

Transportation and Small Sources of Air Pollution: Challenges and Opportunities to Achieve Healthier Air Quality in New Jersey



**New Jersey Clean Air Council
Public Hearing April 11, 2012**

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I. INTRODUCTION

The New Jersey Clean Air Council (CAC or The Council) 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 conducts annual public hearings that highlight the most pressing air quality issues affecting New Jersey. After considering the testimony received at the April 11, 2012 hearing, the CAC has prepared this report for presentation to the Commissioner of the NJDEP, and the NJDEP will make it available to the public. For 2012, we are pleased to present our report entitled, “Transportation and Small Sources of Air Pollution: Challenges and Opportunities to Achieve Healthier Air Quality in New Jersey”.

The 2012 CAC public hearing focused on mobile, small area and neighborhood pollution sources. Testimony from the public and other stakeholders sought to identify the extent of vehicular pollution and local sources of pollution and their impact on individuals residing or working in those affected areas. The Council invited a wide-range of speakers to address these issues. Some of those who attended included members from utility companies, trade associations, various governmental agencies, universities, non-profit think-tanks, an environmental justice organization, community groups and the general public. Much is currently being done to identify and address pollution from stationary sources, but less attention has been given to small scale emitters which, collectively, can have a large cumulative impact on a region, community or neighborhood. This year’s hearing topic focused on these smaller scale pollutant sources that are not as easily identified and controlled, mobile sources and area sources. Area sources include emissions from numerous facilities or activities, which fall below a required emission reporting threshold, that individually release small amounts of a given pollutant, but collectively release significant amounts of a pollutant. These sources are small and numerous and have emissions which are not readily associated with a single emission point or small set of emission points.

Mobile sources, such as cars, trucks, buses, and construction equipment, by their design, are transient in nature. As they travel throughout the state, the emissions they generate are spread through numerous communities and expose residents to a mixture of combustion byproducts that can adversely impact human health. While areas adjacent to major roadways running through the state are often cited as those most heavily impacted by this pollution, meteorological conditions and topography can aid in dispersion of these pollutants far beyond these immediate areas. In addition, commuters have intense, short-term exposures to these pollutants while travelling on heavily-trafficked roadways throughout the state. For these reasons, better control of pollution from mobile sources can have a widespread positive impact on environmental quality and the health of all individuals throughout New Jersey.

A subset of testimony at the Public Hearing focused on small area source pollution. This pollution comes from local neighborhood businesses, non-permitted establishments, and private residences. Pollutants released from commercial establishments can include VOCs, HAPs, and particulate matter, while release of smoke and other pollutants from wood burning stoves, fireplaces, and backyard fire pits can mostly be attributed to private residences. Individually, these sources may make relatively small contributions to the total pollutant load in a

neighborhood or community. However, simultaneous small source releases are contributing large air pollution burdens to the state and represent a significant adverse health impact on residents within a community. Moreover, steep gradients in pollutant concentrations around these sources can result in “hot-spots” that disproportionately impact the health of citizens living or working nearby.

II. BACKGROUND

During the past decade, numerous epidemiologic studies have identified an increase in occurrence of adverse health outcomes associated with exposures to traffic-related pollutants that include mobile source emissions and re-suspended roadway particulate matter. These adverse outcomes include asthma, other respiratory diseases (e.g., chronic bronchitis, decreased lung function), cardiovascular effects (e.g., heart attacks), cancer, developmental effects, and death. An American Housing Survey conducted in 2001 estimated that over 35 million people in the U.S. reside within 100 meters of a major highway. Additionally, millions of individuals are exposed to mobile source exhaust through daily commuting activities, occupational activities (e.g., heavy machinery used in construction, landscaping equipment use, tollbooth transactions, etc.), personal activities (e.g., recreational vehicle use), or proximity of their school, office or residence to major roadways. Thus, a large segment of the population of the U.S. is being exposed to the cumulative effects of transient pollutant sources.

In recent years, epidemiological studies have been conducted to determine if living near major roadways or areas with high vehicular density (e.g., cities, shipping terminals, ports, etc.) is detrimental to health. These studies tested the hypothesis that the greater the exposure individuals have to engine exhaust and other traffic-related pollutants, the greater their risk of developing respiratory or cardiovascular disease. Compelling evidence from traffic density studies has shown asthma development and increased aggravation of asthma, decreased lung function in children, and low birth weight and premature births to mothers living near major roadways.

The recommendations below for mitigating the public’s exposure to pollutants from mobile sources, take into account:

1. Identification of vehicle types, emission controls, engine retrofitting, and fleet vehicle usage that contribute significantly to mobile source pollution;
2. Identification of spatial and temporal vehicle usage and pollutant emission patterns along major roadways and throughout communities;
3. Identification of mobile source emissions (SO₂, PM, NO_x, VOCs, air toxics and CO) and their relationship to and impact upon human health and environmental quality.

In addition to pollution from mobile sources, the CAC also addressed area pollution from area sources. These sources are comprised of individual small emission sources within a single geographical area that produce a wide range of air pollutants. These emission sources are generally commercial establishments collocated with residential housing. They can include auto body and machine shops, dry cleaners, service stations, as well as residential wood-burning stoves and fireplaces. Additionally, they can include small engine and solvent use in the home.

The area source recommendations below take into account:

1. Identification of the wide variety of potential sources and assessing their impacts;
2. Education and outreach to both businesses and residential communities;
3. Making changes to wood burning practices and equipment (e.g., fireplaces, fire pits, etc.) to reduce the generation of PM, CO, and other pollutants;
4. Making changes to production and application processes that use VOC-containing solvents and paints;
5. More closely evaluating and regulating the solvent content of consumer products.

III. RECOMMENDATIONS

The CAC considered all recommendations given at the hearing that focused directly on the state's transportation infrastructure, vehicular traffic and congestion mitigation, vehicle fleet usage and maintenance, local area source pollution mitigation and permitting changes. Given the complexities of source identification, community education and outreach, the potential environmental and health impacts of mobile and local pollutant exposure, and the potential economic impact resulting from implementing many of these pollution abatement solutions, the CAC believes that stakeholders need to work together, as discussed below, to achieve a viable, long-term pollution reduction strategy.

New Jersey is a very densely populated state that also serves as a major Northeast transportation corridor and port area. Because of this, high volume of vehicular traffic, movement of goods, and congestion are a fact of life. As we look to redevelop and expand our urban and suburban landscape to continue to serve as a vital transportation and mercantile distribution hub, the CAC believes that steps need to be taken to greatly reduce the adverse health impacts that result from these activities. While years of effort and stakeholder involvement have resulted in the reduction of stationary source pollution, less attention has been given to on-road and off-road emission sources, small source emitters (both permitted and unpermitted), and residential neighborhood pollution sources.

By working in conjunction with other state agencies and local governments, private industry, community organizations, academic and public health institutions, environmental justice and environmental organizations the NJDEP can ensure that pollution sources are properly identified, monitored and controlled in an effort to address these cumulative pollutant impacts on the residents of New Jersey. The specific recommendations aimed at achieving these goals are found in the body of this report.

A. Stakeholders

In an effort to identify, address, and remediate transient and local pollutant sources, a "stewardship approach" must be undertaken to involve a variety of stewards (stakeholders) in State and local government, the small business sector, and residential communities. Since many of the pollutants cannot be tied to one industry or one emitter, it takes more than one entity to identify/reduce/monitor/educate about this pollution, discuss alternatives, and examine environmental and health impacts resulting from the pollutant or pollutant class. The CAC

acknowledges that these recommendations outlined below can only be implemented with cooperation by the following “stewards” (listed with their responsibilities):

- i. DEP – identifying source(s), monitoring emissions, expanded enforcement efforts, education of business community and public, increasing awareness of compliance assistance programs, developing and implementing appropriate new policies and regulatory changes;
- ii. DHSS – identifying susceptible populations, understanding relationships between pollutant exposure and health outcome; identifying specific adverse health outcome, education of community and health practitioners;
- iii. Academic institutions – defining and discovering relationships between pollutants and health; applying new knowledge to state and local problems; technical assistance with modeling, demonstration projects, and outcomes studies;
- iv. Other units of State government – education and outreach to impacted communities, funding environmental protection programs, tax credits for use of “green technologies”, or other financial incentive programs to encourage turnover of old vehicles and equipment;
- v. Local government – identifying local sources, enforcement of ordinances, community education and outreach programs, increasing availability of “green alternatives (e.g., charging stations, compliance assistance programs, assisting with local fleet management solutions);
- vi. Businesses/Manufacturers – fleet management optimization, equipment maintenance and retrofitting, examination of “green” alternatives for vehicles/products/practices, membership in a standards organization to understand and comply with industry best practices;
- vii. Community/Consumers – use of “green” alternatives, greater involvement to identify and report local air pollution violations, education about pollutant effects on the environment and on public health and about pollutant hotline, education on vehicle maintenance practices and idling regulations, education on traffic congestion, education on land use and more environmentally favorable practices of wood burning, lawn care, and solvent use and disposal; helping to develop appropriate new policies that will help communities;
- viii. Environmental justice/ Environmental organizations – empowering communities by providing organizing and technical assistance; helping to educate communities, government, and business about mobile and small pollution sources and their effects on public health; helping to develop appropriate new policies to address mobile and small pollution sources.

B. Transportation

a. Transportation Infrastructure

1. The NJDEP, in cooperation with other relevant state agencies (e.g., NJDOT, BPU), needs to continue to promote (through education, public service announcements, etc.) and expand mass transit in critical areas of the state (e.g., high traffic density areas, PM_{2.5} non-attainment areas, suburban transportation corridors, etc.) in order to substantially reduce vehicle miles traveled (VMT), a critical goal for attaining clean air standards. Building infrastructure designed to

facilitate active transportation (walking, bicycling), which yields public health benefits in addition to pollution reduction, should also be encouraged. In addition, development activities where existing infrastructure is present should be encouraged without overburdening communities.

2. The NJDEP should support and encourage that adequate funding of public transportation and transportation infrastructure be provided whenever and wherever possible. Funding allocations should consider the following:

- Expansion of existing rail service;
- Creation of new rail service corridors;
- Additional high speed EZ-Pass lanes to ease roadway congestion;
- Expanded rail access from ports to storage/distribution facilities;
- Expanded rapid transit system capacity with clean technology buses;
- Development of additional “transit hubs” for people and freight.

3. The NJDEP, with cooperation from the Board of Public Utilities, should encourage utilities’ help and participation with electrification strategies, smart grid investments, and refueling infrastructure for ports, airports, rails, and highways, as well as with assisting their customers with energy efficiency programs. In addition, since utilities generally have strong customer relationships, a source of long-term capital, and experience deploying and managing end-user energy programs, the NJDEP should consider implementing a collaborative stakeholder process to identify, evaluate, and select opportunities and strategies for utilities and others to participate and assist in obtaining area and mobile source reductions.

4. The NJDEP should work vigorously with all relevant State and Federal agencies and the transportation community to create rail service to Central NJ’s warehousing centers, thereby reducing dependence on truck transport. It should work toward implementation of the Raritan Freight Line Initiative.

b. Traffic Congestion Mitigation

5. The NJDEP should further promote idling reduction, “timing incentives” to facilitate vehicle movement (i.e., time-of-day optimization for fleet movement), greater use of mass transit, trip reduction/elimination, facilitation of active transportation (e.g., “complete streets” that provide for walking and bicycling), and other congestion mitigation approaches (e.g., coordinate with other agencies and utilities with respect to scheduling of non-emergency work affecting on-road vehicular movement). Additionally, NJDEP could foster development of an “ecodriving” campaign aimed at improving vehicle operation and driving habits. The NJDOT should expand its traffic management programs and investments to coordinate the timing of traffic signals to minimize vehicle stop/starts and reduce congestion during peak commute times. Furthermore, mass transit can be given priority lanes or authorization to drive road shoulders in congested corridors, where not inconsistent with public safety, to improve traffic flow and bottlenecks.

6. The NJDEP should work with the Port Authority of NY/NJ and other associated groups to institute a system of Radio-Frequency Identification (RFID) tags to track the number of truck trips through the ports in real time. Implementation of tracking would promote:

- More efficient movement of trucks through port access areas;
- Monitoring compliance of vehicle characteristics related to regulatory requirements;
- Reduced vehicle on-site residence time and idling.

c. Land Use and Transportation

7. The NJDEP should continue to work with the Transportation and Climate Initiative, a regional collaboration of 12 Northeast and Mid-Atlantic jurisdictions that seeks to develop the clean energy economy and reduce greenhouse gas emissions in the transportation sector, on ways to reduce greenhouse gas emissions and other air pollutants by taking appropriate measures addressing the following land use factors (also outlined in the State Strategic Plan): density, diversity of uses, design (connectivity of the street network), distance to transit, and destination accessibility. The NJDEP should support a set of actions found in the 2011 Energy Master Plan which support transportation initiatives. These recommendations include:

- Evaluate smart grid demonstrations;
- Encourage use and development of highly-rated near term technologies;
- Monitor progress in fuel cell technology;
- Improve transportation efficiency;
- Create a technology evaluation and verification process.

8. The NJDEP should prioritize permits for “green” projects (e.g., renewable energy generation projects, etc.). It should also prioritize infrastructure upgrades, clean-ups, and permitting in Strategic Growth Areas that do not increase the pollution in already overburdened neighborhoods. It should also assist with funding land preservation.

C. Motor Vehicles

a. Advanced Technology and Alternative Fuel Vehicles

9. As part of its overall strategy to reduce air pollution emissions from transportation sources, the NJDEP, in conjunction with other agencies, should encourage a reduction in petroleum usage by promoting energy efficiency in vehicles through advanced technologies and alternative fuels. Alternatives fuels to consider include Liquefied Natural Gas (LNG), Compressed Natural Gas (CNG), and electricity. Reduction of petroleum use can be accomplished by use of the following strategies:

- “Greening” of the State-owned vehicle fleet in an attempt to reduce the fleet’s petroleum consumption and greenhouse gas emissions by 25 percent or more by 2020;
- Implementation of additional policies to promote the use of Zero Emission Vehicles (ZEV) (e.g., income tax or electricity use credit);

- Assess feasibility of changes to the uniform building code to require provisions for electric vehicle (EV) charging stations (both residential and at other parking areas);
- Enacting legislation or adopting rules to eliminate the current regulatory uncertainty for public EV charging or alternative fueling stations;
- Establish policies for the application of innovative business models that would encourage the proliferation of alternative fuel vehicles, such as refueling/charging stations or leasing plans;
- Create incentives for the placement of alternative fuel “quick fill” stations at locations where the public spends at least half an hour, such as supermarkets, shopping malls, hospitals, parks, rest areas of major highways, and other work places.

10. The State should work with the trucking industry and fuel oil distributors to promote blending of biodiesel with regular diesel and home heating oil. The State’s regulatory agencies should be encouraged to enforce fuel quality standards (e.g., consider adoption of ASTM Standard 6751 for biodiesel fuel quality) that protect diesel fuel users and build confidence for increased utilization. NJDEP should consider developing alternative fuel retrofit guidance for municipal and commercial fleet owners, provide financial rebate incentives to users, and explore options for expanding waste stream collection of used grease from restaurants, rendering plants, and private residences.

b. Idling Reduction

11. Idling reductions have the most benefit in urban areas. The NJDEP should expand its program on mobile source reductions along highways and in cities, as these are the areas where emissions are concentrated. In addition, the NJDEP should develop sensible idling reduction enforcement for construction vehicles and equipment, and consider stricter enforcement of anti-idling laws and truck routes in residential neighborhoods. It should encourage development of local electrified truck stops in neighborhoods and communities, not just on highways, to help lessen truck idling in places where people live and work. An idling reduction plan would include:

- Increased signage at schools, shopping malls, convenience stores, and public venues;
- Public education efforts to increase awareness;
- Expanded anti-idling enforcement for residential areas;
- Expanded outreach and guidance to municipalities for their own idling ordinances and enforcement;
- Expansion of auxiliary power connections at warehouse delivery facilities;
- Expansion of truck stop electrification.

c. Diesel Emissions and Engine Retrofitting

12. Retrofitting of heavy polluting diesel engines should be considered where replacement is not feasible. Evaluation of pilot programs should include consideration of emission reductions, health benefits, and costs.

13. Currently, non-road diesel engines are not subject to opacity testing. The NJDEP should consider undertaking a pilot program to evaluate the feasibility of opacity testing of non-road diesel construction equipment modeled on the existing program for on-road diesel vehicles for the purpose of reducing pollution from these sources.

d. Fleets

14. Large fleet owners should be encouraged to work together to share ideas about fleet management, retrofits, emissions, etc. In instances where discrete communities can be impacted by changes to fleet deployment and movement, community representatives should join in the discussions to address issues concerning effects upon community residents.

15. The NJDEP should consider recommending new incentives, including tax incentives, to encourage more fleet owners, especially those that service port areas and operate drayage fleets, to change over to electric vehicles, hybrids, and alternative fuel vehicles.

D. Area Sources

a. Monitoring In and Inventories for Neighborhoods

16. Local air pollution sources, in neighborhoods where they play a major role, need to be assessed with short-term monitoring studies that include speciation measurements (e.g., emissions from wood burning stoves, air toxics, resuspended street dust). Better monitoring tools that encompass new ideas and new technologies should be developed. This could include tools for both saturation and purposive (directed at the potential source, but with better emission signatures) monitoring.

17. A DEP “compliance assistance” team should be assembled for business outreach as modeled by the Paterson City compliance effort. There is a special concern for urban areas where numerous small sources can create significant air toxics exposures for the residents of some neighborhoods. Identifying these sources may not be possible using traditional emission inventory techniques because their emissions are below the thresholds that trigger reporting on permits. The NJDEP should consider new identification methods such as “walking studies” of neighborhoods. Community representatives, along with local technical experts, such as those from County Environmental Health Agencies (CEHAs), could work together to canvass neighborhoods to more thoroughly identify the sources of air emissions and determine which would be appropriate for further investigation.

b. Small Sources of Volatile Organic Compounds (VOCs), Air Toxics and Particulate Matter (PM_{2.5})

18. The NJDEP should extend requirements for Dust Management Plans to more operations that have outdoor activities adjacent to residential areas. Better street cleaning should be maintained to minimize street dust re-suspension, since dust contains numerous contaminants.

19. A lawn mower voucher/exchange program, whereby an individual turns in an older (two or four-stroke) gasoline lawn mower and receives a voucher for an electric mower, should be encouraged by the NJDEP. Commercial businesses can be encouraged to retrofit or replace current equipment with propane powered engines.

20. The NJDEP should create and work toward adopting a “model ordinance” for wood-burning equipment to regulate air pollution (e.g., encourage use of adjustable burn rate wood stoves) emissions for cities and municipalities. In addition:

- Tax credits should be considered for retrofits or “changeouts”;
- Fuel pellet standardization for purity (e.g., ash content, chemical residuals, etc.) and heat generation per unit mass should be encouraged.

21. For area sources, the State should continue to provide grants for changing out equipment responsible for air pollution and air toxic emissions. The BPU should continue to promote Energy Efficiency Programs which could help to replace old residential furnaces in densely populated areas. Commercial establishments could be encouraged to utilize biodiesel for oil-fired systems used in industrial process, power generation, etc.

22. The NJDEP should support efforts to use bioheat in State buildings and small to mid-sized commercial establishments. Target goals for bioheat utilization can be established, particularly in government buildings as related to bidding and procurement procedures, to minimize or eliminate cost premiums compared to purchasing conventional heating oil.

23. The motor vehicle painting and spray-coating industry is a significant source of VOCs. The NJDEP should consider the following regulatory actions:

- Revise or eliminate the ½ gallon/hour spray rule since it is outdated due to lower levels of VOCs in modern paint formulations;
- Clarify the 3-oz cup rule for paint sprayers to make it clear that auto body painting in the open air (e.g., in residential neighborhood driveways) cannot be performed if it would require more than a total of 3 ounces of mixed material (e.g., primers and paints);
- Regulate water-based paint coatings since they still contain VOCs;
- Remove conflicting regulations between MVC and industry standards organization for auto body painting;
- Reexamine existing permits during the renewal process to determine if any chemicals and designated air toxics need to be added due to changes in reporting thresholds resulting in changes to environmental data or toxicity testing.

24. NJDEP should consider revising and reducing regulatory thresholds for many pollutants, paying special attention to proximity of nearby populations, because they may be emitted by small urban sources at levels below current thresholds and yet result in health risks that are above acceptable levels.

25. NJDEP should develop criteria for evaluating permits more than ten years old with updated and accurate information regarding pollutant emissions.

E. Neighborhood and Community Outreach

26. The NJDEP needs to work more with community-based groups to identify and abate local air pollution sources.

- The NJDEP should provide more education about air pollutants and health effects to community groups;
- The NJDEP should develop an outreach plan to highlight violation reporting procedures, hotline information, etc.
- Community involvement should be solicited to conduct inventory of neighborhoods;
- Local community groups could be solicited to assist with air monitor placement, and with more timely data collection and reporting results;
- Municipalities and local community groups could be recruited to increase awareness of vehicle idling rules and traffic signal synchronization to reduce vehicular pollution impacts throughout a neighborhood;
- The NJDEP should work with community-based groups, environmental justice groups, environmental groups and the private sector to develop appropriate new policies to address small pollution sources, especially in urban areas.

IV. SUMMARY OF TESTIMONY

Bob Martin
Commissioner
New Jersey Department of Environmental Protection

Commissioner Martin opened the public hearing by first acknowledging the valuable work of the Clean Air Council (CAC). Below is a summary of his remarks.

The CAC performs quality work and provides good advice which helps shape policy for clean air. Improving our air quality to benefit the health and welfare of all residents statewide is a priority for him and the Governor. They are extremely committed to air quality, and under their leadership, New Jersey has made great strides in improving the air quality in the State over the past two years.

The Christie Administration has taken tough legal and administrative actions to reduce air pollution from out-of-state, coal-fired power plants that are significant polluters of New Jersey air. In our fight against this pollution, the Administration filed and won a Section 126 petition (under the Clean Air Act) against the GenOn-operated Portland power plant, located in Pennsylvania across the Delaware River from Warren County. As a result of New Jersey's petition, the Portland plant would be required to reduce its emissions by 60 percent by the end of 2012 and by 81 percent within three years. GenOn recently announced that it will instead shut down its coal-fired units by 2015, which will eliminate over 30,000 tons of sulfur dioxide annually that is dumped on North Jersey residents.

New Jersey also is battling three other western Pennsylvania power plants in federal court right now, to force them to put on emission controls. The DEP took the lead in a lawsuit seeking to force Allegheny Energy to install pollution control equipment to cut emissions of sulfur dioxide and nitrogen oxide from these three plants. In addition, the DEP has been battling in court to force significant reductions in emissions from Homer City Station, also in western Pennsylvania, which is one of the most polluting plants in the nation.

This Administration will remain vigilant against out-of-state polluters. The DEP's efforts are paying dividends in that some companies recently announced plans to close coal-fired, polluting plants in Pennsylvania and Ohio, or to switch to natural gas. Governor Christie has also delivered a very clear message that he will never allow a new coal plant to be built in our state.

While the DEP has held power plants in other states accountable, it has also been addressing air issues in our own state. The DEP recently announced a major agreement between New Jersey, the Port Authority, and Covanta Energy. This agreement calls for Covanta to install new state-of-the-art baghouse emissions controls on all three incinerator burners at Covanta's Essex County Resource Recovery Facility in Newark. This will mean cleaner air for those living in Newark's Ironbound section, an overburdened community where people are impacted daily by cumulative sources of pollution. Twenty-five percent of the children in Newark have lung-related illnesses, and that is not acceptable.

The DEP has staff committed to combat environmental injustice in places like Camden, Newark, Paterson, Elizabeth, and Irvington. One of DEP's priority goals is Goal 3, which aims to minimize cumulative impacts in urban areas. In addition to stationary sources, reducing mobile source emissions will simultaneously address this goal.

Governor Christie signed a diesel Executive Order in 2011, establishing a 3-year pilot program to reduce diesel emissions by heavy construction equipment used on Department of Transportation (DOT) funded projects, primarily in urban areas. The DEP is also continuing to implement the mandatory retrofit law, ensuring that emissions are reduced from 25,000 buses, trucks, and government vehicles operating throughout New Jersey by 2016. A Clean Air Strategy to reduce diesel emissions from ocean-going vessels, cargo-handling equipment, heavy-duty diesel trucks, locomotives, and harbor craft has also been developed with the Port Authority of NY/NJ.

On the stationary source side, "High Energy Demand Day" (HEDD) plants are mandated by May of 2015 to either close or install the latest technology upgrades to high polluting units. In addition, the DEP is requiring significant reductions in sulfur content for home heating oil.

The Governor is also committed to clean renewable energy, including a major commitment to solar energy. New Jersey is first in the nation for installed commercial solar capacity, and second to California nationwide in residential solar. We have accelerated the development of offshore wind projects to speed creation of wind turbines that will generate cleaner energy. New Jersey's unique geographical position makes it ideal for offshore wind projects. Several developers have responded to a federal call for wind power projects, and offshore leasing should be in place by this Fall. We are a leader in this effort.

Thirty percent of New Jersey's ozone problems are caused by mobile sources. The DEP is part of the Northeast Electric Vehicle Network and is working to accelerate the development of electric vehicle charging stations to drive market demand for electric vehicles. There are currently over 70 recharging points in New Jersey. Use of electric and alternative fuel vehicles could reduce sulfur dioxide and nitrogen oxide emissions by thirty percent. Two of the most viable alternatives are electric and compressed natural gas (CNG), both of which work extremely well for commercial fleets.

New Jersey's Energy Master Plan (EMP) recognizes that the most cost-effective way to reduce energy costs is to use less energy. A shift to natural gas (and no coal) is also a key component, as is renewable energy. The EMP promotes a diverse portfolio of new, clean, in-state generation.

New Jersey has implemented other measures to reduce small sources of pollution. The DEP recently adopted rules for consumer products, paints, auto body repair shops, gas cans, adhesives, and solvents used in consumer and commercial applications and vapor recovery at gas stations. The Dry Cleaner Grant Program thus far has approved ninety grants totaling \$2.6 million. This allows them to use a less hazardous solvent, or "wet cleaning".

In closing, I thank the CAC for their leadership. The Governor and I are committed to focusing on air emissions from mobile sources, area sources, and major sources from other states. We look forward to the CAC's recommendations and will take them under consideration. In the past, quite a few of them have been used in directing public policy in the state.

David Kuhn

Assistant Commissioner, Capital Investment Planning and Grant Administration
New Jersey Department of Transportation (NJDOT)

Dave Kuhn's presentation was on how the NJDOT is working to improve the air quality in its daily operations, its projects, and through strategic planning and partnerships. The NJDOT is challenged in advancing three goals: improving transportation, improving the economy, and being good stewards of our environment. Although those three goals don't always mesh well, through innovation, technology, and partnerships, the NJDOT is finding new ways to get it done.

New Jersey is in the process of adopting a new State Strategic Plan. One of the key elements of the plan is to encourage development where infrastructure already exists. This prevents unnecessary land consumption, minimizes automobile trips, and provides opportunities for alternate transportation. The NJDOT is a key player in maintaining and improving existing infrastructure, and where possible, will prioritize transportation investment in built up areas. Preservation of the existing infrastructure is very important and a necessary step to improve air quality.

Beyond infrastructure preservation, the NJDOT is taking many steps to improve the environment while they work to improve transportation. One of these is traffic signal optimization, which has been found to reduce idling and delays by 20 percent, and reduces emissions as well. A new technology called adaptive traffic signals is being explored for implementation. This technology reads traffic congestion in real time and can make adjustments on its own to optimize performance of the intersection.

The NJDOT owns and operates its own car and truck fleet for its daily maintenance of our highways. They have been working on greening their fleet with hybrids, ethanol, and compressed natural gas vehicles. The diesel vehicles can also all run on 5 percent biodiesel. As their existing fleet ages, they will continue to replace vehicles with the latest technologies to minimize emissions.

The NJDOT participates with the NJDEP and the Board of Public Utilities on a multi-state Transportation Climate Initiative. They look for mutually beneficial strategies to address climate change. One of these is to develop a plan for a network of electric vehicle charging stations throughout the northeast.

In their construction practices, the NJDOT is working on the pilot to retrofit diesel construction vehicles. They are also studying the specific impacts of using a warm asphalt mix rather than hot, as warm mixes result in lower emissions in both production and application.

The NJDOT is involved in several programs to reduce vehicle miles traveled. These include the transit village program and a complete streets policy. The aim of transit-oriented development is that people don't need to drive as much, and they take more trips by transit, bicycling, or walking. Through each implemented complete streets project, the transportation network becomes friendlier to non-auto uses, and barriers to walking, bicycling, and transit get smaller.

Another area that NJDOT is working in is goods movement. Improving how we move freight helps our economy, saves our infrastructure, and improves air quality. Moving goods to rail or ship relieves our congested highways and reduces damage to our infrastructure. The NJDOT is working on a project that will reactivate a rail line and re-open a ward at the Raritan Industrial Center in Middlesex County. This project will maximize the use of rail to move goods, will reduce truck traffic, relieve the existing northeast corridor line, and open up a new business opportunity in the state.

Finally, there is a growing partnership between transportation and health agencies to encourage healthy, active lifestyles. One program funds education and enforcement programs along with infrastructure projects and is enabling more children to walk and bike safely while reducing traffic congestion and air pollution around schools. NJDOT recognizes that their continued success in achieving an efficient environmentally responsible transportation system will depend on their partnerships with many public, private, and nonprofit organizations.

Dave Gillespie

Director, Energy and Sustainability
New Jersey Transit (NJT)

Dave Gillespie presented a summary of NJT energy and sustainability programs as they affect the air quality in New Jersey. It included information on NJT's public transportation system in New Jersey, how it relates to the national public transportation system, and how those systems air quality and economics. Getting people out of their private automobiles and onto public transportation, the core business of NJT, reduces the amount of fossil fuel consumed each year with its associated air emissions, and helps reduce traffic congestion.

NJT is the third largest transit system in the country. The primary goal of NJT is to increase ridership, which improves efficiency of operations and lowers costs and emissions per passenger mile. They also indirectly reduce emissions and energy use by reducing congestion.

Approximately eleven percent of the New Jersey workforce uses public transportation to get to and from work. In addition to the air quality benefits, public transportation is a critical component of the economic engine that drives commerce in New Jersey. It generates jobs and business sales, and property values are higher near public transportation, resulting in higher tax revenues. Public transit saves commuters money in terms of the cost of motor vehicle fuel, maintenance, tires, and parking costs.

NJT is a green company and the services they provide are critical to improving the air quality in our neighborhoods. They select vehicles for purchase that offer the best life cycle costs with considerations for initial cost, fuel costs, maintenance costs, vehicle efficiency, and expected life

of each vehicle. It is better to have more efficient vehicles carrying more people than it is to have few highly efficient vehicles carrying less people. This is necessary in order to keep the cost as low as possible, keep the fares down, and that gets more people on the public transportation.

A large portion of the NJT rail system operates using electricity. Sixty-five percent of their rail service is provided by electric powered locomotives or electric powered rail cars, and those services carry seventy percent of their rail passengers. Their light rail system is almost all electric powered except for some diesel service on the South Jersey Light Rail system.

NJT is reducing its energy consumption and greenhouse gas emissions through several projects and initiatives, including the purchase of 33 new diesel electric locomotives that meet Tier I emissions standards, and 5 Tier II locomotives for switching service. These move the trains around in the yard, and the old ones had to be left on 24/7. The new ones have hot starts and equipment on them that allows them to be shut off, so they are much less air polluting. All new locomotives regenerate electricity when braking.

NJT is also using Ultra Low Sulfur Diesel in advance of Federal mandates, and they have tested their locomotives on B-20 biodiesel and plan to use that fuel when it is economically and logistically feasible. NJT has also purchased 1,145 new diesel buses, which have much cleaner emissions, smart transmissions that improve gas mileage by about 10 percent, and they have bicycle carrying accommodations. Longer compressed natural gas (CNG) buses are being purchased to replace an aging fleet, and NJT is upgrading the CNG fill station at their Howell Bus Garage to accommodate the continued use of this motor fuel.

State of Good Repair means keeping your equipment up to date, making it run more efficiently, making it burn less fuel and reduce operating costs. All of those things add up to less cost per passenger mile, which allows NJT to hold fares down. Other NJT initiatives including an energy efficient electric rail heater system, a solar system on the roof of one facility, recycling at all stations, use of less hazardous chemicals for parts cleaning, particulate filters on older buses, and efficient lighting at maintenance facilities and garages.

NJT makes a significant contribution to the negative national transit net carbon footprint, and the benefits and air emissions of using public transportation versus driving your own car are also significant.

Christopher Zeppie

Director, Office of Environment and Energy Programs
New York/New Jersey Port Authority

The Port Authority is charged with facilitating the movement of goods and people within the region, nationally and internationally, and plays a key role in regional, national, and international commerce. The Port Authority recognizes its obligations regarding the facilities it operates, as well as the responsibility to help address the broader environmental issues that challenge the region.

Many port operations involve the use of diesel engines, and the exhaust emissions resulting from diesel engine combustion contain pollutants that impact human health and greenhouse gases that affect climate change. The challenge they face is how to accommodate cargo growth with all of its economic benefits that it brings, and do so in a way that protects the environment and quality of life of the people working and living in the communities near the port.

The response to that challenge has been to develop a clean air strategy for the port, working in cooperation with other groups, including the NJDEP, the New York State DEC, the USEPA, and the New York City Mayor's Office. This clean air strategy for the port identifies voluntary actions to reduce emissions across the full spectrum of port-related services, including ocean going vessels, harbor craft, cargo handling equipment, trucks, and rail serving the port.

Several strategy actions underway include the truck replacement program, which uses federal grant money to provide 25 percent of the cost of a newer, cleaner replacement truck and Port Authority funds for a lower interest rate for the remaining 75 percent of the cost, and a loan and retrofit program, which combines various funding to provide truckers with zero percent financing to acquire a newer truck equipped with a diesel particulate filter provided free of charge. In addition, a truck phase out plan restricts access to Port Authority facilities to drayage trucks based on age of the truck engine.

Other programs funded all or in part by the Port Authority include the ocean going vessel Low Sulfur Fuel incentive program, in which qualifying vessels must reduce their speed on inbound and outbound transits, and the installation of shore power, which allows cruise ships to plug in to shore power while at berth and shut down their on-board diesel generators. The locomotive Generator Set Retrofit uses funds to replace the large, old, dirty, and constantly running diesel generator set with 3 small ultra-low emitting diesel GenSets that are used only as needed.

Other clean air strategies are set to be implemented in 2012. Identifying resources is a significant challenge and an area in which the Port Authority could use some help. These resources include funding for incentives to encourage participation in voluntary actions, plus resources to sponsor and manage these initiatives, verify their accomplishment, and track emission reductions resulting from them.

In addition to activities at the ports, the Port Authority has made great strides to improve emissions from vehicle and equipment fleets that they own and operate. These strides include the use of alternative fuels, diesel retrofits, and the use of ultra-low sulfur diesel fuel. The Port Authority PATH continues to support mass transportation in the region through projects such as expanding platforms, and installing anti-idling devices onto several utility track vehicles.

The Port Authority also supports policies to reduce emissions from its patrons' vehicles, particularly across the tunnels and bridges the agency operates. It has implemented time-of-day toll pricing for EZ pass trips to incentivize travel in less congested time periods. Other programs specifically target vehicles and rideshares that reduce congestion. Programs at local airports, such as replacement of boilers at Newark Airport with more energy efficient units, installation of a public multi-fuel gas station providing CNG, E-85, and biodiesel, also at Newark, and

installation of electric vehicle recharging stations at JFK and LaGuardia, are also managed and funded by the Port Authority.

The Port Authority continues to move into new frontiers and media to promote air quality. It has launched an online transportation carbon calculator that offers users the opportunity to calculate their carbon footprint due to travel.

Chuck Feinberg

Chairman

New Jersey Clean Cities Coalition

The New Jersey Clean Cities Coalition is a United States Department of Energy (DOE) program. Its mission is to advance the energy, economic, and environmental security of the United States by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption in the transportation sector. It provides seed money to locally based coalitions to form local partnerships and to determine ways that work locally. It gets money out to the street to deploy new technologies.

Some of the coalition's current projects and activities include: a CNG Fleet and Infrastructure Project, an electric vehicle policy support contract with NJDEP, a Clean Cities Program Support contract with DOE, a DOE Regional Electric Vehicle Network Planning grant, and a Diesel Emission Reduction Program, Marine Vessel Engine Replacement Grant with USEPA Region 2. They also participate on statewide and regional workgroups such as Renewable Natural Gas, Northeast Diesel Collaborative Clean Construction, and the Sustainable Jersey Green Fleet Policy Committee.

The Coalition supports several petroleum displacement methods. They replace petroleum with alternative fuels and fuel blends. They reduce the use of petroleum by promoting energy efficiency in vehicles through advanced technologies and more fuel efficient vehicles. They also eliminate petroleum use by promoting idle reduction, greater use of mass transit, trip elimination, and other congestion mitigation approaches.

The Coalition believes that a broad portfolio of alternatives should be supported by the State of New Jersey. Alternative and renewable fuels, including electricity, natural gas, and biodiesel, more fuel efficient vehicles, better driving habits and vehicle maintenance, idle reduction technologies and behavioral changes, and trip elimination through telecommuting and ridesharing are all ways the State can reduce or eliminate the use of petroleum.

There are several different types of electric vehicles, and all different sizes and shapes are now on the market. Electrification in urban delivery vans and light-duty and medium-duty trucks is a very good use of this technology. Electric vehicles receive better mileage than conventional vehicles, and lower tailpipe emissions. They are also less expensive to maintain and operate than conventional vehicles, and they reduce the United States reliance on imported petroleum. There is also fueling flexibility in that they can charge at home, at fleet lots, or at public charging stations. One challenge is that we have to address the lack of public and workplace charging locations, and how to incentivize to install workplace charging in New Jersey.

Through a DOE grant, the Coalition is leading a team to implement the first large-scale deployment of Alternative Fuel Vehicles (AFVs) and infrastructure in New Jersey. This project is stimulating the entire discussion of alternative fuels. Natural gas for transportation, in lieu of petroleum usage, is a cleaner, cheaper, domestic, and proven technology. One project has about 250 trash trucks and shuttle buses on the road right now using natural gas. Garbage trucks are a particularly good use for natural gas for many reasons, including that they operate in neighborhoods where there is exposure to people. This program will displace almost two million gallons of petroleum per year.

Another extremely important part of the mix of alternative fuels is biodiesel. It can be used in any diesel engine right now with no modifications, and is regularly and plentifully available. It is mainly manufactured from recycled restaurant grease, is biodegradable and non-toxic, and is a cleaner-burning replacement for diesel fuel. Other increasingly available alternatives include ethanol, propane, and hydrogen.

The biggest problem facing fleets and converting to an alternative fuel is the upfront cost; the incremental cost of the vehicle because alternative fuel vehicles cost more upfront, and the infrastructure. We need to find a way to help incentivize fleets to do that.

Dr. Paul Liroy

Deputy Director for Government Relations and Director of Exposure Science
Rutgers, Environmental and Occupational Health Sciences Institute

Dr. Liroy's presentation was on the characterization of community exposure to local air pollution sources in New Jersey. Over the years, New Jersey state regulations, federal regulations, and different industry policy changes have resulted in a great improvement in air quality for most air pollutants. The only two that remain a major issue are PM_{2.5} and ozone, with sulfur dioxide contributing to the PM_{2.5}.

The issues today include local sources and mobile sources. Air quality trends are associated with particular types of monitoring locations, but they do not necessarily drill down in the neighborhoods, where certain problems may exist for a variety of reasons. Local sources include both residential and commercial point sources, such as wood burning stoves and re-suspended street dust. In the neighborhood, that is where you have the higher pollution problems which are not measured because we don't have the monitoring strategy for it.

Differentiating apparent sources from the actual sources in neighborhoods could be done through various methods, including emissions inventories, source apportionment, and directional measurement studies with plume verification. One suggestion is to consider developing a "swat team" of air pollution monitors where they can go out and intensively investigate problems which are identified by the neighborhood or through emission inventories.

Air toxics are also being reduced across the state. Significant achievement has been made due to emission controls on stationary sources, as well as emission controls on automobiles. Because of decreases in benzene and formaldehyde, it may now be easier to differentiate local source contributions.

Strategies to identify and resolve problems include local hot spot studies of air pollution, and community-based research. Hot spots are areas where the concentration of air toxics is at a level where individuals may be exposed to an elevated risk of adverse health effects. New Jersey has hot spots in Camden, Paterson, and sections of Elizabeth, Linden, Newark, and Jersey City. Hot spot areas have mixed sources of air pollution. Other hot spots may be found near point sources and roadways.

Problems can be identified by doing measurements, such as through saturation or purposive monitoring, as well as through modeling of change in source emissions. Better monitoring tools are needed. Community-based research is also needed. A systemic design working collaboratively with the neighborhood to identify the problems will improve community involvement and reduce tension. The results should be reported and actions recommended. The goal is to more easily define emission sources and consider effective control strategies.

One study done by EOHSI was in Braddock, Pennsylvania at a steel mill, using mobile monitors. The strategy was to go through the area near the source to see if there is a local impact on the plumes from the mill. It was found that the impact was primarily not from the mill itself, but from all the diesel trucks that went in and out from the mill and the tremendous amount of re-suspended dust that was occurring.

Motor vehicle congestion is also a problem. Increased tolls on the turnpike causes increased truck traffic on local roads. Sequencing of lights is also not occurring where it should. Finally, we need to be careful with electric vehicles. The electricity they need to run is primarily from the burning of coal, which increase NO_x emissions indirectly. This will put more ozone downwind. Electric vehicles are an important component of the mix, but they have to be dealt with in a way that's effective for the use of New Jersey because we are a downwind recipient of emissions, as well as a creator of emissions. Nuclear power is also an important part of the mix. If we are going to use electric vehicles in New Jersey, we have to consider a major source being input power.

Eric Svenson

Vice President Policy and EH&S
PSEG

Eric Svenson's presentation was on the next generation of ozone reduction strategies. We have made a lot of progress over the past 25 years in terms of ground level ozone reduction, but the easy stuff has been done and now we are going to need unique and innovative approaches to get to the next stage to achieve needed air quality improvements. Electric and gas utilities can be a partner with many municipalities and stakeholders to accomplish many of the needed changes that we have to accomplish.

As we've improved our understanding of the health impacts from ground level ozone, that has led to tightening of the standards since 1979. The 2008 standard is 75 ppb, and in 2013, this is likely to be further tightened beyond that. All of New Jersey is expected to be designated as marginal non-attainment relative to the 2008 standard. The way to gain air quality

improvements and ozone attainment is a combination of local NO_x and VOC reductions along with regional NO_x reductions.

New Jersey has made tremendous progress in reducing local emissions of NO_x and VOCs. There has been a 70 percent reduction of NO_x over the past 20-some years, and from a point source (i.e. such as a power plant) standpoint, almost a 90 percent reduction in that same area. New Jersey also has among the lowest regional fossil NO_x rates compared to any of the other states that make up the eastern half of the United States.

Mobile sources are currently the largest source of NO_x, and mobile and area sources are the largest source of VOCs. As such, the focus for the future needs to be on getting upwind NO_x reductions and in-state reductions from mobile and area sources. Utilities may be a very good policy vehicle for doing so, due to their strong customer relationships, source of patient capital, and experience deploying and managing end user energy programs.

For example, PSEG is a very large fleet owner, and they have been investing in alternative fuel vehicles. Many other fleets (i.e., Port Authority, Verizon, etc.) are also taking voluntary measures to make reductions off their fleets. A meeting of fleet owners may reveal opportunities for capturing additional SIP emission reduction credits; to inventory their actions and share best practices. In regard to electric vehicles, utilities can assist in facilitating their market deployment through smart grid investments.

Another project utilities can help with is to make investments in infrastructure and equipment for Truck Stop Electrification. One such project is through the Clean Cities Coalition Idle Air project, where trucks hook up to airlines so they don't have to use their own air conditioning.

The Port Authority of New York and New Jersey has a clean air strategy at various stages of investigation and implementation. Opportunities for electrification include the various cranes and auxiliary power units. Utilities may be able to assist the ports through direct investment for electrification. Similar assistance may be offered to New Jersey airports for electrification of their ground support equipment, including bag tugs, belt loaders, ground power units, and air conditioning units. A substantial portion of New Jersey Transit's train fleet still runs on diesel, and utilities may be able to assist with electrification of trains as well. In regard to heavy-duty CNG vehicles, utilities can assist by making the needed investments in CNG refueling infrastructure.

In regard to point and area sources and energy efficiency, utilities can assist by making direct energy efficiency investments for customers. PSEG already does a lot of work with hospitals in helping them put in new boilers and chiller packages. This will yield an energy efficiency improvement, a reduction on their bills, and a benefit in the reduction of criteria pollutants and greenhouse gas emissions.

In the SIP planning process moving forward, the State should implement a collaborative process to identify, evaluate, and select appropriate emission reduction strategies. It is important to examine costs, cost-effectiveness, regulatory barriers, and timing. Consider the time and

location of emissions for maximum benefit, and be a catalyst for innovative solutions. Utilities can be a valuable partner in implementing emission reduction strategies.

Julie McDill
Senior Engineer
MARAMA

This presentation was on emissions inventory information on mobile and area sources in New Jersey. MARAMA collects the inventories from all states from Maine down to Virginia and turns them into a modeling inventory for use by the Ozone Transport Commission's modeling group to understand the impact of controlled technologies on the air quality in our region looking forward. It looks at what do we expect, the measures that we have in place, and our planning to implement and how will they improve our air quality.

Preparation of a regional modeling inventory takes almost two years to complete. It involves selecting the years to examine (2007 and 2020 for the current one), and then gathering all the information from all of the states, from USEPA, and from other regions and Canada. Its' compiled and put into a format that can be used regionally. Emission models are then run for the base year and the future years, with a lot of what-if scenarios.

Emissions data is what we are focusing on here. The sources that MARAMA inventories include area, biogenic, mobile on-road, marine, air, and rail, and mobile non-road (i.e., construction equipment). Point sources are the power plants and factories.

In New Jersey, half or more of VOC emitted is biogenic for both 2007 and 2020. By 2020, reductions in mobile sources leave area sources (solvent use) the major source of VOC. The overall VOC reduction from 2007 to 2020 is expected to be 17%, mostly due to reductions in mobile emissions.

The predominant NO_x source in New Jersey is mobile in both 2007 and 2020, but shrinking. Area sources are predominantly fuel combustion, and NO_x reductions from area sources is minor. An overall NO_x reduction of 50% is expected by 2020 mostly due to reductions in mobile emissions.

The overwhelmingly predominant SO₂ source is electrical generation in both 2007 and 2020. Area SO₂ sources are predominantly fuel combustion, which is expected to drop 73% by 2020, due mainly to reducing sulfur in fuel.

Area sources of PM_{2.5} are predominant in both 2007 and 2020. These are a mix of wood burning, fuel combustion, and re-entrained dust. Approximately 20% of area source PM_{2.5} is residential wood burning, and approximately 8% is from a large wildfire that occurred in 2007. An overall PM_{2.5} reduction of 9% is expected by 2020, mostly due to reductions in mobile emissions.

In regard to mobile emissions estimates, the USEPA has developed a new model called MOVES, which replaces the previous model, MOBILE6. This means that mobile emissions from previous

inventories are not comparable to current inventories. When comparing MOVES versus MOBILE6, NO_x emissions are up 20-40% due to trucks, VOC emissions are about the same, and PM_{2.5} emissions double.

In conclusion, for mobile emissions, the new MOVES model changes the mobile contribution to pollutants from other inventories. Except for SO₂, mobile emissions are an important part of all pollutant emissions. They are concentrated along highways and in cities. Mobile emissions are expected to drop dramatically between 2007 and 2020 because of cleaner cars.

Area emissions are an important contribution, ranging from 15-60% of all pollutant emissions. Except for SO₂, growing area sources represent an increasing proportion of emissions in future year inventories because Federal control programs do not address these emissions.

Kim Gaddy

Environmental Justice Coordinator
NJ Environmental Federation

Kim Gaddy's presentation was entitled, "The Effect of Small Area Sources and Trucks on a Neighborhood and the Use of Environmental Resource Inventories and Health Impact Assessments to Address the Problem". The city of Newark is an urban community, on which any given street is mixed use with industry, public housing, residential housing, and other kinds of businesses. This means there is a tremendous amount of small sources of pollution.

Frehlinghuysen Avenue is a main thoroughfare in Newark which abuts the airport. A two block area of this road alone has at least 25 emitting polluting facilities, including two recycling and solid waste factories, five auto collision and paint business establishments, and two truck-repair entities. The community monitored 200 trucks per hour in this location.

The community should be included to analyze what are the small sources, and to find them for the NJDEP's emissions inventory. As part of the solution, engage the residents and have them say what sources are there.

As environmental justice advocates, one thing the NJ Environmental Federation has been looking at is "green zones". This is an initiative that consists of creating solution-oriented partnerships within community-based organizations, involving many entities from federal to local agencies, where you coordinate a leveraged response to achieve positive change in low-income, overburdened urban communities. It gives the residents resources to address and fight the problems in their community.

When you add up the large sources of pollution in the community with small scale sources that don't always show up on the radar, the cumulative impacts are off the charts, and the community residents and business owners can't escape the amount of pollution that is being emitted. The community can help the NJDEP and the USEPA to better regulate. Two principles that are relevant here are that environmental justice demands that policy be based on mutual respect and justice for all people, with no bias, and that environmental justice demands the right to

participate as equal partners at every level of decision-making, including needs assessments, planning, implementation, enforcement, and evaluation.

The number one killer in the City of Newark is asthma, not crime and homicide. The reality is that all the combined sources of pollution are adding to the poor health of the individuals in the community. We want to make the communities healthy and sustainable. A community plan with an inventory assessment is needed as a potential solution to help with the community's economic and environmental sustainability.

Marina Castro
Environmental Engineer
USEPA Region 2

The topic of Marina Castro's presentation was "USEPA's Regulatory and Voluntary Programs for Mobile Sources". This presentation outlined the various regulatory and voluntary programs that the USEPA has in place to address mobile source emissions. It also touched on revised standards for wood heaters, a small area source, and it included recommendations that the NJDEP can undertake to further reduce transportation related air emissions.

The sources that the USEPA's standards apply to include everything from heavy-duty trucks and buses, to highway vehicles, to non-road machines and marine and ocean-going vessels. The 2008 inventory numbers for nitrogen oxide for New Jersey shows the biggest contributors were commercial marine vessels and on-road gasoline light-duty vehicles. For particulate matter, again commercial marine vessels and non-road diesel equipment account for over 50 percent of total emissions.

One of the ways that the USEPA addresses mobile source emissions is through transportation conformity, which is mandated by the Clean Air Act. Emissions from transportation programs, projects, and plans must be evaluated before they are implemented. Agencies involved include Metropolitan Planning Agencies, the NJDEP, and the NJDOT, and the public can also participate in transportation planning via public meetings and comments.

One set of standards phased in by USEPA for Model Year 2010 through 2012 apply to new non-road engines, equipment, and vessels. The engines covered by this rule account for roughly one fourth of total mobile source VOC and CO emissions. With new controls, VOC pollutants will be reduced by 34 percent for small spark-ignition engines (i.e., such as lawn and garden equipment) and by 70 percent for marine spark-ignition engines such as those used on outboard and personal watercraft.

The USEPA has also finalized the standards for greenhouse gas emissions and fuel efficiency. Transportation sources emitted 29 percent of all US greenhouse gas emissions in 2007. The benefits include fuel savings for the vehicle owners, as well as a reduction in the vicinity of about a quarter of a billion metric tons of greenhouse gases. For those that don't comply with the standards, the USEPA has a strong enforcement program on small engine imports.

The USEPA addresses the legacy fleet through voluntary programs and partnerships. These include the National Clean Diesel Campaign, which promotes clean air strategies by working with manufacturers, fleet owners, and air quality professionals to reduce diesel emissions from various sectors; funding for air quality programs, the NY/NJ Port Authority Clean Air Strategy, and the Northeast Clean Diesel Collaborative.

The USEPA has some recommendations for the State to continue the focus on reducing transportation and mobile source related emissions. The State should continue outreach, education, and enforcement of NJ's idling regulation, including for non-road diesel vehicles. It should also maintain its focus on diesel construction vehicle and equipment retrofits. Supplemental Environmental Projects (SEPs) are where alleged violators voluntarily agree to undertake an environmentally beneficial project related to the violation in exchange for mediation of the penalty to be paid. A lawn mower voucher program is such a project. Other SEPs in NJ include a locomotive repower, and municipal diesel vehicle retrofits and cleaner diesel fuel use in Camden.

Finally, wood combustion is a large contributor to particulate matter in this state. The standards were last updated in 1988, but are being revised and a proposal is expected this summer. The revised standards would strengthen emission limits to reflect today's best technology for new residential wood heaters, close loopholes, reduce exemptions, and update test methods.

John Spinello
Attorney
K&L Gates

John Spinello gave a presentation entitled "Emission Reduction Strategies for Construction Equipment". He testified on behalf of four organizations representing New Jersey's heavy, highway, marine, utility, and environmental remediation construction industry. More recently, attention has increasingly focused on smaller stationary and non-road mobile sources, including construction activity and equipment. The construction industry welcomes that attention and the opportunity to advance cost-effective and fiscally responsible strategies to improve air quality.

The construction industry has concerns with the accuracy of the non-road mobile source emission inventory, but believes there are still opportunities to reduce emissions from construction activity. Regarding the installation of retrofit devices, they support the concept behind the pilot program being implemented jointly by the NJDEP and the New Jersey Department of Transportation (NJDOT), which requires the installation of after-market controls on certain diesel construction equipment operated on several highway construction projects selected for the pilot. However, they strongly oppose the continuation or expansion beyond the pilot, because they believe it will be demonstrated that this approach is neither cost-effective nor fiscally responsible to pursue on a large scale.

An alternative they feel the State should pursue is tax incentives to accelerate fleet replacement. The replacement of older engines with new ones will yield more emission reductions for every state tax dollar spent than the reductions that would be achieved for every state tax dollar spent

to install and operate aftermarket control technologies. Tax incentives are also more efficient to administer than regulatory programs.

They also support sensible strategies to reduce the unnecessary operation of construction equipment that can reduce both fuel consumption and emissions from non-road diesel construction equipment. The development and enforcement of idle reduction policies tailored to construction equipment is needed, as the current idling rules apply mainly to vehicles traveling on roads and highways, whereas construction equipment is generally stationary.

Finally, they support a limited pilot program to evaluate the feasibility of opacity testing of non-road diesel construction equipment modeled on the existing program for on-road diesel vehicles. Excess opacity indicates inefficient combustion and the need for engine maintenance. The implementation of such a program could yield meaningful reductions at comparably much less significant cost than the installation of aftermarket controls on diesel engines.

Liz DeRuchie

Principal Planner, Environmental and Air Quality Analysis
New Jersey Transportation Planning Authority

Liz DeRuchie is with the New Jersey Transportation Planning Authority (NJTPA), and her presentation was on “Air Quality and Transportation in Northern/Central New Jersey”. The NJTPA oversees the investment of over two billion dollars of federal funds each year for transportation improvements. It creates a vision to meet the mobility needs of northern New Jersey, develops a plan for transportation improvement and management to fulfill the vision, and links transportation plans with economic growth, environmental protection, growth management, safety and security, and quality of life goals for the region.

Conformity is a process that ensures transportation investments will contribute to improving air quality in areas where concentrations of pollutants exceed national standards. It is required by the Clean Air Act, and is consistent with the State Implementation Plan (SIP). New Jersey is one such non-attainment area.

The USEPA sets the conformity process in motion. They set the National Ambient Air Quality Standards (NAAQS), and they designate non-attainment areas. States with non-attainment are required to develop a State Implementation Plan (SIP) with approved budgets for each criteria pollutant. Metropolitan Planning Organizations (MPOs) compare the emissions to the budgets to determine if the pollutants are within the budgets.

The mobile source pollutants included in the conformity determination are the ozone precursors: VOCs, NO_x, CO, and PM_{2.5}. The mobile sources considered are all on-road. Non-road mobile sources are not included in the transportation conformity exercise.

A regional transportation plan is developed and is updated every four years, while the Transportation Improvement Program (TIP) is revised annually. All projects included in both plans must be included in the conformity analysis. The conformity determination is done

annually to keep in step with the TIP. There are approximately 550 projects in the TIP each year.

A key element of the conformity process is the interagency consultation group. It includes representatives from the USEPA, the Federal Highway Administration, Federal Transit Administration, NJDEP, NJDOT, NJ Transit, and the neighboring metropolitan planning organizations. All projects are coded and entered into their own regional transportation model. Through post-processing, these are then entered into the USEPA emissions model, MOBILE 6.2 (MOVES starting next year).

Over the past 25 years, the USEPA has moved to much stricter budgets for all criteria pollutants. In addition, they have decreased significantly in the NJTPA region, despite increasing population and vehicle miles traveled. These reductions can be attributed mainly to improvements in technology, (i.e., cleaner engines). Each year, the NJTPA's conformity determination meets the required budgets for all criteria pollutants. Between 1988 and 2009, the number of annual high ozone days in New Jersey has decreased from 61 to 9.

The Transportation Clean Air Measures (TCAMs) Program is a study to identify projects that could improve the region's air quality and work being funded somewhere else. These projects are being funded through SEMAC, which is a federal funding source. Initially, 52 possible projects were identified. These were whittled down to 20 that were further evaluated, and finally, 9 for which action plans were developed. They are currently implementing 5 action plans to date.

The 9 action plans include idle reduction programs for auto, truck, and school buses, equipment retrofits and replacement for locomotives and also construction equipment, transient VMT reduction, and traffic signal coordination. The first project was partnering with New Jersey Transit, in which they helped them develop a prototype and implement automatic electric start stop units on thirty-three PL42 locomotives. The second effort was with the Port Authority of New Jersey and New York and that was the GenSet retrofit.

In regard to the New Jersey Clean Construction Program, they are working with NJDOT and NJDEP on funding retrofits of catalytic converters and diesel particulate filters on off-road construction vehicles in densely populated urban areas.

Nick Nigro
Solutions Fellow
Center for Climate and Energy Solutions (C2ES)

A major initiative of C2ES is to accelerate Plug-In Electric Vehicle (PEV) deployment nationwide. New Jersey has the highest population density of any state. As the state's population grows and space becomes scarce, it's important to continue to lower the impact of energy production and consumption on public health. Strengthening vehicle fuel economy standards and pollution controls of power plants are important steps, but New Jersey could also take steps to enable zero emission technology to compete fairly in the marketplace. The success of one such technology, PEVs, depends on action at the state and local levels.

PEVs are vehicles that can be powered by batteries recharged by our electrical grid. Some PEVs are battery only, whereas others can run on either the traditional internal combustion engine or the battery.

These vehicles present a rare opportunity to address four major issues facing New Jersey and our country today: energy security, local air quality, global climate change, and economic growth. According to the Oak Ridge National Laboratory, the United States has lost \$5 trillion in economic productivity since 1970 because of price shocks and the exercise of monopoly power. That's one third of our national debt.

Electricity, unlike petroleum, is a wholly domestic energy resource and historically has not been susceptible to price shocks. In fact, electricity prices are lower in real terms today than they were in the early 1960s. When powered by electricity, PEVs emit no harmful pollutants from the tailpipe. While electricity production often emits air pollution, research by the Electric Power Research Institute reveals that on balance, a shift to PEVs would decrease air pollution, with the decrease in tailpipe emissions outweighing the increase in air pollution from power plants. This assessment holds true in states across the country, including New Jersey.

Finally, advanced vehicles, like PEVs, rely on innovative new technologies to make them so efficient. Being a leader in the development of these technologies should be a national goal, in order to continue to create well-paying manufacturing jobs throughout the United States.

Although they are very cheap to operate, their upfront costs are very high and the technology powering them remains largely unfamiliar to most consumers. The system is not set up to take advantage of the benefits that these vehicles offer today. For example, the existing regulatory framework is not set up to accommodate recharging of these vehicles.

Our best hope for breaking down the barriers and demonstrating the value proposition of PEVs is to let businesses innovate. C2ES recently released a plan with options to give PEVs a fair chance in the auto market nationwide. It focuses on the critical cross-cutting issues of charging infrastructure, the regulatory environment, and consumer awareness, and lays out the steps necessary to create a consistent regulatory environment for PEV charging. Actions at the state level include allowing consumers to pay electricity rates that reflect the lower cost of charging at night, allocating costs among electricity users, and making sure that companies who provide charging solutions for consumers be allowed to provide their service in an electricity market without being regulated like a utility.

William E. Wells
Natural Gas Vehicle Consultant
NJ Natural Gas

New Jersey Natural Gas is one of four natural gas distribution companies in New Jersey. They have energy-efficiency programs which promote rebates for energy-efficient equipment, and they are committed to advancing natural gas vehicles within the state.

The current administration in New Jersey has shown clear support for compressed natural gas (CNG) for economic and environmental reasons, and the advantages of transitioning certain areas of transportation to this fuel. They are committed to change by promoting the infrastructure needed throughout the State to induce heavy vehicle class conversion from expensive and polluting diesel fuel to less costly and clean CNG.

New Jersey should evaluate what infrastructure changes regarding slow and fast fill stations, fleet availability and maintenance, and labor are required to retrofit existing vehicles in order to accelerate the substitution of natural gas use for oil. In addition to lessening New Jersey's reliance on oil, the conversion of fleet vehicles that haul freight has the potential to serve well New Jersey's environmental objectives, as tailpipe emissions from CNG do not include oxygenated hydrocarbons associated with diesel fuel.

Natural gas is plentiful in this country, and the use of natural gas does not contribute significantly to smog formation, as it emits low levels of nitrogen oxides, and virtually no particulate matter. The main sources of nitrogen oxides are electric utilities, motor vehicles, and industrial plants. The increased use of natural gas in those three sectors could substantially make an impact on smog, ground level ozone, and other contaminants, particularly in the summer months, and around urban centers.

According to the USEPA, compared to traditional vehicles, CNG vehicles have reductions in CO emissions of 90-97%, carbon dioxide emissions of 25%, and nitrogen oxide emissions of 35-60%. NJNG has two state of the art refueling stations in New Jersey, and is adopting a policy where they're going to replace their vehicles and fleet with dedicated natural gas vehicles. Some of the markets that make ideal candidates for CNG include transit, refuse trucks, transit buses, school buses, and construction vehicles.

The use of natural gas has economic, environmental, and energy security benefits. Economically, it has a lower delivered fuel price, is competitive to petroleum fuels (right now it is about 50 percent of the cost), and the American dollar stays in this country. It is a domestic fuel, which means energy independence. In addition, it has lower tailpipe emissions.

Some of NGV's customers include New Jersey Transit and Blue Diamond Disposal. Other fleets in New Jersey include Atlantic City jitneys and Waste Management refuse trucks in Camden. The New Jersey Clean Cities Coalition is also a big advocate of natural gas. NJNG has a regulatory initiative called Fostering Environmental and Economic Development (FEED). It offers capital and other benefits to new and existing NGV customers interested in making CNG/NGV-related investments and improvements, or to support their efforts to negotiate long-term natural gas supply and pricing through non-traditional, customized negotiated agreements with NJNG. In addition, the recently released New Jersey Energy Master Plan (EMP) contains multiple references to natural gas vehicles as an environmental and energy security strategy for New Jersey.

Molly Greenberg
Environmental Programs Assistant
Ironbound Community Corporation

Environmental Justice communities throughout New Jersey face a multitude of air quality issues from large stationary sources and mobile sources, as well as small area sources. In the Ironbound community of Newark, NJ, residents face the daunting prospect of tackling the cumulative impacts of a concentration not just of large stationary facilities, but also a disproportionate concentration of both transportation-related and small area sources such as diesel trucks, cargo handling and airport related equipment, ships, railroads, and wastewater treatment plants. With the presence of the nation's third largest seaport in our backyards, our communities must tackle the very real impacts of the goods movement industry.

For the past 4 years the Ironbound Community Corporation (ICC) has collaborated with the Healthy Ports Coalition to conduct annual truck counts, which demonstrate the chronic problem of diesel truck idling and heavy truck traffic through residential areas of the neighborhood. Additionally, snapshot air monitoring and a USEPA funded STAR research grant are providing valuable data about the localized impacts of diesel emissions on particularly vulnerable residents such as asthmatic children. With the anticipated doubling of container volume expected with port expansion plans currently under way and ineffective clean air strategies implemented to date, the potential impact to local communities will be further exacerbated.

With the upcoming Port expansion, serious concerns arise if we do not develop more effective and accountable measures to tackle the already significant levels of mobile emissions relating to the goods movement in the area. The ICC continues to advocate for an aggressive, mandatory approach to curbing diesel emissions from port trucking and cargo handling equipment that includes comprehensive fleet upgrade of port trucks, mandatory targets for upgrading Cargo Handling Equipment, a system of RFID tags to track the number of truck trips through the ports in real time, the development of a local electrified truck stop, and a series of local anti-idling and truck routing enforcement strategies to protect local communities to the greatest extent possible.

In addition, ground monitoring of port and port-adjacent air quality, specifically for diesel and PM levels, should be implemented so we can get real baseline data and ways to measure these strategies and their effectiveness.

Ray Albrecht
Technical Representative - Northeast US Region
National Biodiesel Board (NBB)

This presentation described the environmental benefits of biodiesel relating to improved air quality. Biodiesel is a renewable liquid fuel made from recycled vegetable oil or oilseed feedstock, and can be easily mixed with traditional diesel fuel and heating oil to achieve cleaner combustion. It can be used with little or no equipment modification.

Biodiesel has about 10 to 12 percent oxygen content, so it serves as an oxygenated fuel, which is very good at reducing particulate emissions from the exhaust. It also has very low sulfur and

nitrogen contents. Modern diesel engines meet strict environmental standards and new diesel and CNG engines now achieve equally clean environmental performance.

For vehicle retrofit applications, going from conventional diesel fuel to a biodiesel mixture can decrease particulate matter by 25%. When you add a particulate filter trap, the reduction in particulate matter between the two fuels jumps to 67%.

Comprehensive laboratory and field testing of biodiesel for residential and commercial heating has been conducted over the past 15 years. Biodiesel is offered by heating oil dealers in concentrations ranging from B2 to B20. If you go with new equipment with burners that are specified for using straight biodiesel, you can go all the way up to B100. Biodiesel is available at an increasing number of heating oil terminals.

PM_{2.5} concentrations in the atmosphere across the US are particularly high in the northeast and mid-atlantic states. They are the hot spots for pollutions, which is why it is so important that we make progress. Biodiesel is an oxygenated fuel, which can be a major part of the solution to our environmental problems.

Biodiesel can also be used with No. 6 heating oil, which is heavy oil or residual oil. The biodiesel allows for better air and fuel mixing, cleaner combustion, and lower maintenance costs. One of the benefits of biodiesel besides the direct chemistry improvements to the fuel and combustion is that it helps to keep your equipment cleaner.

Biodiesel can be made from a lot of different feedstocks. This diversity means sustainability, as it utilizes existing wastes and improves market value for underutilized and undervalued coproducts. There are also huge potential sources for the future, including algae and pennycress. In addition, biodiesel is water wise. It is non-toxic and biodegradable, and reduces wastewater by 78% and hazardous waste by 96% compared to petroleum.

The NBB has several recommendations for the use of biodiesel in the fields of transportation, buildings, and industrial process, power generation, and marine applications. These include:

- Adopt ASTM Standard 6751 for biodiesel fuel quality, to enable State of New Jersey agencies to enforce fuel quality standards that protect diesel fuel users and build confidence for increased utilization.
- Support efforts by the NJ Department of Transportation to revise State bidding and procurement procedures for biodiesel, including the use of updated pricing formulas to enable State and local government motor vehicle fleets to take greater advantage of biodiesel without incurring fuel cost increases.
- Adopt ASTM Standard 6751 for biodiesel fuel quality, to enable State of New Jersey agencies to enforce fuel quality standards that protect heating oil users and build confidence for increased utilization.

- Support adoption of bioheat mandate for residential, commercial and industrial buildings to encourage development of alternate fuel distribution infrastructure in the oil heat market and establish reasonable minimum usage levels.
- Support efforts to use bioheat in State buildings.
- Conduct outreach and education to the business community to encourage the use of biodiesel blends for No. 6 Residual Oil-fired Systems in Industrial Process, Power Generation and Marine Applications.

Joann Held
 President
 Air Toxics Analysis Services

Joann Held's presentation was on "Identifying Area Sources of Air Toxics in Urban Areas". There is a special concern for urban areas where numerous small sources can add up to significant air toxics exposures for the residents of some neighborhoods. Identifying these sources may not be possible using traditional emission inventory techniques because their emissions are below the thresholds that trigger reporting on permits. Even if the emissions of particulate and volatile organics are above significant thresholds, the air toxic components are often too small to be specified. New methods such as windshield surveys to identify neighborhood sources and mining the data submitted in the Community Right-to-Know Release and Pollution Prevention Reports (RPPR) may be necessary to prepare even a rudimentary inventory in these cases.

Furthermore, traditional methods of air quality management may not be effective in reducing exposure to these pollutants. More effective methods may be found by collaborating with other state and local programs, such as those that encourage energy efficiency and outreach efforts to improve indoor air quality. Traffic management programs can be helpful in reducing diesel engine emissions in these neighborhoods. In addition, the DEP should consider extending the use of Particulate Management plans since many of the emissions in these neighborhoods are various forms of particulate.

The following recommendations are given concerning the identification of area sources and quantifying emissions:

- Conduct Windshield Surveys with the assistance of community representatives to help identify more thoroughly the sources of air emissions in a given neighborhood.
- Find ways to incorporate Community Right-to-Know Release and Pollution Prevention Reports (RPPR) into inventory databases.
- Use Emission Factors to speciate more of the Particulate and VOC Emissions on permit applications, rather than settle for emission rates for the whole group of pollutants.

- Coordinate with the Pesticides Control Program to identify areas where commercial fumigation of food products (such as cocoa beans) and other imported items is taking place
- Revise the Permit Reporting Thresholds in Subchapters 8 and 22 so that more significant emission sources are captured in permit applications.
- Upon renewal of permits that are at least 10 years old, require submission of up-to-date MSDS sheets.
- Upon renewal of permits that are not yet available electronically, require an electronic submittal of permit allowable emission rates.

In addition, the following recommendations are given concerning risk reduction strategies:

- Take advantage of Energy Efficiency Programs which could help to replace old residential furnaces in densely populated areas.
- Develop programs to promote Indoor Air Quality Improvements strategies, such as solvent free cleaning products, which will have the side benefit of reducing VOC emissions
- Evaluate the primary contributors to heavy congestion, such as ports, and identify ways to relieve that congestion and also to reduce idling. Consider ways to provide a buffer between commercial traffic and residential areas.
- Extend requirements for Dust Management Plans to more operations that have outdoor activities adjacent to residential areas. Scrap management facilities are particularly good candidates for this.
- Develop Best Management Practices for Fumigation activities and include them in permits for Pesticide use.

Charles Bryant
Executive Director
Alliance of Automotive Service Providers

The Alliance of Automotive Service Providers of New Jersey (AASP/NJ) has worked hard for years to protect the public from the potential harm that could result to the public from their industry. They have encouraged and assisted their members to comply with and even exceed the provisions of the existing laws, rules and regulations and even been instrumental in strengthening the clean air provisions in their own licensing law.

In 2001, AASP/NJ pushed for and got a regulation change to the existing NJ Auto Body License requirements to require equipment, training and certification standards. Among other provisions, the new rules included and reinforced the following that would help improve air quality:

Possess, maintain and utilize for all spray painting:

- (a) an enclosed area for refinishing which complies with all applicable safety, fire, environmental and other regulations;
- (b) the means to supply fresh air to workers within the spray area when using materials that require breathable air to be supplied; and
- (c) a filtration method to reduce particles from the air exhausted from the spray area which is established in accordance with standards established by the State or federal government.

They also had many unlicensed shops at the time, so they increased their fines. At that time, more and more shops started to become licensed and it became a more professional industry. They felt this was very important, as they do work with paint that is very toxic and they wanted to ensure it was handled properly and didn't cause harm to people.

In 2004, AASP/NJ fought an attempt to exclude mobile auto body & painting operations from the licensing requirement. A major mobile auto body and painting entity attempted to change the definition of "Auto Body Repair Facility" in order to allow a mobile repair operation to repair and paint damaged vehicles from a van at any location they chose to operate, unlike the traditional auto body shop that had to be licensed and have a building located in an area that was zoned for auto body repairs, have a paint booth or room inside the building with an exhaust fan and filters, have and wear a fresh air mask to bring fresh air directly to the painter inside the booth when painting, as well as meet all other City, County and State requirements. With the assistance of AASP/NJ this effort was defeated at that time.

In 2009, a second attempt was made to exclude mobile auto body operations from the licensing provision. This time the NJMVC issued a bulletin stating that the current NJ Auto Body License Law does not encompass mobile auto body operations. The AASP/NJ strongly disagrees with this statement. As such, AASP/NJ recommends that the NJDEP work with the NJMVC to recognize the importance of auto body repairs and painting being performed inside a building located in an area that is zoned for auto body repairs, that has the appropriate paint booth or room, and is equipped with a fresh air apparatus to bring fresh air directly into the booth to the painter, as created and mandated in the legislation that created the current auto body license law.

In 2010, the EPA rule "Subpart HHHHHH- National Emissions Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources (Rule 6H)" was implemented. This new Federal Rule requires that all automotive spray painting be conducted in a paint booth. However, the rule contains an exemption if the painter was using a paint gun with a 3 ounce cup or less. In other words, the exemption would allow mobile shops to paint vehicles outside in the open air.

The AASP/NJ recommends that this rule needs to be further clarified to make it crystal clear that a Mobile Operation repairing and painting vehicles outside in the open air cannot make repairs that would require more than 3 ounces of mixed material. Presently, mobile operations are

manipulating this provision by refilling the cup numerous times, thereby skirting the law and performing traditional auto body repairs and painting right out in the open air.

In addition, AASP/NJ has joined the New Jersey Green Automotive Repair Program (NJ-GARP). Prior to the AASP/NJ's involvement, the NJ-GARP only certified mechanical shops and dealerships that were implementing environmentally-friendly business practices. Now, auto body shops that implement environmentally-friendly business practices can also become certified as "green" businesses". AASP/NJ is very proud to have joined with the other organizations in NJGARP as a partner in promoting environmentally-sound business practices within the body repair industry.

Joe Cole
Body Shop Services
Till Paint Company

Joe Cole's presentation was on "Air Pollution Reductions from Paints & Coatings". Till Paint Company is an automotive paint supply company along with wood refinish suppliers in Southern New Jersey. This presentation covered the positive conversions to lower VOC-containing automotive coatings, especially water-borne products, by body shops. These new products have VOC's in the low 2 lbs. per gallon, as opposed to solvent systems with some products in the 6 lbs. per gallon range.

The costs to convert to waterborne coatings are not drastic. It would yield a significant 40 to 50 percent reduction in VOCs, which has nothing to do with transfer efficiency. It is actually the pounds of VOC in a can. About 25 percent of shops have already converted to waterborne coatings voluntarily, to keep the environment clean and healthy for their workers.

Delaware has new statutes in place, and Pennsylvania is scheduled for January of 2013. New Jersey has not yet established the new statute implementation date. The new lower VOC products have been very successful and for most shops, do not require costly additional equipment. Till Paint Company encourages shops to voluntarily convert now, and asks that New Jersey change to the lower VOC statute as soon as possible.

Chris Sturm
Senior Director, State Policy
NJ Future

This presentation was on "Transportation and Land Use Strategies to Achieve Healthier Air Quality". To meet our goals for reducing greenhouse gases, small but powerful changes are needed in how we build our communities and in our transportation choices so that, on average, New Jersey residents don't need to drive as much. The amount we drive, measured in Vehicle Miles Traveled, or VMT, is one of three key factors in transportation emissions. Shorter trips and greater use of other transportation modes, like walking, biking and taking transit, will lead to reductions in VMT. Research has shown that we can get there by improving land use factors called the five "D"s:

- Density
- Diversity of uses
- Design (connectivity of the street network)
- Distance to transit
- Destination accessibility

Population density makes a difference. Residents in compact areas drive less, thanks to good transportation alternatives. Diversity, or mixed use, entails putting home, work, shopping, and school near each other. Design of the street networks means that when we have a traditional grid system, the distance between two points is much shorter than if we have single-use subdivisions that are only accessible off of arterial roads. Distance to transit is also important. Finally, destination accessibility is how far away are your destinations, and this tends to be better in more central locations than a disperse one.

New Jersey already has several initiatives which, if implemented, will move us in the right direction. The Legislature has required two Global Warming Response Act (GWRA) Recommendations Reports -- for 2020 and 2050. The 2020 report includes a thoughtful set of actions for better land use and transportation, which should be implemented. The 2050 report is due out this spring and will represent the Christie administration's direction. This report should be actionable, build on the 2020 report, and incorporate the work of the Transportation and Climate Initiative, a multi-state effort of which NJ is a member. Finally, the State Strategic Plan lays out a vision for the state's economic and physical development which also calls for better land use and transportation outcomes. Importantly, the administration is requiring all of the state agencies to explain, in special "agency strategic plans," what they will contribute to the effort. If done right, these agency plans will improve land use outcomes.

Some specific recommendations include to double transit ridership by 2050, incorporate GHG targets into transportation spending, and assess infrastructure needs in transit hubs. In addition, we need to help municipalities by offering incentives & standards for better zoning, improving planning tools, and continuing to support the Sustainable Jersey Program.

By focusing on the opportunities offered by the GWRA reports and the State Strategic Plan, the Clean Air Council can help ensure New Jersey shapes its communities and transportation options so our air is cleaner.

Randy Solomon

Co-Director, Institute for Sustainability Planning & Governance
The College of New Jersey/Sustainable Jersey

Sustainable Jersey is a certification program for municipalities in New Jersey. It identifies actions to implement to help towns become more sustainable, provides tools, resources, and guidance to enable communities to make progress, and provides access to grants and funding for municipalities that are working toward certification.

Some of Sustainable Jersey's strategies relating to air quality are in the categories of operations management, land use, community outreach and education, and environmental justice. In terms

of operations and management, municipalities maintain large vehicle fleets and they put a lot of trucks out on the street. Sustainable Jersey created a spreadsheet that gives municipalities the capacity to track and manage the efficiency and the emissions from their fleets. They are purchasing clean and green vehicles, the right size of vehicles, downsizing vehicles, and identifying where they can accomplish tasks without vehicles. They are training staff not to idle and to drive more efficiently. In addition, they are implementing environmental purchasing policies that Sustainable Jersey has developed, so that they are buying low- or no-VOC cleaning supplies and paint, and they are buying better equipment.

The biggest things that are being done in land use are the development of a bicycle and pedestrian plan and implementation strategy, along with a complete streets policy, which compliments bicycle/pedestrian planning and enables you to provide alternate modes of getting around. A lot of work being done within Sustainable Jersey gives the municipalities the resources to actually plan for sustainable land use at the local level, understand what that means, and implement it to integrate with their master planning and zoning.

Community education and outreach is the third category. Communities are the level of government closest to the people. That is their strength, and they have been effective in reaching out to businesses, homeowners, and institutions to do things like backyard composting, anti-idling enforcement campaigns, and things like the Smart Workplaces Program, which incentivizes businesses to come up with telecommuting and carpooling strategies.

The fourth category is dealing with equity and environmental justice. There are a number of actions that municipalities can implement, and guidance and materials they can follow. One is dealing with environmental justice in planning and zoning, and the second is dealing with cumulative risk assessment. Sustainable Jersey guides municipalities through a process of thinking through what the implications of different land use and zoning decisions are, and citing decisions on air quality and on vulnerable populations.

Jeff Tittel
Sierra Club
Public Speaker

There is a connection between financial policy and transportation policy: when there is an increase in transit costs, there is a decrease in ridership, and when there is an increase in tolls, there is a decrease in highway use. We need to be expanding our mass transit. We also need to get trucks off the road by expanding freight rail and cross harbor freight. We need to route trucks in urban areas away from schools, housing, and daycare centers, and put them in areas where they will have a little less of an impact.

Cleaner vehicles are needed. There are going to be 20 car models of electric plug-ins coming online in the next two to three year, and we will need a plug-in system for these electric vehicles. In addition we do not have a CNG system for alternative fuel vehicles. CNG works really well for trucks and fleets so a fueling system is necessary moving to the future.

Another big issue is trip reduction. There should be more carpooling, as well as a system of incentives. Several approaches could include incentives to large employers, cash out parking where we give companies density bonuses to have less parking in exchange for getting increased density and use some of those resources for trip reduction programs, and an off-peak reduction in costs, such as that afforded by more flexible work times.

We need to use cleaner diesel in our ports, and in the trucking in the state, and we need to move forward encouraging electric vehicles. When we look at ports with confined areas, electric makes sense like it does for fleets.

In regard to small area sources of pollution, we are starting to see more from log furnaces because they are not regulated. This feeds into the biomass problem. People are trying to save money and are having furnaces running off of trees. To run a power plant off of biomass from trees, it will take a hundred years of forest growth to replace the carbon that was emitted. There are good types of biomass from waste, but bad biomass when you start cutting down forests.

V. LIST OF ACRONYMS

AFV	-	Alternative Fuel Vehicle
AASP	-	Alliance of Automotive Service Providers
ASTM	-	American Society for Testing and Materials
BPU	-	Board of Public Utilities
CAC	-	Clean Air Council
CEHA	-	County Environmental Health Agency
CNG	-	Compressed Natural Gas
CO	-	Carbon Monoxide
DEC	-	(NY State) Department of Environmental Conservation
DEP	-	(NJ) Department of Environmental Protection
DHSS	-	(NJ) Department of Health and Senior Services
DOE	-	Department of Energy
DOT	-	(NJ) Department of Transportation
EMP	-	Energy Master Plan
EV	-	Electric Vehicle
GARP	-	Green Automobile Repair Program
GHG	-	Green House Gases
GWRA	-	Global Warming Response Act
HAP	-	Hazardous Air Pollutants
ICC	-	Ironbound Community Corporation
LNG	-	Liquefied Natural Gas
MARAMA	-	Mid-Atlantic Region Air Management Association

MOVES	-	Motor Vehicle Emission Simulator
MPO	-	Metropolitan Planning Organization
MSDS	-	Material Safety Data Sheet
MVC	-	Motor Vehicle Commission
NAAQS	-	National Ambient Air Quality Standards
NGV	-	Natural Gas Vehicle
NJT	-	New Jersey Transit
NJTPA	-	New Jersey Transportation Planning Authority
NO _x	-	Nitrogen Oxides
PATH	-	Port Authority Trans-Hudson
PEV	-	Plug-in Electric Vehicle
PM	-	Particulate Matter
PM _{2.5}	-	Particulate Matter 2.5 micrometers in size
ppb	-	Parts per Billion
RFID	-	Radio Frequency Identification
RPPR	-	(Right-to-Know) Release and Pollution Prevention Reports
SEMAC	-	Science, Engineering and Mathematics Advancement Consortium
SEP	-	Supplemental Environmental Project
SIP	-	State Implementation Plan
SO ₂	-	Sulfur Dioxide
STAR	-	Science to Achieve Results
TCAM	-	Transportation Clean Air Measures
TIP	-	Transportation Improvement Program

USEPA	-	United States Environmental Protection Agency
VMT	-	Vehicle Miles Traveled
VOC	-	Volatile Organic Compound
ZEV	-	Zero Emission Vehicles

VI. HISTORY OF THE CLEAN AIR COUNCIL

- 2011 The Cumulative Health Impacts of Toxic Air Pollutants on Sensitive subpopulations and the General Public
- 2010 Vision for the Next Decade: Air Quality and Pollution Control in New Jersey
- 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

