Vision for the Next Decade:

Air Quality and Pollution Control in New Jersey

New Jersey Clean Air Council
2010 Annual Public Hearing

Vision for the Next Decade: Air Quality and Pollution Control in New Jersey

New Jersey Clean Air Council
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Hearing Sub-Committee
James Blando, Ph.D., Hearing Chair

Editor: Ann Arnold

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Introduction

The New Jersey Clean Air Council (CAC) is a statutorily created advisory body that provides ongoing input and recommendations to the New Jersey Department of Environmental Protection (NJDEP) on air quality issues. The CAC also conducts an annual public hearing highlighting the most pressing air quality issues affecting New Jersey. After considering the testimony received at these hearings, the CAC prepares a report of recommendations, presents that document to the Commissioner of the NJDEP, and makes that document available to the public. For 2010, we are pleased to present our report entitled, "Vision for the Next Decade: Air Quality and Air Pollution Control in New Jersey."

Over the past decade, the CAC public hearing topics have ranged from broad overviews such as "Air Quality Needs Beyond 2000" and "Innovative Solutions for Clean Air" to specific and focused issues including air toxics, fine particulate matter, transportation, indoor air quality, public health and health care-related costs, energy efficiency and conservation, air quality at our ports and airports, and electricity generation alternatives. The hearings and ensuing deliberations of the CAC members have resulted in many valuable recommendations whose implementation has greatly contributed to the significant progress New Jersey has made in reducing ambient air pollution over these years.

On April 14, 2010, the CAC conducted a public hearing entitled "Vision for the Next Decade: Air Quality and Air Pollution Control in New Jersey." We took testimony from the public, scientific and regulated communities, as well as other interested parties, and developed a series of recommendations on sound planning practices and strategies that will make New Jersey more effective in combating the proliferation of air pollution and reducing its adverse health effects over the next decade. These recommendations, as well as some background information, are outlined below.

Background

As a State with major industrial and commercial enterprises and dense development in a relatively small area, New Jersey has faced significant air quality challenges for many years. Air pollution in New Jersey comes from many different sources: stationary sources such as factories; power plants; and degreasing operations; mobile sources, including both on- and off-road vehicles; consumer products and services such as dry cleaners; agricultural operations; naturally occurring sources such as vegetation and windblown dust; as well as other pollutants that drift on prevailing winds from states to our west. Air pollution is a serious environmental health problem that affects every resident.

While we have made tremendous strides in lowering air pollution primarily from stationary sources, New Jersey continues to exceed the health-based standards for fine particulate matter and ozone. Our progress was due to the significant improvements mandated by the federal Clean Air Act which became law 40 years ago, coupled with

New Jersey's progressive position on environmental protection as a whole. Even so, thousands of our residents suffer from asthma, chronic obstructive pulmonary disease (COPD), and other respiratory conditions that are exacerbated by exposure to these pollutants in our air. Others are hospitalized or die from respiratory disease and heart attacks attributable to these pollutants. Emerging scientific evidence suggests that air pollution may cause adverse pregnancy outcomes, including effects on fetal growth and development. These public health impacts place air quality at, or near, the top of New Jersey's environmental health risks.

During the next decade, the State will face changing air quality challenges as development and traffic congestion continue to increase. New scientific knowledge about pollution's adverse effects on health and welfare will emerge and increase the need to re-evaluate our air quality protections. Newly recognized air pollutants and sources of air pollution must be thoroughly evaluated and addressed.

Sound planning for development, transportation, and energy production is key for effective air pollution control. In addition, the State must take action to combat greenhouse gas emissions and integrate that action with existing health-based air quality programs that address ozone, particulate matter, and air toxics.

Not only must an air quality management plan meet federal and State requirements, it must also address local needs and the needs of diverse regional and State stakeholders – multi-state air pollution control groups such as the Ozone Transport Commission (OTC), environmental groups, local governments, business and industry, and residents. Comprehensive planning is necessary to maintain standards that have taken decades to achieve, to attain air quality standards not yet met, and to confront new air pollution issues.

Mobile Sources

One important area of prior CAC recommendations is mobile sources. Mobile sources, such as cars, trucks, and buses, are a major source of air pollution. Vehicle emissions are primary sources of particulate matter and contribute to the formation of ozone, the two pollutants that continue to be New Jersey's most widespread and pervasive air quality problems. Particle pollution, especially fine particles, is known to cause or exacerbate serious health problems, including: irritation of the airways; coughing or difficulty breathing; decreased lung function; asthma; bronchitis; irregular heartbeat; heart attacks; and premature death. Chronic exposure to ozone is associated with a decline in lung function, lung inflammation, and worsening of asthma in children and adults.

Vehicle emissions also contain hazardous air pollutants and other toxic substances that can cause serious health effects such as cancer, birth defects, nervous system problems, and death. Additionally, these emissions occur in our neighborhoods and close to our breathing zone, resulting in a relatively large 'intake fraction,' or proportion of total emissions that are inhaled by persons, compared to other sources. Non-road equipment

and vehicles, such as lawn mowers, construction vehicles, ships, port equipment, and locomotives, are also significant sources of multiple air pollutants.

The CAC has supported and recommended the implementation of some important and successful mobile source programs over the years, including the enhanced Inspection and Maintenance (I/M) program for automobiles, expansion of the heavy-duty Diesel Vehicle Inspection Program, and adoption of California's Clean Car Program.

New Jersey's enhanced I/M program was updated in 2003 to take advantage of the computers in newer vehicles (i.e., model years 1996 and newer) through On-Board Diagnostics (OBD) testing. The OBD system monitors virtually every component that can affect the emission performance of the vehicle. If a problem is detected, a warning lamp is illuminated on the vehicle instrument panel to alert the driver. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem. Older vehicles continue to receive a tailpipe emission test. A vehicle that is maintained and runs properly has lower air pollution emissions.

The enhanced I/M program was updated again this year with a different tailpipe emission test, as aging vehicles are gradually retired and most of the fleet is OBD-tested. The program will also be emission testing light-duty diesel vehicles for the first time with the OBD test. In addition, the heavy-duty diesel I/M program has been updated to tighten the smoke opacity standards, strengthen the visible smoke standards, and clarify the exemption for emergency vehicles.

New Jersey has also adopted California's Clean Car Program, referred to as the Low Emission Vehicle (LEV) program, to reduce pollutant emissions and greenhouse gases emitted by motor vehicles in New Jersey. This program sets mobile engine emission standards for carbon dioxide equivalent emissions for new vehicles. The LEV program will reduce all vehicle emissions, helping to reduce adverse impacts on ecological systems and human health. The CAC recommended continued evaluation of the LEV program in the early 2000's, and supported its use and advantages in later reports.

In addition to gasoline vehicle-based programs, several CAC recommendations have focused specifically on diesel-powered vehicles and equipment. Many CAC recommendations from the early to mid-2000's reflected a need for a series of emission-reducing requirements for diesel engines, due to their significant contributions to fine particulate matter air pollution and air toxics. Diesel emissions contain more than forty known and probable carcinogens which cause or exacerbate asthma and other respiratory illness, lung cancer, and heart disease.

The 2004 hearing in particular, whose topic was "Fine Particulate Matter in the Atmosphere," contained recommendations for a diesel retrofit program, truck stop electrification, and an anti-idling campaign for school buses and diesel-powered vehicles, all of which are being successfully implemented.

New Jersey's Diesel Retrofit Program targets diesel-powered vehicles, including garbage trucks and school buses, that are publicly-owned or under public contracts, commercial buses, and publicly-owned on-road vehicles and off-road equipment that regularly expose the public to diesel exhaust. Retrofit devices are designed to significantly reduce exhaust emissions of diesel particulates by capturing and/or destroying these particles, and the purchase and installation costs of these devices are reimbursed by the NJDEP to the owners of the regulated vehicles. It is noteworthy that the 2004 hearing report helped the legislature understand and appreciate the importance of the diesel retrofit program and the public health benefits that were later realized from this program. The 2004 CAC report was instrumental in developing legislative and community support for the retrofit program.

Many steps have also been taken to curtail the idling of heavy duty trucks and buses. The truck stop electrification project helps to reduce diesel air pollution by ensuring the availability of electrical hookups at truck stops, thereby providing truck drivers with an alternative source of power while they rest. The NJDEP also created "No Idling Signs" to raise awareness of the need to reduce idling and emissions, and to promote compliance with the State's three minute idling regulations for both diesel and gasoline engines. Property owners, particularly those who receive citations for violating the idling law, can purchase and install these signs on their properties.

Stationary Sources

On the stationary side, important CAC recommendations from the 1999, 2007, and 2009 reports regarding electric generating units (i.e., power plants) have been successfully implemented. Emissions are being reduced through the enforcement of multi-pollutant performance standards for oxides of nitrogen (NOx), particulate matter (PM), sulfur dioxide ($SO_{2)}$, and mercury. In addition, NJDEP established performance standards to control mercury emissions from iron and steel smelters and municipal solid waste incinerators. Mercury emissions have been linked to both neurological and developmental damage in humans. The developing fetus, infants, and children are the most sensitive to mercury's effects.

Programs are now in place to address other aspects of power plant operations, including gas- and oil-fired units used on High Electric Demand Days. Ozone pollution is elevated on hot, humid days; these are also usually the days when there is a high demand for electricity to keep cool. Electric generating units that run primarily on high electric demand days can emit several times more oxides of nitrogen than cleaner units that are used more often. The emissions from these units on such high demand days are now being reduced, both in New Jersey and regionally, through the High Electric Demand Day program.

On another regional scale project, New Jersey is participating in the Regional Greenhouse Gas Initiative (RGGI), which is a multi-state cap-and-trade program for greenhouse gas emissions. This program entails the allocation and trading of carbon dioxide allowances to and by sources in the power sector only, and will result in

reductions of carbon dioxide and other air pollutants. The CAC has recommended and supported this effort in its reports over the past several years.

Ports

More recently, the CAC public hearing in 2008 concerned the improvement of air quality at our ports and airports. The CAC believes that some progress has been made on previous recommendations regarding the ports. For example, there has been some electrification of cranes, as well as cooperation and communication between multiple agencies, including the Port Authority of New York and New Jersey, involved in such regional projects. However, while the CAC recognizes that some progress has been made, it also acknowledges that more needs to be accomplished. In addition, some of the recommendations the CAC made in 2008 are now serving as a national model as the United States Environmental Protection Agency (USEPA) takes further actions to improve air quality at ports throughout the nation.

Public Outreach and Education

It is the CAC's tradition to review recommendations from earlier hearings to note which have been implemented, and with what success; and which have not been implemented but may now be considered of heightened importance. Some recommendations that the CAC believes to have continued or increased relevance are revisited in the current report.

The CAC consistently makes recommendations relating to public outreach and education, as well as to enhanced communication and collaborative efforts between the NJDEP and other State agencies, private businesses, and other entities. The CAC believes that NJDEP has made great progress on several such initiatives, including the anti-idling campaign, ridesharing and public transit initiatives, and more recently, the I/M educational outreach program. In addition, the NJDEP conducted some successful small business outreach programs, including the Camden and Paterson small business sweeps in coordination with the local Chambers of Commerce. These were focused targeted inspections that were done over a short period of time in those cities, and included educational outreach to the local Chambers of Commerce when the sweeps were conducted.

Notwithstanding the accomplishments to date, the CAC believes these educational and outreach programs are very important and should be continued and expanded. For example, consideration for use of a system for asthma and allergy alerts to be combined with air quality alerts would increase awareness and direct the public to the NJDEP website and programs for additional information.

Other

Prior recommendations regarding cleaner cars and diesel fuel; fossil fuel consumption and greenhouse gas emissions; sustainable growth and mass transit; determining exposure to local sources of air pollution and their mitigation in environmental justice communities

and throughout the State, should continue to be the at the forefront of the focus for the next ten years.

Recommendations

Due to the broad nature of this year's public hearing, the resulting recommendations are organized by key topic areas which the Clean Air Council (CAC) believes are significant when planning for the next ten years. The first two topics are "Mobile Sources and Transportation" and "Stationary Sources," both of which address specific sources of air pollution. Next are "Air Toxics" and "Criteria Pollutants and Multi-pollutant/Cumulative Impacts" which address specific categories of pollutants. Air quality management and planning from small-scale to large-scale follows with the next three topics: "Community/Local Air Quality and Environmental Justice," "Regional/Multistate Planning and Stakeholder Partnerships," and "Climate Change, Energy, and Green Strategies." The last topic is "Planning, Resources, and Economics" and includes some more generalized recommendations in those areas.

Each topic contains recommendations that encompass several different themes, such as policy, resources, planning, emissions, or sources. The CAC believes that all of these recommendations together can serve as a roadmap for strategic planning, effective organizing, and directional influence for the next ten years.

The CAC feels that all of the recommendations are important for the health and welfare of New Jersey's residents. Although some of the recommendations are short-term while others are long-term, it is clear that all of them require action and that doing so will allow the NJDEP to achieve levels of accomplishment and completion in different time periods throughout the next ten years.

Mobile Sources and Transportation

1. Full compliance with the National Ambient Air Quality Standards (NAAQS) will not be achieved without tackling the contribution to air pollution from mobile sources. Therefore, the NJDEP should continue its efforts to address mobile sources of air pollution.

2. The NJDEP should continue to support policies that advocate a "fix it first" philosophy, where a higher priority is placed on fixing transportation infrastructure versus simply building new roads. In addition, policies that encourage wider use of mass transit, centered development, and walkable communities will result in more effective land use management by creating a better sense of community among residents, making access to healthy choices easier (e.g., walking and biking rather than driving) while reducing air pollution. These results can be accomplished by:

a) Providing incentives for investment in 'smart growth' and development.
b) Providing greater incentives for expansion, development, and use of mass transit.

c) Increasing the gas and diesel fuel taxes to levels more typical of other states and using this revenue to invest in road and bridge repairs, smart growth, and mass transit.

The NJDEP should partner with other State agencies while developing and implementing such policies and programs.

3. The NJDEP should encourage and promote the focusing of new development in areas that are transit accessible. This focus can provide options for people to avoid using motor vehicles.

4. In order to meet the NAAQS standards, the NJDEP should be a more outspoken advocate for changing the transportation incentive structure in New Jersey to provide greater support for public transit. Building more roads and/or creating disincentives through higher fees will not adequately address this issue. The NJDEP should explain to the Legislature and other State agencies, such as the New Jersey Department of Transportation (NJDOT), that a coordinated effort which includes both the targeting of mobile sources and incentivizing mass transit, is the only viable solution.

5. The NJDEP should continue to utilize recommendations made in previous advisory committee reports. In particular, the CAC suggests that the NJDEP continue to reference previous reports and recommendations including the CAC report on mobile sources published in 2003. Other reports, such as the Coalition for Healthy Ports Clean Air Plan will also provide many helpful recommendations.

6. Based on the success of the current program, the CAC recommends that the NJDEP continue its focus on diesel emissions and support a requirement that all publicly-contracted, diesel-powered vehicles and equipment meet the USEPA 2007 Emission Standards for Diesel Engines. Compliance could be accomplished with a requirement that all of the aforementioned diesel-powered vehicles and equipment be retrofitted with the best available technology, using existing State or project funding where available, to reduce toxic air emissions to the greatest extent possible. If a vehicle or equipment cannot be retrofitted, it should be retired. The focus should be on prioritizing these retrofit projects in urban areas first. The NJDEP should also continue its efforts to address other particularly problematic air pollution sources such as off-road sources of air pollution.

7. The control of emissions from mobile sources, especially in areas with high cumulative impacts, requires NJDEP to have an integrated strategy that is carefully evaluated through the use of air quality models and actual measurements of air pollutants. This may include, but not be limited to, the use of tailpipe standards, assessment of fuel use and it's impacts, prevention of idling, and support of programs that help reduce vehicle miles traveled (VMT). This strategy could also integrate controls from non-traditional mobile sources such as ships, lawn equipment, diesel construction equipment, and other off-road sources.

8. The NJDEP should expand efforts to install truck stop electrification.

9. The NJDEP should further expand its anti-idling education efforts and determine methods to evaluate and improve the educational campaign's effectiveness. Additional "No Idling" signs and outreach should be provided to the regulated and non-regulated community, especially schools, and every effort should be made to make it easier for these communities to obtain these signs, including providing the signs for free wherever or whenever possible.

10. The NJDEP should find ways to encourage and/or provide incentives for the availability and purchase of high technology (lowest polluting) vehicles and equipment. The NJDEP should continue to implement the LEV program and its successors. The NJDEP should work with California and the other states to develop future mobile source programs to reduce emissions.

11. The NJDEP should encourage the turnover of the fleet sooner than "normal" and the purchase of lowest polluting vehicles and equipment.

Stationary Sources

12. Flexible permitting has tremendous potential to allow for creative, efficient, and pragmatic solutions to operational hindrances that air permitting can sometimes create for permitted facilities. The NJDEP should continue to be innovative with its flexible permit program, including expansion of the program whenever and wherever appropriate. However, care must be taken when issuing flexible permits to assure that effective air quality protection will remain in place. The CAC suggests that the NJDEP grant flexible permits only after careful review.

13. The NJDEP should better understand and address small stationary sources. The NJDEP should also more strongly consider non-traditional sources of air pollution, including consumer products, in their strategy to improve air quality in New Jersey.

14. Small wood waste boilers and other wood burning devices for residential heating are growing in numbers as energy costs increase. Often these boilers are manufactured without emission control devices, and wood smoke is an increasing source of public health complaints by neighbors, especially in rural and suburban areas. Local municipalities and county public health officials are looking for help from the NJDEP to enact either emission control regulations for new and existing boilers or prohibit them outright. We recommended NJDEP take a leadership role by requiring strict emission control systems for new residential wood waste boilers and support local and county governments in enforcement efforts to solve this problem.

15. The NJDEP should continue to evaluate scenarios where sources can contribute emissions beyond their normal operation, such as during high electric demand days, fumigation practices with pesticides at ports, and process upsets.

16. The NJDEP should conduct or request USEPA to conduct a 5-year periodic review to determine the best control technologies available for each source category. The USEPA should be reviewing NSPS every 5 years and Maximum Available Control Technology (MACT) every 8 years.

Air Toxics

17. The NJDEP should consider updating and adding additional toxic air pollutants and emerging air pollutants to their Regulated Air Contaminants list. The authority to add contaminants is provided in the New Jersey Air Pollution Control Act (N.J.S.A. 26:2C-9.2i). Some suggestions are hydrogen sulfide (H_2S) and the alternative dry cleaner solvent n-propyl bromide.

18. The use of pesticides results in emissions of air toxics in the form of both the active ingredients and the carriers. The NJDEP should gather information on pesticide usage (especially the carrier chemicals that are used) and develop State-of-the Art guidance for commercial fumigation, such as product fumigation under tarps that commonly occurs at seaports and with bulk cargo. The NJDEP should develop additional expertise in the area of pesticide, herbicide, and fungicide issues, possibly through coordination between the Air Toxics Program, the Pesticide Control Program (PCP), the New Jersey Department of Health and Senior Services (NJDHSS) Occupational Health Surveillance Program, and the National Institute for Occupational Safety and Health (NIOSH) Pesticide Program (http://www.cdc.gov/niosh/topics/pesticides/). The PCP currently resides under the NJDEP's Office of Compliance and Enforcement. The PCP is primarily responsible for ensuring compliance with federal and State laws and regulations regarding the use, sale, transport, disposal, manufacture, and storage of pesticides in the State of New Jersey. The PCP also promotes pollution prevention and pesticide use reduction through training and outreach activities involving Integrated Pest Management.

19. The NJDEP should add emphasis on air toxics and "emerging air pollutants", including enhanced monitoring, modeling, and assessment of risks, while also considering cost effectiveness and relative burden on the regulated community.

a) The current thresholds for reporting air toxics emissions on permit applications, as required by N.J.A.C 7:27-8 and -22, may be too high for sources close to people and should be set lower.
b) The air toxics emission inventory should be improved. The Air Program should consider new information collected from permit applications after reporting thresholds are lowered, tap into existing information in the criteria pollutant emission inventory for volatile organic compounds (VOC) and PM emissions, which include toxic components (using emission factors), and lobby USEPA for the development of better tools. The NJDEP should use this improved inventory to identify important sources that need additional scrutiny.
c) The health factors (Unit Risk Factors (URFs) and Reference Concentrations (RfCs)) used on the NJDEP's Risk Screening Worksheet should be updated every two to three years.

20. The NJDEP should consider focusing on MACT requirements for minor sources of air toxics, particularly in urban areas.

21. The NJDEP should develop air quality management-type plans for air toxics. The CAC recommends that the NJDEP consider utilizing the National Air Toxics Assessment (NATA) data as it develops a strategic plan for the control of air toxics.

Criteria Pollutants and Multi-pollutant/Cumulative Impacts

22. The NJDEP should seek USEPA approval to develop multi-pollutant State Implementation Plans (SIPs) because the current pollutant-by-pollutant approach is inefficient.

23. The NJDEP should incorporate an assessment of cumulative air pollution impacts when formulating its air quality plans.

Community/Local Air Quality and Environmental Justice

24. Procedures should be developed to routinely assess cumulative impacts in environmental justice communities, including the permitting process for significant new permits and permit renewals for stationary sources, and prioritizing and targeting resources such as grants, pilot projects, enforcement activities, etc., that help alleviate existing impacts.

25. The CAC continues to support educational campaigns and efforts by the NJDEP to raise awareness among consumers about the air quality implications of their consumer choices and personal behaviors. These programs should be continued and/or expanded. Furthermore, the NJDEP can also partner with environmental non-profit organizations and the USEPA to facilitate educational programs about air quality already in place, especially in schools (e.g., the USEPA's Dusty the Asthma Gold Fish, the Air and Waste Management Association's (A&WMA's) Educational Resource Guides, etc.). In addition, consideration for use of a system for asthma and allergy alerts to be combined with air quality alerts would increase awareness and direct the public to the NJDEP website and programs for additional information.

26. The NJDEP must also continue to consider sensitive and vulnerable sub-populations when evaluating the risk of exposure to air pollutants, such as those encountered by children, pregnant women, the elderly, communities of color, and low-income communities. For example, these sub-populations should be considered when addressing issues related to exposure to air toxics, cumulative impacts, and permitting.

27. The NJDEP should also consider whether its role in indoor air quality (IAQ) should be limited to vapor intrusion and how to best leverage its resources with those of other agencies, such as NJDHSS, that deal with IAQ.

28. The NJDEP should support efforts of the New Jersey Noise Council to develop a model municipal noise ordinance. The NJDEP and the New Jersey Noise Council should partner with NJDHSS Office of Local Health to assure noise control efforts are coordinated and consistent throughout the State.

29. The State should continue to move forward and strive to improve upon plans already developed to identify and improve air quality in various "hot spots" and areas of concern throughout the State. When utilizing offset programs, the NJDEP must assure that localized "hot spots" are not being created.

30. The NJDEP should reassess its air monitoring network and determine if improvements could be made with regard to the protection of public health.

31. The CAC recommends continuing funding for important public health surveillance systems that detect adverse health effects in communities caused by harmful air pollutants and other chemicals. This includes the New Jersey Poison Information and Education System (NJPIES), which was instrumental in uncovering potential problems with new dry cleaning solvents before they impacted the community. NJPIES is designated as a regional poison control center by the NJDHSS and the American Association of Poison Control Centers (AAPCC). NJPIES is New Jersey's only poison control center, and is housed at the University of Medicine and Dentistry of New Jersey in Newark, New Jersey. Its mission is to provide treatment and the provision of information concerning poisons, drugs, and targeted health issues through telephone management, consultation, education and research.

32. The NJDEP should use the results from studies of urban air toxics in communities, such as Paterson and Camden, to determine effective means for controlling the sources of toxics in urban communities. The results of these studies, if applicable, can be used to support a comprehensive urban air quality improvement strategy. Once created, the urban air quality improvement strategy should contain timetables and attainable goals.

Regional/Multistate Planning and Stakeholder Partnerships

33. The NJDEP should continue to work with other states, large groups and stakeholders to address regional control of air pollutants, especially those that have regional impacts. The NJDEP should continue to encourage USEPA, through whatever means possible, to develop comprehensive national and regional plans for controlling air pollution. It is well recognized that out-of-state pollution impacts the air quality in New Jersey. The CAC supports New Jersey's efforts to address air pollution transport issues whether they be from long range transport (e.g., the Midwest) or sources closer to home (e.g., utilities directly across the Delaware river), as well as from those sources within the State potentially affecting states downwind from New Jersey.

34. The NJDEP should continue to provide resources to support New Jersey's participation in regional and national air quality planning activities (e.g., OTC, Northeast States for Coordinated Air Use Management (NESCAUM), etc.)

35. The CAC supports the building of strong State partnerships by the USEPA and recommends that the NJDEP encourage the USEPA to provide as much financial and technical support as possible. The NJDEP should provide the USEPA with compelling, concrete cases and justifications for requesting necessary funding and technical support from USEPA.

36. The NJDEP must think and plan holistically when addressing complex air pollution issues. Utilization of new modeling tools, such as NESCAUM's NE-MARKAL model, could be of great value when assessing the impact of proposed actions. This model focuses on energy systems and technologies and is linked to atmospheric dispersion, macro-economic, and public health assessment models.

37. The CAC recommends improved coordination between NJDEP and other State and local agencies.

Climate Change, Energy, and Green Strategies

38. Key greenhouse gases need to be regulated because they have been scientifically found by USEPA to affect public health and welfare. The NJDEP should also commit to addressing co-pollutants as part of a comprehensive climate change strategy. The short-lived greenhouse gas species are also criteria pollutants – ozone and PM2.5. Quick action to attain the health standards will not only improve public health, but help diminish the impact of climate change.

39. The NJDEP should engage the New Jersey Board of Public Utilities (NJBPU) in discussions about New Jersey's Energy Master Plan and energy portfolio. The NJDEP should routinely provide advice and counsel on the air quality implications of energy choices and programs.

40. The NJDEP should work with the NJBPU to identify resources for dedicated funds to promote energy conservation and renewable energy projects. The CAC strongly supports the sustained use of moneys from the New Jersey Clean Energy Fund, which are dedicated to the provision of financial incentives to make alternative clean energy projects viable from an economic perspective. The air quality benefits alone justify this fund. Also, RGGI funds should continue to be used for their dedicated purposes to help lower our overall energy consumption and improve environmental quality. Finally, the NJDEP should continue to fund the New Jersey Manufacturing Excellence program done through Rutgers Center for Advanced Energy Systems (CAES), which improves the competitiveness and efficiency of New Jersey companies, while also reducing the impact on the environment. In short, maintaining the use of dedicated funds for their intended purposes should be a priority.

41. The NJDEP should support and encourage the requirement that green building and remodeling methods be used through incentives such as grants, expedited permitting/permit assistance, technical assistance, and awards/publicity. The NJDEP

should also support the provision of incentives for green planning. Green planning should include a focus on less automobile dependence and more pedestrian- and bicycle-friendly communities. Many of the mobile source recommendations are also relevant for greenhouse gases.

42. The NJDEP should support green remodeling, renewable energy, and energy efficiency. Education regarding the usefulness of Home Energy Performance Audits, insulation, green roofs, and energy star products will assist in informing consumers about choices that will reduce air pollution. Education about alternative energy sources such as wind turbines, geothermal energy, solar hot water, and photovoltaics will also assist consumers with making smart energy choices that will reduce air pollution.

43. The NJDEP must keep abreast of the latest developments in the energy sector and adjust its planning efforts to account for new energy technologies, sources, and delivery systems and their impact on air quality. The NJDEP should consider and assess the impact of changing energy sources on air quality.

Planning, Resources, and Economics

44. The CAC recommends that the NJDEP continue its progressive leadership role in environmental protection by establishing standards for air quality based on sound science that are suitable for New Jersey, foster creativity, and protect human health.

45. The air program should have the necessary resources allocated to maintain and increase the existing technical expertise within the air program, to utilize advanced scientific tools that enhance their ability to assess, characterize, and address air quality problems. In addition, scientific expertise is required to provide effective planning to achieve air quality goals.

46. Planning should be conducted to avoid short-term decisions that are inconsistent with longer-term needs. Both short-term and long-term goals for the air program should be delineated in a strategic planning document.

47. The NJDEP's enforcement and air quality monitoring should consider the use of new and innovative sampling strategies, especially non-extractive sampling methods such as open-path Fourier Transform Infrared (FTIR) spectrometry, infrared (IR) cameras, and Light Detection and Ranging (LIDAR) where applicable.

48. Mobile source emissions, particularly those that are exacerbated from poor land use decisions promises to be an ongoing problem for air quality in the future. The CAC is mindful of the complexity of these issues and the need for additional transportation related expertise to help provide advice and guidance. The CAC believes that having a representative from the NJDOT would help to address these issues. Therefore, the CAC believes the NJDEP should request that the Legislature amend the statute that created the NJ Clean Air Council to allow for an additional member who is a NJDOT representative.

Summary of Testimony

Invited Speakers

Junfeng "Jim" Zhang, PhD.
Associate Dean for Piscataway/New Brunswick Campus and for Global Public Health
Professor & Chair, Department of Environmental & Occupational Health
UMDNJ, School of Public Health

Dr. Zhang opened the Public Hearing with a presentation on the history of air pollution. He discussed some of the famous air pollution events from the past, including London in 1952, Pittsburgh during the pre-USEPA industrial era, and the New York City Thanksgiving smog episode. During these events, air pollutant levels of particulate matter and sulfur dioxide were magnitudes higher than they are now, and many deaths were the direct result of these episodes.

In the years since then, particularly after the USEPA was formed, New Jersey has substantially improved air quality and reduced unhealthy levels of air pollution. Criteria pollutants have been reduced to meet the original standards and the mandates of revised standards, and this is due largely to sound implementation plans and regional and local strategies.

Historically, contact with air pollution occurred just about everywhere. Today, the outdoors is still dominant for some pollutants but at much lower levels. Indoor air pollution, particularly for VOCs and semi-volatile organic compounds (SVOCs), will be higher than measured outdoors. There is much contact with air pollution via transportation due to more suburban living and more in-transit time.

Challenging issues for the future include healthy communities and environmental justice. Focus should be placed on identifying problems (e.g., invisible sources under "blue sky"), the "smoking gun" of new pollutants (e.g., pollutants attached to other particles), air toxics, and pollution hot spots. Near-roadway exposure due to living near roads within a community should also be addressed.

For the future, most types of sources of outdoor pollutants will be the same. However, energy sources may change if the country gets focused on energy independence, including energy conservation and efficiency, renewable energy and nuclear power, fuel-efficient vehicles, and electric cars. The key focus for air quality planning for the future should be on good science, technology, public awareness, and sound policy.

Bob Martin
Commissioner
New Jersey Department of Environmental Protection

In his presentation to the CAC, Commissioner Martin first recognized the longevity of the CAC and the importance of its contributions to the NJDEP in looking at the air issues

in the State. The many different boards and councils in the State provide the NJDEP with an incredible amount of information that it must have, and he looks forward to working with the CAC in the future.

Commissioner Martin and his Administration are committed to science - data, facts, cost/benefit analysis – and to ensuring that whatever the NJDEP does is based upon science. A Science Advisory Board is being created with professors and other members who have the background in science, as well as the real world experience that is needed for providing the NJDEP with the information it needs.

Commissioner Martin also spoke of the successes of several current projects of the NJDEP, as well as some newer initiatives that will be of importance under his Administration in the coming years.

The Diesel Retrofit project with the USEPA and the Port Authority of New York and New Jersey is one such program he highlighted. Because of the large amount of air pollution in New Jersey, which also blows towards New York City, these kinds of projects coming forward are extremely important. Large organizations working with the NJDEP on diesel retrofits and other types of air pollution systems is important, and the NJDEP is going to continue to focus on that and encourage other organizations to come forward as well.

Another key component is going to be green energy. The NJDEP is going to push hard and quickly ahead on all of the offshore wind projects. In building those offshore, we are putting up 3,000 megawatts medium-term, and even more than that long-term. In addition, in the longer term, we can leverage the benefits by manufacturing and assembling all those wind turbines here in New Jersey. Moving off of coal-generated electricity and to at least natural gas helps to give us the least carbon footprint, and contributes lower levels of NO_x and SO_x. Solar power is also going to continue moving forward. It is extremely important to continue to build green energy.

Another major initiative that Commissioner Martin is working on now is electric vehicles and an electric vehicle infrastructure. With so many cars on the road, both in inner cities and on the highways, as well as those that travel through the State, we know that's a major portion of the pollution in this State which we need to address going forward. We are starting to frame a long-term plan that looks at both the building of the vehicles, of which many companies have already stepped up to start doing, and also probably even more important, the building of the infrastructure. It is a commitment that the Governor and the Administration has made.

Another commitment going forward is to say no to coal in New Jersey. The NJDEP has gotten many companies to be very cooperative working with us, with some amenable to either closing power plants or putting filters on those they do have operating. We are also going to go after some power plants in Pennsylvania. We are currently in litigation with the Portland Plant and will not back off such cases, especially in such cases where the pollution is coming to New Jersey.

The NJDEP is going to push initiatives that protect the environment first, and that will be the number one priority. At the same time, we need to grow the economy of the State, and that is where the NJDEP employees, the community, and the CAC come in, to help find that balance. We have air pollution issues in this State, not just from within, but also from pollutants that come from other states, and we are going to continue to fight that.

We also need to address environmental justice from a New Jersey point of view. There are communities within this State that have been overburdened with a disproportionate amount of pollution that we need to address. These issues should be melded into plans for where we are going and what we are addressing in the future.

William S. Baker
Air Senior Policy Advisor
United States Environmental Protection Agency

Mr. Baker is an Air Senior Policy Advisor for the USEPA. His hearing testimony was on the future of USEPA air programs for the next ten years.

Of the seven key themes for the USEPA that were announced in January, the top two are air-related: taking action on climate change, and improving air quality. Action should be taken on climate change through new legislation, or implementation of the 1990 Clean Air Act. Key greenhouse gases need to be regulated because they have been scientifically found by the USEPA to affect public health. Air quality improvement can be achieved through conventional pollutants and programs: NAAQS, air toxics, Clean Air Interstate Rule, New Source Review/Prevention of Significant Deterioration, and Enforcement.

Some of the USEPA's remaining key themes also indirectly address air pollution issues: protecting America's waters, expanding the conversation on environmentalism and working for environmental justice, and building strong State and Tribal partnerships.

In protecting America's waters, the air-water interface includes mercury and nitrogen deposition, and in regard to the water-air interface, a lot of air pollution is generated to pump, treat, and heat water or waste. In addition, in relation to the solid waste-air interface, using recycled or re-used materials reduces emissions from: the extraction of raw materials, the manufacture of goods, and methane (or greenhouse gas) emissions form landfills.

For themes involving environmental justice, it is important to develop guidelines for including environmental justice principles in decisions and to focus on communities historically under-represented in USEPA decision-making (i.e., tribes, communities of color, economically distressed areas). It is also a given that the USEPA should build strong State partnerships by viewing states as co-regulators and providing as much financial and technical support as possible.

Mark Manninen
Environmental Permitting Supervisor
3M Environmental Operations, St. Paul, Minnesota

Mark Manninen, an Environmental Permitting Supervisor from the 3M Company in Minnesota, provided a presentation on innovations in permitting and flexible air permitting as well as methods to improve the permitting process.

3M is a $25 billion company, about 80,000 employees. They make 50,000 saleable products with anywhere from a million to 2 million skews. They have 80 permanent facilities with 45 issued Title V permits. They are subject to about 25 MACT standards and at least a dozen different New Source Performance Standards (NSPSs).

There is a need for flexibility from working in their corporate environmental operations group and dealing with permits, to merely try to keep up with the speed of change, from a business standpoint, while still meeting all the state and federal air quality regulations. So things like lean manufacturing, formulation changes, plant consolidation, fuel and energy reduction projects, everybody is reducing capital spending, and good engineers are looking for better, faster and cheaper ways of doing things, which really puts permitting as the bottleneck to fast-paced processing.

A flexible permit is a Title V permit with additional provisions built in for pre-approved changes, certain types of equipment, operating certain types of facilities you may already have or can see yourself bringing in within the next five years of issuing Title V permits in exchange for beyond compliance from an environmental standpoint.

The pre-approved changes are allowed to be completed without the traditional construction and permit authorization timeframe to where it really consists of providing the agency with notification prior to starting construction, saying, we're putting in this type of equipment, which was indicated as allowable, pre-approved change within the permit. Then prior to start-up, you're submitting a follow-up study notification, which establishes how you're demonstrating compliance with all of the federal and state rules, the MACT, the NSPSs, a number of the facilities as well. The flexible permit is showing compliance with the MACT standards as well, to where those types of requirements for all those compliance and all the state and federal rules are already built into the Title V permit before the permit is issued.

There's that obligation of knowing what you're up against and knowing what you can bring in and how you're demonstrating compliance with a permit, as well as some of the environmental obligations. What this does, from an industry standpoint, is allows the permittee to rapidly react to business needs. It reduces the administrative burden for both the agency and the permittee. You can establish having some forecast of knowing what types of equipment you're going to bring in, and rather than going through the permitting process with the public reviews and the USEPA 45-day review period, where you're taking that out of the equation and this really provides the permittee of an incentive to reduce that environmental footprint.

The NJDEP should consider an innovative flexible permitting program. Flexible permits would contain provisions to allow for certain approved changes in return for "beyond compliance" commitments. Prescriptive permit requirements would address all applicable air regulations, and creative permit language would drive product changes. Pre-approved changes could be completed without the traditional construction permit authorization and timeline.

Arthur Marin
Executive Director
NESCAUM

Arthur Marin, Executive Director of NESCAUM, presented testimony on planning for transformational change in an incremental world. Our region and nation have achieved great success in dramatically reducing the threat from airborne emissions of lead, CO, ozone, and acid rain. These successes are tempered by the growing understanding of environmental and public health threats posed by microscopic particles and greenhouse gases. We now face the challenge of virtually eliminating common air pollutants associated with combustion.

Planning challenges for the coming decade include the following: transitioning from an incremental SIP approach to more holistic, longer-term planning; meeting multiple goals and planning horizons; achieving near-term requirements while pushing transformational changes; avoiding short-term decisions that are inconsistent with longer-term needs; and addressing complex air pollution issues within a framework that includes broad social and economic considerations.

The scale and scope of air quality issues range through the following: neighborhoods (environmental justice); intra-regional (Ozone Transport Region); inter-regional (OTAG, Section 126 petitions); continental (US-Canada Accords); intercontinental (PM and ozone); and global (mercury and greenhouse gases). The drivers include traditional air quality issues of fine particulate matter, ozone, mercury, toxics, and regional haze, along with climate change mitigation. We will need to achieve science-based targets by mid-century, and to fundamentally change the way we produce and use energy, plan our built environment, and live our lives.

Effective planning is needed for complex problems. We need to dramatically change the way we conduct air quality planning; "stove pipe" approaches will no longer work. NESCAUM has designed an approach to multi-pollutant planning to help states think more holistically. This approach is conducted with an integrated modeling framework that quantifies environmental, economic, and public health impacts.

Multi-pollutant planning has many benefits. It addresses multiple pollutants, including SO_2, NO_x, CO_2, and mercury. It highlights the tradeoffs and co-benefits of policy options. It also analyzes the environmental, public health, economic, and energy implications of various pollution control strategies, and allows for multi-sector analyses. Multi-pollutant planning also makes sense. Strategies and technologies that reduce

greenhouse gases can also reduce traditional pollutants. It can help design cost-effective approaches that minimize the burden on industry and maximize the use of State resources, and it can result in better environmental results at a lower cost. It promotes integrated energy and air quality planning.

NESCAUM has developed the NE-MARKAL model that covers the region from Washington, D.C. to Maine. It is a least-cost optimization linear programming model that focuses on energy systems and technologies. It looks at everything from extraction to power generation to end uses. The four primary end use sectors that have been built out are transportation, residential, commercial, and industrial.

Within a multi-pollutant policy analysis framework, the NE-MARKAL model can be linked with atmospheric dispersion, macro-economic, and public health assessment models. The output from the various models together will be able to help states develop their energy plans or integrated resource plans for their state. It is a powerful tool, consistent with the complex world that we're moving into, and something that states need to think very seriously about as they plan and try to integrate air quality work with the larger needs and interests of State government.

Tad Aburn
Director
Air & Radiation Management Administration, Maryland

Tad Aburn, the Director of Maryland's Air & Radiation Management Administration, gave a presentation entitled, "Reducing Air Pollution: Challenges and Opportunities." To solve the problems of the next decade, we are going to need many more national rules. We need help in reducing transport from upland states. In regard to local controls, fifteen years ago there were source categories that we could regulate relatively cost effectively with bi reductions, and they made sense. Now what we do is very expensive and the reductions are very small. We are having a hard time finding easy things to do.

Another challenge is the regional competition we are facing. The ports are an example of this; we need to make sure we're not going to end up in a competitor's disadvantage with other ports. In addition, multi-pollutant planning is needed to harmonize control efforts across multiple pollutants.

Maryland has a conceptual model of where does our air pollution come from and what do we do about it. A lot of research on transport has been done, and two very significant findings have come along that change the dynamics of how we do air pollution control programs. They change the way we understand ozone and fine particles to build up and evolve over a day and the local versus transport role and, second, it pushes this need for more national emission reduction programs.

These new findings are the existence of an "elevated reservoir" or "transport cloud" of very high ozone sitting about the Mid-Atlantic during the early morning hours on bad ozone days; and the transport and build-up of ozone and ozone precursors at night.

Our air pollution comes from four distinct parts. One is local emissions in cities. The other three are different types of transport: short-range or local ground level transport (i.e., city-to-city); westerly aloft transport, generally from the west or northwest; and the southerly, Nocturnal Low Level Jet – aloft transport at night, southwest to northeast and funneled along the Atlantic by the ocean and the mountains.

We must continue to adopt aggressive local control measures to reduce the local contribution. We will also need significant help to reduce the transported ozone and ozone precursors in the elevated reservoir. Local controls clearly help reduce air pollution, and "clean hands" are critical when pushing for controls in upwind states. Local controls for other concerns (i.e., toxics/nuisance) are also essential. National controls clearly are a huge priority.

Local stationary and area source ozone control measures should include Electricity Generating Units, other stationary sources, area sources like consumer products and paints, and non-traditional programs like High Electricity Demand Days. Local mobile source ozone control measures should include tailpipe standards, fuels, Vehicle Miles Traveled, idling, and non-road sources like ports, ships, diesel equipment, and lightering.

Both Maryland and New Jersey have a reputation for pushing innovative State programs. Innovations are sometimes non-regulatory and more difficult to quantify and enforce. Non-traditional programs are likely to become a more significant part of the solution with a new ozone standard in the 60 to 70 ppb range.

In regard to reducing transport through National rules, significant progress is underway. A partnership with the Midwest, USEPA, and stakeholders is working well. In addition, on September 2, 2009, a State Collaborative letter was signed by 17 states with a strong recommendation for new National rules. The Collaborative Modeling is a joint effort between the Midwest and the OTC states. It looked at what would be needed to adequately address transport and satisfy the transport provisions of the Clean Air Act. It showed that a national program focusing only on Electricity Generating Units will not be enough.

The Collaborative Letter specifically mentions rules for: Electricity Generating Units; industrial, commercial, and industrial boilers; other large stationary sources of NOx (i.e., cement kilns); Architectural and Industrial Maintenance coatings; consumer products; and mobile sources (i.e., new engine standards and fuels). The regional air quality planning process is on schedule.

Joann Held
Air Toxics Analysis Services

Joann Held's testimony to the Clean Air Council was on addressing sources of air toxics. There are two guiding principles that are important in making decisions about the NJDEP's Air Toxics program. The first is to always ask the following question when

evaluating air toxics emissions: How will this action protect (or possibly harm) public health? Or more simply, is it safe?

The second is that the effectiveness of the air toxics program depends on empowering the whole staff of the Air Quality program to feel that they have a responsibility to identify possible adverse exposures and work to reduce them. It is important to deputize everyone. The Air Toxics Steering Committee has an important role to play in this.

There are several ways the air toxics program could be improved at this time. One is to update reporting thresholds. The current thresholds for reporting emissions on permit applications are, for the most part, much too high and fail to protect public health. Re-evaluating the science behind these limits and proposing updated values is eminently important since so many aspects of the Air Toxics program depend on the information gathered (or not gathered) on permit applications.

Another recommendation is to improve the air toxics emission inventory. The Air Program should incorporate new information collected from permit applications after reporting thresholds are corrected; tap into existing information in the criteria pollutant emission inventory for VOCs and PM emissions which include toxic components (using emission factors); and lobby USEPA for better tools.

The Air Program should also make better use of the Risk Screening Worksheet by updating the health factors (URFs and RfCs) every two to three years, and making sure that everyone in the air program understands the worksheet and knows how to use it.

Other recommendations for the Air Toxics program are to start adding pollutants to the Regulated Air Contaminants list, and to develop procedures to routinely address cumulative impacts in environmental justice communities. New tools are necessary to evaluate sources that are located in one of the many spots in the state that have lots of air pollution sources located in a small area, especially when there are people living close by. Screening procedures will be needed to identify critical neighborhoods, flag substantial projects, focus on the relevant sources, and put the results in perspective.

There are several other areas that should be looked at. For example, the NJDEP should gather information on pesticide usage (especially the carrier gases that are used) and develop State-of-the-Art guidance for activities such as fumigating under tarps. The NJDEP should also consider extending MACT requirements for major sources to cover some of New Jersey's "Area" sources, especially for chemical and pharmaceutical manufacturing. Focus on industries emitting air toxics in the midst of densely populated areas.

Another area that we might want to consider is perimeter monitoring. Guidance for assuring that air emissions from hazardous site cleanups remain within safe levels should be completed and we should expect responsible parties to use the newly available techniques that provide real-time speciated concentrations of air toxics.

Dr. Larry Bernson
Alcatel-Lucent

Dr. Larry Bernson of Alcatel-Lucent spoke on air pollution challenges facing the industry.

Over the past decade, the Clean Air Council has provided exceptional guidance resulting in significant improvements in the air quality levels here in New Jersey. However, New Jersey will face increasing challenges during the next decade as population growth, development and traffic congestion continue to increase.

These issues are going to be compounded dramatically by economic issues, which will result in less money available for use by industry to support their environmental programs, along with concurrent reductions in funding to associated NJDEP programs. With less money available to fund air quality programs, which for years have been proactive and more stringent than existing regulatory requirements, many will be "downsized" merely to ensure compliance with permit stipulations.

Maintaining a positive trend in air quality improvement can continue only if there is a genuine, collective effort between NJDEP and the regulated community that's focused on innovation, technology and education. Thus, in the future, NJDEP will need to expand their assistance to the regulated community in complying with air regulations. It is critical that air permit requirements be appropriate and consistent for similar source operations throughout the State, and that specified monitored data be employed to document compliance status of the source, versus just information that may be useful to have within the NJDEP files.

It is recommended that NJDEP provide detailed web-based training designed to address specific requirements cited within issued permits. The NJDEP should also implement a voluntary carbon footprint reporting program following the USEPA Climate Leaders industry-government partnership. Through participation in this program a company would commit to reduce their environmental impact by completing a corporate-wide inventory of their greenhouse gas emissions, setting reduction goals, and annually reporting their progress.

Through these State-Industry designed voluntary emission reduction programs and web-based training, the State of New Jersey can increase the effectiveness of our air quality programs without creating an economic disadvantage for our businesses in achieving air quality standards not yet met, and establishing programs to confront new air pollution issues.

William Schulte, Esq.
Eastern Environmental Law Center

William Schulte, Esq., of the Eastern Environmental Law Center, presented testimony entitled, "Improving Air Pollution Control at Major Stationary Sources Through the Title V Operating Permit Renewal Process."

Currently, the air operating permit renewal process does not require older major stationary sources of air pollution with outdated air pollution control technology to upgrade that technology. This means that older sources continue to contribute to increased asthma and cancer rates, and to non-attainment, while operating at an economic advantage. Newer facilities must install the most up-to-date technology while older facilities are allowed to continue to operate with less expensive technology.

We felt the simplest solution would be to develop legislation that would require the NJDEP, every five years, to do a review or analysis to determine the Best Installed Control Technology (a term that we made up) at each category of facility for each criteria pollutant. A second step would be a law requiring that each time one of these facilities goes through the Title V renewal process, they are required to upgrade to whatever the NJDEP has determined is the Best Installed Control Technology. This may be made self-funding by increasing the permit renewal application fee.

The benefits would be cleaner air for citizens to breathe, a way to work towards attainment status for criteria pollutants, a level economic playing field, and no need for extensive economic or cost studies because similar facilities are operating successfully with the Best Installed Control Technology installed.

Mr. Schulte completed his testimony with a case study on New Jersey's five municipal solid waste incinerators, and how the above would apply to their differing control technologies.

Peter Montague, Ph.D.
Director, Environmental Research Foundation
Member, New Jersey Environmental Justice Alliance

Peter Montague, Ph.D., presented testimony entitled, "Vision for the Next Decade: Modern Policies for Responding to Climate Change."

Dr. Montague offered suggestions for public policies that can simultaneously address climate change and environmental justice. One is that the State should develop and implement climate change policies that reduce emissions of fine particulate matter (PM) and its precursors (SOx and NOx), in addition to emissions of carbon dioxide. We often think of the best response to climate change as reductions in our carbon footprint, but we could also reduce our general air pollution footprint at the same time if we crafted our policies carefully to do that.

The second kind of policy that would achieve these multiple goals would be to ensure that energy conservation techniques and renewable energy sources are used extensively in urban areas. There is a huge untapped opportunity for employing greater efficiency and conservation of energy, particularly in urban areas, which would simultaneously reduce costs to consumers, would reduce global warming by diminishing CO2 emissions, would improve human health by diminishing fine particulate matter emissions, and would create jobs at the same time. If this were done in the urban areas, which are among our most distressed areas in the State, it could have very beneficial social consequences as well. The State should create a fund dedicated to promoting energy conservation and renewable energy projects in urban areas.

A third public policy worth considering would be that an environmental justice committee should be formed in New Jersey to oversee environmental justice aspects of climate change policy in the State. These aspects would include the above recommendations, along with integrating various environmental justice policies into the Regional Greenhouse Gas Initiative (RGGI).

Dr. Montague closed his testimony by presenting an application of how such policies could reduce or eliminate environmental pollutants and environmental injustices in New Jersey by examining the PurGen coal plant proposed for a 106-acre site in Linden, New Jersey.

Valorie Caffee
Convener
New Jersey Environmental Justice Alliance

The Environmental Justice Alliance's vision for improved air quality in New Jersey is contained in our seven-point policy recommendations that, if adopted, would significantly reduce New Jersey's air pollution levels over the next decade. The policy recommendations are as follows:

The Governor should issue an executive order requiring all privately owned, publicly contracted, diesel-powered vehicles, to emit no more pollution than a diesel-powered vehicle constructed after the year 2007. The executive order should also require all diesel-powered equipment to be retrofitted with the best available technology to reduce these toxic air emissions to the greatest extent possible.

Number two, the state should implement the Coalition for Healthy Ports Clean Air Plan that would require all truckers to do business with the ports in Newark and Elizabeth to be employed by a trucking company that is responsible for using clean trucks and paying a living wage, with benefits, to the drivers.

Number three, the annual air fine PM standard in New Jersey should be lowered from 15.0 to 12.0 micrograms per cubic meter. The PM standard is 15.0 nationally, but California has taken the lead here and has lowered the standard to the more protected value of 12.0, and we think that New Jersey should do that.

Number four, air pollution emitted by incinerators in Camden and Newark should be reduced in the short run and a firm closure date should be established for both facilities in the long run. We really call for the closing of facilities.

Number five, the State should develop and implement climate change policies that reduce emissions of fine PM and its precursors, as well as the emissions of carbon dioxide. We just feel this is so important because they're a key to reducing pollution now and so we must use this as we talk about carbon monoxide.

Number six, energy conservation techniques and renewable energy sources should be used extensively in urban areas; and as mentioned before, we believe that the establishment of an Environmental Justice Committee in New Jersey that oversees environmental justice aspects of climate change policies in the State. It is really crucial because this committee would be dedicated to really looking at the impacts of climate change on the environmental justice community.

The Alliance also supports recommendations contained in the 2009 report entitled, "Strategies for Addressing Cumulative Impacts in Environmental Justice Communities." These include: exploring the possibility of establishing a community-based fine particulate matter air monitoring system in areas overburdened with pollution; establishing a policy for reducing or eliminating air toxics in urban communities based on findings from air quality studies done in Camden and Paterson; committing to addressing co-pollutants as part of climate change strategies and directing resources to urban areas where climate change impacts are most felt.; and aggressively enforcing regulations in "hot spot" areas in environmental justice communities.

Judith Auer Shaw, Ph.D.
PP/AICP
Center for Brownfield & Neighborhood Redevelopment and the Center for Green Building, Edward J. Bloustein School of Planning and Public Policy, Rutgers University

Judith Auer Shaw, Ph.D., a Senior Research Associate of the Bloustein School at Rutgers, presented testimony entitled "Air Quality: Green Building and Community Planning."

Dr. Shaw spoke about the interface between community planning, and green building. An important recommendation to the CAC is that we look into encouraging the addition of language that requires green building standards to be addressed in projects, whether this is for any kind of air permitting or other permitting. Emphasizing the importance of going green in front of a project is really important.

Two projects that we've been working on are the green building manual and the green building remodeling guidelines in the context of community planning. Clearly, when we are looking at planning in communities, we recognize that the settlement patterns that we have been following for many, many years have major land use and greenhouse gas emission impacts, whether it's urban heat island effects from impervious surfaces from

development, the commercial and residential building areas, just the transportation of electricity on lines. It all ends up being CO_2 emissions. We really need to look at the holistic picture on how we do planning in communities if we're going to get a handle on reducing carbon emissions.

The whole idea of traditional neighborhood design is very dominant in a planning role these days, particularly in recognizing walkability. We've got transient-oriented design programs that are very active. We have the Urban Transit Hub Tax Act, which has been trying to focus there. I think everybody's mantra is redevelopment, not new development out in where there are environmentally sensitive areas, or areas that are currently in uses that might be, in the long-term, better uses for us, like farmland. This is about recognizing that we want to have connectivity, so that people can be encouraged more to walk.

One of the more common strategies these days for creating an identity for a community is to go through a community visioning process. The NJDEP should assist in community planning and visioning to create a focus on air quality and greenhouse gas reduction. Clear data should be provided on traffic patterns, energy usage, common practices, and local air quality ordinances. Objectives of these planning efforts should be to reduce vehicular traffic and greenhouse gases and to promote green building and green rehabilitation for residences and businesses.

The green building manual has a basic philosophy that you've got to look at how green buildings affect the economy, the environment, and people. The NJDEP should promote a green building framework due to the links to improved indoor air quality, lower energy consumption, greenhouse gas reduction, improved economic return, improved human health outcomes, and better neighborhood design. In that regard, the NJDEP should support programs that encourage and/or require green building through incentives such as expedited permitting/permit assistance, technical assistance, and awards/publicity.

The NJDEP should also support greening New Jersey's existing housing stock through green remodeling. Various strategies include a Home Performance Audit and energy efficiency strategies such as moisture control, air sealing, insulation, green roofs, energy star products, wind turbines, geothermal energy, solar hot water, and photovoltaics.

Dr. Robert Noland
Director
Voorhees Transportation Center, Edward J. Bloustein School of Planning and Public Policy, Rutgers University

Dr. Noland's testimony was entitled "Economic and Behavioral Effects of Transportation Infrastructure."

Transportation policy affects the behavior of individuals, which then leads to various environmental outcomes, namely, air quality or greenhouse gases. Some of the major issues include: how does the funding of transportation infrastructure affect air quality

and greenhouse gas emissions, indirectly through how we make our choices on how to travel; how do people respond to changes when we actually build things or change the infrastructure; and what are the effects of transportation infrastructure on economic productivity and development.

Transportation funding objectives include reducing congestion and increasing economic development. When the cost of travel is reduced through expanded roads, economic theory suggests that: travelers choose to move to their preferred travel time and route – peak congestion stays the same; new trips not previously taken are generated; longer trips are made; people use their car instead of public transit; and new land is opened to development, leading to more and longer car trips. In the long run, new and expanded roads will not reduce congestion.

Improving traffic flow can reduce emissions from cars, but this effect does not last. There are benefits to more traffic; it allows more people to travel when and where they want, and this increased mobility increases consumer welfare.

The long-run benefits from road expansion include that it allows more land to be developed, benefitting those who own land that is now more accessible, and it can allow an increase in supply of housing and commercial development, lowering costs to consumers. The costs are that developments are more car-dependent and thus emissions increase, and there are environmental costs associated with sprawl.

There are ways that transportation funding and policy can support environmental goals. The NJDEP should encourage and promote the focusing of new development in areas that are transit accessible. This can provide options for people to avoid using motor vehicles. In addition, the NJDEP should support changing the transportation incentive structure in regard to funding of roads versus public transit, and changing the mix of user fees for both roads and public transit.

Public Speakers

Bill Wolfe
Director
New Jersey Public Employees for Environmental Responsibility

In terms of the vision, I would align my views most closely with what we heard from NESCAUM. I thought that was a regulatory vision that needs to move forward, some of the planning and regulation that's been effective in the past in terms of the SIP process and regulating traditional pollutants and just building on the success in the past.

With respect to hazardous air pollutants, I think Joann Held's comments were exactly on point, in terms of technically what needs to get done to improve that program in the department.

All the recommendations are eminently doable. They're doable within a very short timeframe, within existing regulatory authority, and through technical manuals and procedural and management changes within a department.

I just want to make a couple of points, in terms of some of the threats to air quality and global warming and public health that I see that are completely unaddressed, and nobody is talking about, but are highly significant and can undermine everything we're trying to accomplish.

The first is that the NJDEP should raise objections to the Governor's Executive Order #2 as inappropriate public policy. The order establishes new "common sense" policies, including cost benefit analysis, federal consistency and waivers.

In addition, the NJDEP should oppose Assembly Bill A2486, which prohibits New Jersey rules and regulations from exceeding Federal standards, and Assembly Bill A2464, which requires all State agency rules be published in the NJ Register, and prohibits use of regulatory guidance documents except under certain circumstances.

The Global Warming Response Act report is full of recommendations on greenhouse gas emissions, and should be the template for progress moving forward. Another report entitled "New Improvements to NJDEP Emissions Database," which resulted from the NJDEP's Urban Community Air Monitoring Pilot Project, contains specific findings and recommendations on inventory, air permitting, and enforcement issues in the hazardous air pollutants field.

Wilbur J. McNeil
President
Weequahic Park Association, Inc.

Our interest is the Newark Airport. We are one mile west of the Newark Airport, and in all the talk about vehicle traffic and emissions from vehicles, airplanes and diesel ships are not included. We believe that the Port Authority and the emissions coming from airplanes and ships are one of the worse polluters in our area, and we would like daily readings in our community, so that we can know what kind of bad air we are breathing.

The NJDEP should recognize and devise strategies for addressing pollution in the Newark and Elizabeth areas contributed by Newark Liberty International Airport and the New York/New Jersey Port Authority. Environmental damage is being caused to Weequahic Park due in great part by jet fuel pollutants ejected from aircraft and large vessel diesel fuel ships entering and exiting the Newark Bay Port.

Children suffering from asthma and bronchial infections in the immediate area of Weequahic Park who attend schools in close proximity to the Port Authority should be equipped with backpack monitoring devices over a period of time while entering and exiting their respective sites to test for air quality and its effect on their quality of life.

Air quality and sound meters should be strategically placed atop of schools targeted in the vicinity of the Port Authority and Weequahic Park (Oliver Street, South Street, Peshine, and Dayton Street Schools), tall buildings, and billboards within a three-mile range west of the Port Authority for daily testing.

Two local hospitals should keep data on the number of patient visits to their emergency rooms due to shortness of breath and other respiratory ailments.

Timothy Minnich
President
Minnich and Scotto, Inc.

I want to talk today about real-time air monitoring during hazardous waste site cleanups. My purpose is to identify the need for requiring new air monitoring approaches to ensure the public's protection from potentially harmful emissions during the cleanup of hazardous waste sites.

The NJDEP needs to require new air monitoring approaches, particularly for the carcinogens benzene and naphthalene. The use of the USEPA approved method, Method TO-16, for real-time air monitoring during hazardous waste site cleanups is suggested.

Method TO16 has been used at many hazardous waste sites around the country and is strongly endorsed by the USEPA. Through organizations such as the Air and Waste Management Association, we have begun promoting this approach as a more effective means to protect local communities during the site cleanups.

Michael Richter
Sustainable Cherry Hill

It's no secret that air pollution exacerbates respiratory disease that many folks live with, including children with asthma, adults with emphysema, those who work in polluted workplaces without adequate breathing protection, and so forth. In the last several years, I've devoted considerable time and energy to bring awareness to my community regarding New Jersey's best kept secret, the vehicle idling laws.

Most citizens seem to be woefully unaware of these regulations, and to a lesser extent, blatantly ignore them. I maintain that, with negligible expense in this particularly dire budget climate, the State could and should undertake a public awareness campaign to reduce motor vehicle idling, both by our own citizens and the millions of drivers who pass through New Jersey. There is a need to educate our residents simply because they do not know the idling laws exist. Suggested methods could include using the overhead turnpike signs (or other signs) to advertise the idling laws, public service announcements, and visible enforcement.

Please make idling a priority in New Jersey. It's the lowest hanging fruit to pick in the fight for cleaner air. It's a moral obligation we have to the densest state in the country. It's our job to protect our children and those who suffer from cardiopulmonary disease.

At the request of the CAC, the follow-up literature listed below was submitted by Minnich and Scotto in support of their testimony:

1 - A paper presented at an Air & Waste Management Association (A&WMA) conference concerning an air monitoring case study by Atmos Energy Corporation during a Tennessee MGP site cleanup

2 - A press release from Atmos Energy announcing an award from the Southern Gas Association concerning the success of the air monitoring during the above MGP site cleanup

3 - Another A&WMA paper which provides an overview of the R&D project we performed for the Gas Technology Institute (GTI)

4 - Results of the field portion of the GTI project (note: the data attachments are more than 40 MB and can not be sent on our server; we will gladly provide via CD if interested)

5 - A methods guidance document prepared as part of the GTI project

6 - A technology evaluation by the Indiana state agency (Department of Environmental Management)

Written Testimony

Ralph Bitter
Citizen

Solar Power in NJ
While not in the same league as Florida or the Southwest, the solar potential for NJ is huge. A fully developed network in NJ could generate 40-60% of the other regions “full” capability. That much power flowing back into the grid would be a major contribution to reduction of fossil fuel use and emissions.

I would suggest that the CAC investigate and recommend the use of Distributive Generation (DG) to bring the NJ solar grid online. Just like distributive computing, large numbers of small contributions add up to a lot of work - in this case generating electricity. Drops collect to form a stream, streams converge to form a river. Rivers create an ocean of energy. Likewise, small projects, or installations, are easier to fund, deploy and maintain, and are less critical if taken off-line, or if they fail - safety in numbers.

If covered in solar panels, the sheer square footage of usable roofs in our commercial sector should be able to supply the energy needs of the state several times over. Add to that the number of our private residences, and we could have an energy over-abundance to share or sell - certainly in such quantity that NJ residents would never again have to pay for electricity.

PSE&G and JCP&L have fledgling DG programs in the works. The CAC should work with them, and involve state government, to foster and expand DG to all business entities with roof space, and as many homeowners as possible, as soon as possible.

Reducing Energy Use
The CAC should develop a program with business and government to SHUT OFF THE LIGHTS! Why do buildings and parking lots need to be fully lit all night (and day)?

"Project Power Down" would flip the switch on all unnecessary lighting and appliances at the end of the day. Designated floor captains would check their areas before leaving work, ensuring that coffee makers, copiers, faxes, lamps, PCs, and other non-essential electrical appliances are turned off. Building management would ensure that unneeded building systems are shut off, and that work and cleaning crews power down after work is done. HVAC systems should be adjusted to maximize efficiency, with special attention to off-hours reduction or elimination. In state facilities alone, the utility savings could reach 10-25%.

Widespread use of motion sensors would provide light in critical safety areas as needed.

At night, retail and commercial signage could run on lower voltage, reducing energy consumption, while still sending the message. Better, conversion to LEDs would reduce consumption by over 90% - and yes it's out of pocket expense, but it's also tax deductible.

Vehicle Emissions
Retrofit devices and fleet turnover have limited and longer term impacts respectively. The value of controlling existing, older, higher polluting engines of mobile, especially non-road, sources, cannot be understated. As in California, consider the value of implementing a mandatory inspection and maintenance program for all on- and non-road vehicles and equipment.

Please note that these are my personal ideas and opinions.

Maria Beatriz Yabur, Ph.D.
Joint Program in Urban Systems
New Jersey Institute of Technology, Rutgers, The State University of New Jersey – Newark, and the University of Medicine and Dentistry of New Jersey

I would like to submit recommendations to improve current air pollution regulation guidelines. I just finished my doctorate dissertation "Noxious Odor in Residential

Environments: Coping in Reactive and Proactive Ways in Three New Jersey Communities" at the New Jersey Institute of Technology. I studied three communities with current odor problems in northern New Jersey.

I am submitting the recommendations that I developed based on my findings. If you are interested in reading the entire dissertation, I can email you the files.

The recommendations include ideas on planning, odor investigation guidelines, and an informational campaign. Following these recommendations could help reduce the production of noxious odor in residential areas and could facilitate the complaint process for residents. As a result, residents would not have to curtail daily activities and would no longer suffer physical reactions to noxious odor. The financial consequences of noxious odor could also be eliminated. Prevention of noxious odor and an easier complaint process could enable the government to fulfill the right of citizens to breathe clean air, to use their property and to enjoy life.

Note: An abstract was submitted as part of this written testimony, and covers the above summary in detail.

Samuel K. Burlum
President
Extreme Energy Solutions

A written report entitled "Vision for the Next Decade: Air Quality and Pollution Control in New Jersey Recommendations from Extreme Energy Solutions Prepared for the Clean Air Council on May 6, 2010" was submitted by Extreme Energy Solutions for consideration by the CAC.

Extreme Energy Solutions is a company located in Ogdensburg, New Jersey that is dedicated to researching, developing, and delivering the most viable and affordable solutions for fuel economy and emissions concerns. The company has become an industry leader in testing protocol, product and process development, vehicle applications, and standardization in the fuel economy and emissions aftermarket vehicle retrofit arena.

Our company has been rapidly expanding throughout the Northeast due to our good diligence in finding the best alternatives that are favorable for everyone's goals in meeting objectives in lowering vehicle emissions, increasing fuel economy ratings, and lowering vehicle maintenance without compromising the performance of the vehicle, or the budgets of municipalities, fleets, and individual vehicle owners.

Their recommendations and suggestions in the above areas can be read in detail in their report noted above.

List of Acronyms

AAPCC	American Association of Poison Control Centers
A&WMA	Air and Waste Management Association
CAC	Clean Air Council
CAES	Center for Advanced Energy Systems
COPD	chronic obstructive pulmonary disease
CO_2	carbon dioxide
FTIR	Fourier Transform Infrared
H_2S	hydrogen sulfide
IAQ	indoor air quality
I/M	Inspection and Maintenance
IR	Infrared
LEV	Low Emission Vehicle
LIDAR	Light Detection and Ranging
MACT	Maximum Available Control Technology
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NESCAUM	Northeast States for Coordinated Air Use Management
NIOSH	National Institute for Occupational Safety and Health
NJBPU	New Jersey Board of Public Utilities
NJDEP	New Jersey Department of Environmental Protection
NJDHSS	New Jersey Department of Health and Senior Services
NJDOT	New Jersey Department of Transportation

NJPIES	New Jersey Poison Information and Education System
NOx	oxides of nitrogen
OBD	On-Board Diagnostics
OTC	Ozone Transport Commission
PCP	Pesticide Control Program
PM	particulate matter
PM2.5	particulate matter 2.5 microns in aerodynamic diameter or less
RfC	Reference Concentration
RGGI	Regional Greenhouse Gas Initiative
SIP	State Implementation Plan
SO_2	sulfur dioxide
URF	Unit Risk Factor
USEPA	United State Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compounds

Clean Air Council Public Hearing History

2009 Electricity Generation Alternatives for New Jersey's Future: What is the Right Mix for Improving Air Quality and Reducing Climate Change?

2008 Improving Air Quality at Our Ports & Airports—Setting an Agenda for a Cleaner Future

2007 Improving Air Quality through Energy Efficiency and Conservation: The Power of Government Policy and an Educated Public

2006 Indoor Air Quality

2005 Air Pollution—Effects on Public Health, Health Care Costs, and Health Insurance Costs

2004 Fine Particulate Matter in the Atmosphere
- Health Impacts in NJ
- Need for Control Measures

2003 Moving Transportation in the Right Direction

2002 Innovative Solutions for Clean Air

2001 Air Quality Needs Beyond 2000

2000 Air Toxics in New Jersey

1999 The Impact of Electric Utility Deregulation on New Jersey’s Environment

1998 CLEAN AIR Complying with the Clean Air Act: Status, Problems, Impacts, and Strategies

1997 Particulate Matter: The proposed Standard and How it May Affect NJ

1996 Clearing the Air Communicating with the Public

1995 Strategies for Meeting Clean Air Goals

1994 Air Pollution in NJ: State Appropriations vs. Fees & Fines

1993 Enhanced Automobile Inspection and Maintenance Procedures

1992 Impact on the Public of the New Clean Air Act Requirements

1991 Air Pollution Emergencies

1990 Trucks, Buses, and Cars: Emissions and Inspections

1989 Risk Assessment - The Future of Environmental Quality

1988 The Waste Crisis, Disposal Without Air Pollution

1987 Ozone: New Jersey's Health Dilemma

1986 Indoor Air Pollution

1985 Fifteen Years of Air Pollution Control in NJ: Unanswered Questions

1984 The Effects of Resource Recovery on Air Quality

1983 The Effects of Acid Rain in NJ

1981 How Can NJ Stimulate Car and Van Pooling to Improve Air Quality

1980 (October) Ride Sharing, Car– and Van-Pooling

1979 What Are the Roles of Municipal, County, and Regional Agencies in the New Jersey Air Pollution Program?

1978 How Can NJ meet its Energy Needs While Attaining and Maintaining Air Quality Standards

1977 How Can NJ Grow While Attaining and Maintaining Air Quality Standards?

1976 Should NJ Change its Air Pollution Regulations?

1974 Photochemical Oxidants

1973 Clean Air and Transportation Alternatives to the Automobile and Will the Environmental Impact Statement Serve to Improve Air Quality in NJ?

1972 The Environmental Impact on Air Pollution: The Relationship between Air Quality, Public Health, and Economic Growth in NJ

1971 How Citizens of NJ Can Fight Air Pollution Most Effectively with Recommendations for Action

1970 Status of Air Pollution From Mobile Sources with Recommendations for Further Action

1969 Status of Air Pollution Control in NJ, with Recommendations for Further Actions