not in attainment for ground level ozone.

New Jersey has long been in the forefront of programs aimed at clean air. It was the first state to implement an inspection and maintenance program for motor vehicles in February of 1974. Emissions of VOCs during gasoline transfer operations are now under strict control at marine terminals, refineries, gasoline storage facilities and tanker trucks all the way to the gasoline stations and the motor vehicle. Innovative and long-range solutions to air quality problems is a continuing tradition in the State.

At the present time, the clean generation of energy and advanced auto emissions control seem to offer the most beneficial path to reach clean air goals. Although cars are cleaner than in the past (vehicles built before 1981 emit 10 to 15 times as much pollution as a new vehicle) the number of cars in New Jersey increases yearly and the number of vehicle miles traveled (VMT) continues to increase. Yearly gains in pollution control have been countered by these

yearly increases in VMT. Also, there needs to be greater focus on short-term emissions from the generation of energy during peak ozone periods.

The keynote speaker for this annual hearing was Dorothy Bowers, Chairperson of NACEPT (National Advisory Council for Environmental Policy and Technology). Her summary of NACEPT's current report on "The Environmental Future" was a comprehensive analysis directly related to this hearing's subject matter. The very name of this group correctly emphasizes both policy, which includes "societal" aspects of environmental improvement and technology, which includes the "mechanical" or "engineering" aspects.

Examples of the "societal" aspects would be "sustainability" and the recognition that "Population Drives Environmental Issues." In New Jersey "smart growth" considerations as discussed by Commissioner Campbell and Mr. Rodriguez of the Office of State Planning fall squarely in this category together with the realization of the political, intellectual and practical concerns associated with this topic.

Technology and engineering solutions have traditionally been the mainstay of New Jersey's air pollution control program. However, new approaches have been suggested at this hearing. A majority of participants strongly urged the adoption of the LEV II program for New Jersey. Other suggestions included the use of alternative fuels, tax incentives for low emission vehicle purchase and "smart growth" in state and local planning.

Even though New Jersey has more miles of highway per square mile than any other state, over 60% of the State's interstate system operates at or above capacity during peak use. Adoption of the LEV II program and implementation of the State Plan were central recommendations for improving New Jersey's air. Also, the application of advanced science and technology can contribute to reduced emissions and compliant air quality. Return to top of page

ORAL TESTIMONY

Commissioner Bradley Campbell, NJ Depart. of Environmental Protection

The current Governor has a vision for the improvement of the environment in New Jersey. In the current budget crisis this is the first time that funds for NJDEP have not been cut, but increased. This Governor has increased corporate taxes to insure stable funding for the environment.

The enormous challenge facing this administration is in the area of clean air. All of New Jerseyans currently breathe unhealthy air. The connection between dirty air and health has now been proven with links not only to asthma, but also to pulmonary diseases. Currently, the federal government is abdicating its responsibility for clean air with President Bush's "Clear Skies" proposal. It is really a "brown skies" proposal for New Jersey. Dirty power plants, upwind of our state, will increase our air quality problems.

We need to change the way we do business. The Title V backlog of permits clearly demonstrates that we are not protecting the health of our communities. The problems of "smart growth" in New Jersey are critical. We need to redevelop older developed areas (Brownfields) and improve the transportation infrastructure. New Jersey was once a leader in environmental protection. We need to reassume that role.

In terms of enforcement, we need outcome-based enforcement. Public health benefits will come from smart enforcement. Less time should be spent on the good actors and more time on non-compliant industries. Enforcement innovations should include third party certification of permits and a greater emphasis on the Gold and Silver Track programs. Return to top of page

Dorothy Bowers - Chair, National Advisory Council for Environmental Policy and Technology (NACEPT)

Because NACEPT represents a cross section of people with broad expertise, we were asked to look at how US EPA might envision the future of environmental protection. Many of our recommendations to EPA have relevance to the environmental future of New Jersey. One of the key ideas in the NACEPT report was that population and demographics are forces in all environmental issues since they drive consumption of natural resources.

It is important for New Jersey's leaders to emphasize sustainable development for the State. Supporting "Smart Growth" by redeveloping older cities that have infrastructure is one of the ways to support the environment. Superior technologies also contribute to sustainability. For instance, new LEV vehicles in New Jersey will certainly reduce air pollution. Using the GIS for mapping and planning is another technological advance put to good environmental use.

The development and use of renewable energy sources are also critical to our environmental future. Hopefully, we will see the day when hydrogen becomes a principal energy source.

New Jersey also needs to look at water supply and water quality as the same problem. Watershed protection in the State Plan is critical to appropriate growth. It is also important to emphasize biodiversity and to work to preserve it. A major problem in New Jersey involves invasive species. The State will need to work to prevent such species from wiping out indigenous plants and animals.

The development of efficient technologies for controlling air pollution, the use of the GIS for watershed mapping and tree cover assessment, Cumulative Risk Assessment and product stewardship are all new innovations that need to be incorporated into New Jersey's air quality program. Return to top of page

Carlos Rodrigues - Director - Department of Community Affairs, Office of State Planning

The State Plan should be the bellwether for growth in New Jersey. The State has had a state plan since 1934 with revisions in the 1950s and 1970. The disbursement of the population after WW II was disastrous for state growth. This development was characterized as sprawl, low density, single-family use. This kind of growth increased pollution. This State's best interest would be served by compact development where people can use mass transit and can walk or bicycle locally. This is called "Smart Growth."

There is science behind this kind of growth. The benefits from compact mixed development are many. People are four times more likely to walk to stores and businesses with compact development. People drive 40 to 50% less miles per day and have 50% less vehicle trips.

The current State Plan is not a technological fix, but focuses on the pattern of development. Earlier State Plans focused on pollution from stationary sources; this plan focuses on mobile sources. The greater the disbursement of population the greater the air pollution. Studies have shown that development of transit-friendly forms in traditional compact neighborhoods change the way people travel.

The alarming increase in obesity statewide has something to do with development patterns. New Jerseyans walk less. There are 1.3 million kids in public school and ½ are bused by 20,000 school buses costing the State $280 million per year. Scores more are transported by parents or nannies. Land development patterns have caused this increased air pollution. Land development influences behavior. Compact development would have kids walking to school again. However, it took us 50 years to get to this point and it will take time to undo the harm.

New Jersey has a very extensive train rail network, although some of it has been abandoned. However, the old 19th century spoke and hub model needs to be adapted to today's needs. On demand smaller vehicles for this more dispersed population should be provided by the State. We need renewed interest in the value of the old infrastructure in order to see cities like Camden come back. Housing and jobs are returning to places that would qualify as centers under the State Plan. Return to top of page

Frank Sherman, AIA - Hillier Associate LEED (Leadership in Energy and Environmental Design) Program

It is estimated that 25% of all preventable ill health in the world results from poor environmental quality. More than 17 million Americans suffer from asthma and respiratory illnesses and 4.8 million of them are children.

Economic and environmental well being are inseparable. Our economic strength is tied to the wise use of natural resources. The economic future in New Jersey needs to be based on sustainability. Sustainable development is the use of natural resources in a way that meets our needs today without depleting those resources and without hindering the ability of future generations to meet their needs. This is not a simple challenge for New Jersey.

LEED is a program that supports the construction of environmentally sound buildings. Green buildings will need to become a part of a balance between economic growth and natural resource preservation. Commercial buildings in the US consume more than 36% of all primary energy usage and 65% of the total US electricity consumption. These buildings use 12% of all the potable water in the US and 40% of all raw materials globally. Waste is not a problem when natural resources are ample. In nature waste becomes the food for another organism. Humans need to begin to look at pollution as a design failure. If it can't be sold, we shouldn't produce it and should design it out of the process.

From the perspective of human health, indoor air quality may well pose the greatest environmental risk. This exposure comes from off gassing from carpets and furniture, sunlight falling on plastics and other materials, construction products, cleaning products, office machines, mildew and molds, and a variety of other sources. Currently, one of the most effective ways of improving air quality in commercial and public buildings is through the US Green Building Council's LEED Green Building Rating System. LEED is organized into five environmental categories. The LEED system evaluates sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality. Improving indoor air quality through careful design specification is achievable and necessary.

My primary recommendation here today is that New Jersey study and consider adopting the LEED Green Building Rating System as the performance standard for all State funded public building projects, and as an incentive for private development throughout the State.

The LEED program has created higher baseline standards for buildings than state codes provide. The new urbanist movement for traditional towns and sustainable development also focuses on development in areas that preserve open space. This is "Smart Growth" planning in concert with New Jersey's State Plan. Return to top of page

William Baker - EPA, Air Senior Policy Advisor

EPA's innovations in its air program have included lead phase-down, acid rain program, ozone transport and national LEV program. These have been great achievements. EPA tries to problem solve, not just implement old programs. EPA adopts new programs as the economy changes and technology improves.
EPA's most innovative programs are in the areas of market-based regulation, partnership programs and voluntary programs. Energy Star is a good example of a voluntary program that has worked well. The Green Vehicle labeling program is another example of a successful new EPA program.

Our current activities include a new program for green airports. Ground operations at these facilities are great sources of air pollution. We are also initiating a "Clear Skies" program in order to reduce the SO2 and NOx emissions from power plants. This is an attempt to update the Clear Air Act Amendments of 1990. Another innovation is the adoption of General Permits or Self-Certification. EPA will do random checks and audits to make sure things are done properly. But, Self-Certification allows for a lot more compliance, more rapidly. Return to top of page

Councilwoman Alison Miller, West Windsor Township - Representative of League of Municipalities

All of New Jersey's 566 municipalities are members of the League of Municipalities, which is a non-profit association of local governments in New Jersey. The League's annual convention in Atlantic City is the largest annual municipal conference in the US. The League has undeservedly obtained a reputation as an entity opposing the State Plan. In fact, the League supports the goals and objectives of the State Plan; they support the inclusionary dialogue that is the cross-acceptance process. On the other hand, the League does not support attempts to mandate the Plan, to erode home rule and to take away land-use decisions from those who live in our communities.

An example of the State Plan working is the effectiveness of the new light rail lines in Northern New Jersey; the award-winning Hudson Bergen Light Rail, serving about 8,750 passengers per day, and the Newark City subway system, with about 14,000 passengers per day. These projects have succeeded in getting some people to switch transportation modes and reduce air pollution.

However, the State Plan also seeks to concentrate growth into high-intensity, mixed-use areas, the so-called newer suburbs, the places where development pressure is greatest. Retrofitting the existing development into a new pattern does not seem possible. There are a lot of people who like sprawl. They choose to live auto-dependent lives in large-lot, single-family homes. They don't want mixed use. Many of them are two-earner families who have chosen to locate midway between the two jobs. Many of them expect to change jobs frequently, so a walk to work is not a big part of their location decision.

The town of West Windsor is an example of a municipality that has many problems trying to comply with the State Plan. Light rail is suggested, however, we do not have sufficient density to support light rail. We do have enough density to produce massive traffic congestion. The State Plan classified the Route 1 Corridor as a regional growth center and this is causing problems for a town that is already burdened with commuter traffic and over development. The State Plan is recommending mixed use, but we are finding it problematic for our town. One size fits all is not sensible planning and West Windsor, for one, needs more autonomy.

If the State Plan is to succeed, it will take funding of infrastructure improvements. It will take adherence to tougher and more expensive pollution standards. It will take the best efforts of housing advocates and growth advocates and preservation advocates. It will take the cooperation of private and public sectors, and it will take an unprecedented level of commitment at all levels of government, local, state and federal. Return to top of page

Joseph Della Fave - Ironbound Community Corporation Executive Director

The clean air problems in the Ironbound district of Newark are severe. Our area is 1 ¼ square miles housing 50,000 people. We are surrounded by highways, chemical industries and trucking concerns. We house New Jersey's largest incinerator and a major contaminated site. There is extensive traffic and parking congestion within our community. We are close to the airport. There is only ½ acre of open space for each 2,000 people; the national average is 7 ½ acres per 1000 people.

50% of our poorest families have children who have asthma and the number one cause of hospital admission and school absences in the Ironbound area is asthma. There are two public parks that have been closed for a number of years because of contamination. Development of Brownfields has just resulted in capping the pollution and this leaves the community with unmitigated pollution.

We need ways to mitigate air pollution. We believe that State support for mass transit would reduce the traffic and truck problems. Subsidizing both passenger and freight transportation would help. The Ironbound Section needs a reduction in truck traffic, the enforcement of factory emissions and massive tree planting. We need the State to rid this area of transfer stations and provide funding for urban parks and green corridors throughout the community. We are asking the Clean Air Council to help. We are looking for environmental justice for an area of New Jersey that has experienced a decline in the quality of life from pollution. Return to top of page

Steve Flint - NY Department of Environmental Conservation, Chief of Light & Heavy Duty Vehicles Section, Bureau of Mobile Sources, Division of Air Resources

Like New Jersey, New York also faces problems with reducing air pollutants. Metropolitan New York is a non-attainment area for ozone. We have adopted a wide range of controls from permitting smokestacks to Stage II vapor recovery to I/M vehicle programs. As we have learned more about the impact of toxics on the respiratory system and understand the growing inventory of mobile emissions, New York has opted to push auto technology as the major impetus for reduced emissions. That is why we adopted the LEV II program in the early 1990s. Even though we have had litigation, we are still committed to implementing a California program in New York.

Back in 1994, the Ozone Transport Commission called for implementation of the California LEV program region-wide. This led to the auto industry working out a National LEV program with EPA. Even though EPA has the Tier II program, New York opted for the stricter California program because of our air problems. These advancements have led to onboard diagnostics (OBD), which measure small changes in operating parameters, which can cause a change in emissions. Cars are routinely meeting ultra low emission standards which is an 84 percent reduction in hydrocarbon emissions compared to the federal Tier 1 level which was the rule 10 years ago.

One of the elements of the LEV II program is the declining fleet average which requires the overall sales fleet of each manufacturer to be cleaner each following year. As a result, new emission control technology is evolving from a few smaller cars into broader application over the entire fleet.

When the Ultra Low Emission Vehicle was developed in the early 1990s, it was doubtful that it would be technically or economically feasible. But, by 1997 the first Ultra Low Emission Vehicle certifications were being sold and ULEV technology is now almost 30 to 40 percent of the sales fleet. By the end of this decade, eight years from now, the required fleet average will be ULEV or cleaner.

Under the LEV II program, the six largest manufacturers are required to sell a specific portion of their fleet as Zero Emission Vehicles. Currently, that means battery electric vehicles. Under the more recent programs, California has also established a credit mechanism so that certain exceptionally clean vehicles can also receive ZEV credit, and other advanced technology vehicles, such as hybrid electric vehicles, can also receive credit as partial Zero Emission Vehicles - or PZEVs. These cars will require a 150,000-mile warranty.

Manufacturers are already responding to the PZEV market. Honda markets a natural gas-fueled vehicle and Nissan has a conventional gasoline-fueled vehicle not available in the Northeast because our fuel is not as clean as California's.

Many certified PZEVs will be hybrids. In New York the Alternative Compliance Option will make it possible for more vehicles to qualify as PZEVs.

Our progress in the area of heavy-duty vehicles has been impressive. We are now using continuous regenerating technology particulate traps on all NY transit buses. NYC will now be retrofitting the entire diesel fleet. This creates a 50% reduction in hydrocarbons. There is now a plan to retrofit school buses with similar technology.

We think technological developments will be incremental in nature, building upon one another to effect clean air.
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Steve Bauman - Jersey Central Power & Light, Senior Project Consultant

Energy efficiency is one of the keys to reducing air pollution in New Jersey. That's why we support New Jersey Clean Energy. This involves residential, commercial and industrial services. We provide rebates for wind power, fuel cells and biomass. These new technologies introduced by the energy companies have helped to conserve energy. Utility bill rebates for energy efficiency is one way we encourage conservation.

Another program is New Jersey's SmartStart Buildings. We pay a design team to build an energy-efficient building. We pay for brainstorming energy and the incremental design costs. If a building has a 40 year life span and 50 percent of the cost is operation and maintenance and only 11 percent is initial cost, there is significant payback in a life-cycle of that building.

It is for this reason that we are supporting the GeoExchange technology, which uses the earth as a heat source and a heat sink. Electricity moves this heat in both directions. There is up to 47% savings in energy in these systems. JCPL is encouraging these retrofits. This represents the lowest life-cycle cost even though the initial cost is slightly higher.

We recommend that the Council continue to support ratepayer funded utility rebate programs. Return to top of page

Robert Campbell - NJ Sierra Club

The NJ DEP Bureau of Air Monitoring in their last four Air Quality Reports stated that "Ozone and particulates are NJ's two most pervasive air quality problems and more measures are needed to ensure health standards." Years go by and we still have not taken those "measures." Since motor vehicles contribute nearly half of all pollutants that cause ozone, controlling the emissions from motor vehicles is critical to achieving clean air in New Jersey.

Because of the popularity of SUVs, minivans and small trucks, reductions in mobile emissions have been further diminished. For the first time ever, SUV's, light trucks and vans accounted for more than 50 percent of all vehicles sold in 2001.

In January of 2000 the Massachusetts Department of Environmental Protection announced that the State would be adopting the California LEV II standards for tailpipe emissions. These standards would apply the same emissions requirement of passenger vehicles to SUVs and light trucks beginning in the year 2003. In November of 2000 New York State adopted similar regulations, as did Vermont.

The failure last month of the US Senate to approve an increase in the CAFÉ (Corporate Average Fuel Economy) standards means that only one opportunity remains for New Jersey to significantly reduce the health problems in New Jersey. We need to act now to reduce the mobile emissions of vehicles registered in the State and protect the health of 8.4 million residents. New Jersey has an obligation to protect the health of its population.

Therefore, the Clean Air Council needs to work for the adoption of Senate Bill 121 and Assembly Bill 409, calling for New Jersey to adopt a more stringent California Low Emission Vehicle, LEV II, regulations for vehicles sold in New Jersey beginning in the year 2006. Return to top of page

Jeff Tittle - NJ Sierra Club

Billions of dollars have been spent by the State over the last 30 years in order to curb air pollution. However, the quality of New Jersey's air is still substandard. We still have a serious problem.

Our Title V Permit Program is very problematic. Only about 30% of the facilities are permitted. We also need to speed up the Title V permitting. New York is at 70% permitted and Pennsylvania 79% permitted for the same kind of facilities. There needs to be better performance and coordination at the air enforcement division at DEP.

The BPU needs to look at air quality when it looks at energy. Likewise, the DOT (Department of Transportation) needs to be concerned with New Jersey's air quality instead of purchasing diesel buses with no retrofits. NJ Transit and the Department of Commerce should also coordinate clean air incentives. All branches of government must be concerned with the health of residents.

The introduction of the California Car to New Jersey would make a difference in the fleet and a trip reduction program might reduce VMT. Businesses could use LEVs to transport employees to work cutting down on parking spaces and the need for two-car families.

Encouraging the use of electric lawn mowers will cut down on air pollution. Also, the use of two-cycle engines on motorcycles, jet skis and boats needs to be regulated. We need to look at smart highways to try to move cars faster and more efficiently. Return to top of page

Travis Madsen - NJ PIRG (Public Interest Research Group)

We hope the Clean Air Council will recommend innovative ways of reducing the levels of smog and cancer-causing toxics in our air. With a 2007 deadline for northern New Jersey to meet the decades-old public health standards for smog and a tougher 88 ppb standard for air toxics, New Jersey needs to be more aggressive about air quality.

New Jersey's air quality is so bad that about 95% of state residents breathe unhealthy air throughout the summer. We made progress, but then it bottomed out in 1994, 8 years ago. So, we need to make significant improvements in air quality.

The VMT in New Jersey in the last 30 years increased at a rate three times faster than population growth. Also, the recent EPA modeling data for hazardous air pollutants (HAPS) in New Jersey showed that our residents are exposed to higher levels of toxic chemicals in outdoor air than any other state but New York. The average cancer risk for New Jerseyans is one thousand times higher than the goal set in the 1990 amendments to the CAA.

Because we have had no significant improvement in ozone exceedences since 1994, we have increases in asthma and respiratory illnesses. Our air quality will never be improved unless New Jersey takes the following steps:

1. New Jersey should adopt the California LEV II program. Since California, New York, Massachusetts and Vermont have already adopted this standard, New Jersey has data to rely on and car manufacturers are working with those states.

2. New Jersey should adopt a policy of "Smart Growth," by working to lower VMT and by promoting mass transit and renewable energy.

Most of New Jersey's health risk stems from diesel particulates and benzene from gasoline, 88 % coming from mobile sources. A recent 20-year study now shows that smog actually causes asthma. This makes it necessary to curb air pollution from cars in New Jersey. We need to join Massachusetts, Vermont and New York in adopting the California standards and work toward cleaning up the air. This will accomplish three things:

1. It will strengthen emission standards for all new cars.

2. It will promote a transition to low-emission technology

3. It will lessen our dependence on foreign oil.

It is estimated that emissions will be 20% less in 2020 if New Jersey adopts the LEV II program than if the State stays with the federal program. In addition, improving transit-friendly design, energy efficient buildings, urban redevelopment and reducing VMT will all contribute to reducing air pollution. Return to top of page

Stephen Paul - Princeton University

Alternative sources of energy that are clean and renewable should be an innovation embraced in New Jersey in order to

improve air quality. Making us more energy independent is also important for our safety as a nation. There is an alternative fuel that is renewable and cleaner than petroleum-derived fuel. It was introduced in 1999 to the Department of Energy.

Currently, there are cars on the road that can utilize alternative fuel, such as the Taurus, the Ranger, the Voyager and the Caravan. These are called flexible fuel alternative vehicles and they can run on alternative fuels. The benefits of these vehicles has not been realized in this part of the country because they were designed to run on ethanol, which is only available in the Midwest. Unfortunately, there is no infrastructure for ethanol in the East.

However, the new fuel that we have synthesized is made out of materials that are available and renewable and this is critical to the success of our fuel. We can turn paper, agricultural waste, food waste and wood waste into fuel components. We also use hemicellulosic biomass, which is a large part of corncob that has not been transformed into ethanol. There is a lot of wood and cellulose waste so the fuel can be made locally. This is a liquid fuel that mixes with gasoline so it does not require development of a huge infrastructure. It mixes freely with gasoline so there are no complicated fuel management issues.

The emissions reductions are quite substantial with this fuel. It is made from over 60% renewable sources and 100% non-petroleum sources. It is essentially sulfur-free and has an oxygen content 19% higher than oxygenated fuels. This fuel can create a 49% decrease in non-methane hydrocarbons and 24% decrease in carbon monoxide. The State fleet could use this fuel if they were able to use alternative fuels.

Currently, this fuel is being used in Philadelphia on a trial basis. There is some reluctance on the part of investors to make this commercially available until they know there is a market. If the State of New Jersey adop ted this for the State fleet, it would become more feasible for the public. This fuel could then become more widespread and help to reduce air pollution in the State. DOT should be contacted and encouraged to use this fuel, producing substantial environmental benefits. Return to top of page

James Curry - Environmental Education Fund Associate

There are two areas where a consensus is evident. Transportation and power generation are critical areas for air pollution reduction.

The current argument against the LEV II car is that the cost risk benefit is not there. In fact, the California Air Resources Board put out a study in 2000 that concluded that LEV II standards would cost only about $70.00 to implement for a passenger car, and about $200.00 for a light truck or SUV. These costs are inconsequential when the cost to public health is considered. Reducing air pollution will reduce asthma and respiratory illness.

In the area of power generation, New Jersey residents have limited choices for clean power. There are only a few thousand New Jerseyans with Green Mountain Energy, a clean energy provider. Much of this power comes from wind, solar energy and hydropower. Residents need to be better informed about this option.

In 1999 a renewable energy program was implemented allotting $350 million over the next four years for renewable energy projects. This is not tax money but comes from a fraction of a cent per kilowatt-hour charge in utility bills. This program can help the homeowner and the business owner to purchase energy power sources like solar panels and wind power by defraying up to 60 percent of the costs, both for equipment and installation. This year through proposals and actual projects there are 2.5 megawatts of new and proposed solar photovoltaic power installations, enough to power 1,250 homes.

The program needs some fine-tuning. For instance, there are caps on the amount of power that can be sold back to the utility, which could be a roadblock for development. A recently installed 55 kilowatt solar panel array at the vocational school in Kearney could only sell back power at 10 kilowatts or less because of their category. This is a regulation that needs to be changed.

Another problem in New Jersey is administrative. There is a staff member at each of the seven utilities charged with creating regulations and administering the program funds. In other states like New York, the mandate for managing the fund has been handled much more efficiently by an independent statewide administrator.

New Jersey and other states in the Northeast must continue to pursue all available options to force power plants to reduce their emissions. We're proud of our State's efforts in the area but dismayed by the federal government's proposed roll-back of regulations governing these plants.

These transportation and energy programs represent important steps in the ongoing process to reduce air pollution in New Jersey. Studies show that it is profitable for the State to use renewable energy because per kWH produced, renewable energy creates more jobs than fossil fuel energy. It is predicted that with the modest increases in renewable power use, New Jersey could see a net gain of 20,200 jobs by the y ear 2010. Return to top of page

Marie Curtis - Director NJ Environmental Lobby

The California Car program is now ten years old and it has been very successful. During that time electric hybrids have been developed and are selling fast. However, New Jersey has still not adopted these new technologies to clean up the air. All of the evidence suggests that controlling mobile sources is the only way we will ever meet Clean Air Standards. We need to adopt the LEV phase II now.

Two-stroke engines that are used on jet skis and lawn mowers can emit the equivalent of the pollution from 100 cars in just one hour of use. However, thanks to California's standard, there have also been technological advances in the form of four-stroke, less polluting engines. The health consequences of items like ATVs, (All Terrain Vehicles) leaf blowers, boats and motorcycles is known and these areas should be controlled, especially on high ozone days. The government needs to set an example. State, County and Municipal grounds should be maintained with non-polluting machines.

There should also be rebates for the purchase of alternative fuel vehicles and assistance in establishing an infrastructure that allows the refueling of compressed natural gas or electric vehicles. The State should work with firms developing alternative sources like Millennium Cell in Eatontown and H-Power in Belleville. Fuel cells already power homes and businesses in Northern Canada where power lines cannot reach. The power of the waves has also been harnessed off the coast of New Jersey in a Navy experiment. There was enough power generated in an uninterrupted fashion for 12 months to provide power for 240 homes. However, after the experiment, there was no follow-up. Canadians have developed a blue energy underwater rotor that harnesses the power in the tides. It is safe enough that fish can swim around it with no discernible environmental impact.

We cannot continue to rely on fossil fuels. That road has led to foreign policy dictated by oil dependency in addition to polluting our air and threatening our health. Now is the time to move ahead with an increased renewable standard in our State energy policy. Return to top of page

Jane Tousman - Sierra Club

Much of our air pollution comes from problems growing out of our land use in New Jersey. Suburban sprawl has caused incredible traffic congestion. It should be required by the Municipal Land Use Law that Master Plans have circulation plans in order to address the traffic congestion that creates a lot of air quality issues.

Also, there are counties that do not participate in the County Environmental Health Act (CEHA). There should be monitoring of the monies spent by CEHA and the emphasis should be placed on clean air. The counties need to be involved in traffic planning as a health issue.

Finally, the issue of educating the public needs to be addressed by the Clean Air Council. The recent defeat of the federal CAFÉ standards is an example of ignorance among the voters regarding the importance of clean air. Educating the residents of New Jersey about clean air and health issues is critical to getting legislation passed. Return to top of page

Alice Gitchell - Project Administrator, Stockton College Geothermal Project

Stockton State College has had a very positive experience with geothermal buildings on our campus. I believe our experience can be applied to the New Jersey School Facilities Construction Program, which is the largest public works program that the State has undertaken in many years.

Geothermal technology is not only cleaner energy, but cheaper energy in the long term. Geothermal is a technology which allows heat to be taken from the ground in order to warm buildings. It also allows unwanted heat to be put into the ground during the air-conditioning season. In nature, a few feet below the ground's surface, the temperature is 55 degrees Fahrenheit all year round. This makes a great deal of heat available. However, heat and temperature are not the same thing; therefore, in order to regulate temperature within a building, a heat pump similar to that used in a

household refrigerator allows the separation of hot from cold and the ability to direct the heat or cold throughout the building.

The exchange of heat between building and ground is accomplished through the use of a bore hole heat exchange field. The piping has water that circulates with heat in the ground. This is simple technology, basically instead of heating a building by using fuel, it heats a building by taking the heat out of the ground and moving it around through the use of electricity which pumps the water through the loop and moves the air around in the building.

Most of the college classrooms and office space at Stockton State is heated and cooled geothermally. This project was not installed when the college was built in 1970, but in 1990 when it was obvious that the 20-year old heating and cooling
system of the college would require an upgrade.

Stockton's retrofit is very large. It has 1,600 tons of cooling capacity. Our geothermal bore hole field is under one of the parking lots, a little over three acres. There are 400 bore holes, 425 feet deep, which are closed loops so the water that circulates at 4000 gallons per minute through the system does not touch the groundwater. Inside the building, heat pumps take water and either extract heat or release heat depending on the season.

The savings at Stockton have amounted to about $300,000.00 per year in fuel costs. Carbon dioxide emissions dropped by 13% and nitrates and sulfates were also reduced.

There are 420 buildings in the Abbott Districts in the State that are scheduled to be replaced or renovated. Newark needs 40 new schools and 30 major renovations that represents 204,000 tons of cooling capacity. If done geothermally it could save 15,000 to 30,000 tons of carbon dioxide per year. It will be important for the State to look at the life-cycle costs in order to save energy and reduce air pollution. As regards solar, it is six times more expensive than geothermal.
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Rhesa Ramdeen - Stockton College Geothermal Project

New Jersey has the greatest population density in the nation and suburban sprawl has increased air pollution because New Jerseyans have to drive everywhere. Recently Congress failed to pass new CAFE standards, which would have increased gas mileage on new cars.

More effective public transportation is one answer. Currently, New Jersey buses are unreliable, dirty and slow. Making public transportation more available and providing comfort, safety and cleanliness in waiting areas would increase ridership. This would require an increase in funding for public transportation. New buses should have clean fuel technology. As improvements are made in LEV vehicles, New Jersey buses should be updated. Return to top of page

Michael Napoli - Stockton State College - Water Watch

We need to learn from past pollution disasters. Developing and adopting alternative fuel vehicles is important for clean air. In Chicago, five years ago, three hydrogen-fueled buses were purchased at considerable expense. However, zero emissions buses in a polluted city were worth it.

Currently, Arkansas, California, Arizona, Maine, Maryland, Massachusetts, New Mexico, Ohio, Oregon, and Rhode Island have all instituted alternative fuel benefits in the form of tax exemptions. New Jersey with our growing density needs to adopt something similar. Low emission vehicles for mass transportation needs to be a priority.
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Written Testimony

Pamela G. Frank - Executive Director Partners for Environmental quality

PEQ is an interfaith coalition representing religious faiths and denominations in New Jersey working for environmental stewardship and justice.

The US and other developed nations emit more greenhouse gases and other pollutants. Justice and stewardship require that that we reduce our energy usage. Using energy more efficiently and developing renewable technologies are necessary if we are to mitigate climate change.

We believe that conservation and cleaner technologies will protect the health of New Jerseyans. The State needs to set an example of conservation and innovation. Return to top of page

Editor: Eileen Hogan, M.A.

APPENDIX

Acronyms and Abbreviations

ATVs All Terrain Vehicles
BPU Board of Public Utilities
CAA Clean Air Act
CAC Clean Air Council
CAAA Clean Air Act Amendments
CAFÉ Corporate Average Fuel Economy
CARB California Air Resources Board
CEHA County Environmental Health Act
CMAQ Congestion Mitigation & Air Quality
CO Carbon Monoxide
DOE Department of Energy
DOT Department of Transportation
HAPs Hazardous Air Pollutants
I/M Inspection/Maintenance
Kw kilowatt
LEED Leadership in Energy and Environmental Design
LEV Low Emission Vehicle
NACEPT National Advisory Council for Environmental Policy and Technology
NAAQS National Ambient Air Quality Standards
NJDEP NJ Department of Environmental Protection
NOx Nitrogen Oxides
OBD On Board Diagnostics
PIRG Public Interest Research Group
PM Particulate Matter
PZEV Partial Zero Emission Vehicle
SIP State Implementation Plan
SO2 Sulfur Dioxide
SUV Sports Utility Vehicle
SULEV Super Ultra Low Emission Vehicle
ULEV Ultra Low Emission Vehicle
US EPA United States Environmental Protection Agency
VMT Vehicle Miles Traveled
VOCs Volatile Organic Compounds
ZEV Zero Emission Vehicle