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**IMPACT ON THE PUBLIC
OF THE NEW CLEAN AIR ACT REQUIREMENT**

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Being a Report of
the New Jersey Clean Air Council¹
Containing Testimony
Presented at the Council's Public Hearing
April 21, 1992
New Brunswick, NJ

SCOPE

The 1992 public hearing sought information and recommendations concerning how the 1990 Clean Air Act Amendments (CAAA) will affect New Jersey citizens and their use of the private car and public transit. Topics included the individual's work trip, new car standards, car inspection, and reformulated gasolines and alternate fuels, as well as current problems and future plans for public transit. The Clean Air Council (CAC) believes citizens need to understand how new requirements will affect them personally, in terms of both cost and life style. The Council asked testifiers to explore the following questions:

1. How can the public help solve air pollution problems in New Jersey? What will the public be required to do?
2. What are the possible impacts -- of having to get your car inspected under the new proposed more extensive vehicle inspection procedures? Of having to buy the California Car? Of having to use reformulated fuels? Of driving an old car?
3. How can you change your driving habits to reduce air pollution? What will you be required to do?
4. What are state and public transportation agencies doing?
5. What are the expected benefits of improving air quality? What are the costs?

¹ The Clean Air Council was formed under the authority of the New Jersey Clean Air Act of 1954; its members are appointed by the governor; its business is to study and make recommendations to the Department of Environmental Protection and Energy concerning the implementation of federal and state legislation and regulation dealing with air quality and to advise the commissioner of DEPE on air matters.

RECOMMENDATIONS

General Recommendations

- NJ's overall plan for meeting the CAAA requirements should be designed as a cooperative effort by government, private industry, and the public.
- When developing the State's Implementation Plan, DEPE should select strategies that are cost-effective and that have high benefit-cost ratios; however DEPE should also ensure that the menu of selected strategies spreads cost burdens among various affected groups.
- Selected strategies should be coordinated regionally to avoid competitive disadvantages that may arise from certain air quality policies or programs.
- DEPE should undertake a comprehensive review and revision of state regulations and policies that tend to impede implementation of strategies aimed at complying with CAAA, including: (1) the 1981 Ride-Share Act, which discourages employer operated car-pooling and van-pooling programs, (2) labor laws that work against flex-time, (3) NJ Transit's mission statement and policies, which can give low priority to competing with private cars in terms of speed and convenience and which can hinder transit innovation and change, (4) safety regulations for gasoline fueled vehicles that are not relevant for vehicles fueled with natural gas, and (5) highway engineering standards that impede construction or designation of bikeways or that hinder pedestrian access.

Public Education

- The Council recommends the development of a comprehensive, unified, statewide public education program aimed at increasing citizens' understanding of the relationship between air pollution and the use of the individual automobile. Public education should have a separate budget line in any clean air program. The education program may include activities such as development of a special school curriculum, local and county grants to promote alternatives to the use of single occupant cars, an advertising campaign linking car use with dirty air, planning board training sessions regarding ways to make land use decisions more transit friendly, and a recognition process for communities that achieve traffic demand goals. The effort might be modeled on NJ's successful education program promoting recycling.

Vehicle Inspection and Maintenance

- The Council recommends expediting without delay the adoption of enhanced I & M in New Jersey in accordance with provisions in the Clean Air Act. The Council also urges the State

to proceed with its plans for privatization and centralization of inspection stations.

Reducing Automobile Use

● Strategies to increase vehicle occupancy rates should be broadened from the current narrow focus on just work-related trips. Traffic demand management requirements for plans to reduce the use of single occupant vehicles should be applied to all activities and establishments that generate large numbers of vehicle trips, including schools, universities, shopping malls, stadiums, and other recreational and social facilities.

● DEPE should urge DOT to take a comprehensive and coordinated approach to creation of incentives aimed at encouraging transit ridership and car/van pools; the goal should be to shift the cost/convenience equation away from the single-occupant vehicle. For example, parkway tolls for single-occupant vehicles could be raised at the same time as transit fares are lowered and free park-ride lots are expanded. Commuters could be given fare subsidies for their work trip at the same time as single occupant vehicle drivers lose the benefit of free parking at work. Van and car pools could park close to the door while those who drive alone have to park far away.

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vehicles for natural gas fuel could be encouraged by placing a 5-year moratorium on the state's collection of vehicle fuel taxes for natural gas users.

Scrapping Old Cars

- DEPE should establish programs in both the private and public sectors for scrapping of old, high emitting vehicles (pre-1981). One such program should allow companies to buy and scrap high emitting vehicles to offset new emissions.

Transit and Other Non-automobile Transportation Alternatives

- The Council recommends that the State increase the proportion of its transportation budget that it spends on transit, pedestrian walks, and bikeways.

- The Council recommends that NJ Transit give increased attention to the needs of intra-state commuters, particularly to those traveling outside urban centers. The Council supports re-examining the franchise policy so that intra-state passengers can ride on inter-state transport.

- DEPE and DOT should develop a coordinated program to encourage local groups to designate safe bikeways and provide bike lockers at parking garages, park-ride lots, and shopping areas.

Land Use

- The Council recommends that DEPE work with appropriate agencies to develop guidelines and alternative land use models to enable local planning boards to understand the relation between site design standards and transit use. State government should create, and/or fund, planning board training that encourages smaller parking lots, shorter setbacks, mixed use, denser development at transit centers, pedestrian friendly designs, and increased bike convenience and safety.

BACKGROUND

On November 17, 1990, The Clean Air Act reauthorization and amendments (CAAA) were signed into law by President Bush, after nearly a decade of debate. The CAAA contains four main titles:

Title I: Ambient Air Quality (smog)

Title II: Motor Vehicles

Title III: Air Toxics

Title IV: Acid Rain.

In this public hearing, the NJ Clean Air Council asked for testimony focusing on how the implementation of Titles I and II will affect the lives of New Jersey citizens.

The production, effects, and control of ground level ozone² has been an on-going interest of the Council. In 1987, the CAC public hearing considered the health effects of ozone pollution; in 1990, the topic was NJ's emissions inspection program for motor vehicles; and in 1991 the Council took testimony on the effectiveness of the NJ's system for notifying the public about episodes of unhealthy air, the most common such episode being summertime smog. Interested members of the public are encouraged to obtain copies of these hearing summaries from DEPE, Office of Air Quality Management in the Division of Policy and Planning.

Ground-level ozone and carbon monoxide are persistent problems in New Jersey. All of the state currently fails to meet the federal standard for ozone; 18 of the state's 21 counties are classed as having a "severe" compliance problem. According to DEPE, natural sources such as vegetation account for about 30 percent of the ozone-producing emissions; the other 70 percent comes from humanly controllable sources. Motor vehicle exhaust accounts for half the air pollution from these controllable sources, and off-road sources such as farm tractors, lawn mowers, and recreational vehicles account for another 10 percent of controllable

² Ozone is a gas formed when volatile organic compounds (VOCs) -- including those sometimes referred to as hydrocarbons (HCs) -- and nitrogen oxides (NO_x) react in the atmosphere in the presence of sunlight. Ozone is a respiratory irritant that affects lung function in both healthy and not so healthy people. Because of the role of sunshine in ozone production, ozone (a major component of photochemical smog) is a seasonal pollutant. In NJ it typically occurs between May and November. The Clean Air Act of 1977 set 1982 as the deadline for states to attain the federal ozone standard (0.12 parts per million), but clean air has proven difficult to achieve in urbanized areas, because of its relation to motor vehicles and because smog tends to blanket large areas and to be blown on the wind away from where the precursor chemicals entered the atmosphere, a phenomenon known as "air transport." (For more information see American Lung Association of NJ. 1988. *Air Pollution in New Jersey*. Second Edition, rev.)

emissions (or about 5 percent of total emissions). The rest of the pollution (about 30 percent of the total) comes from industrial and other "stationary" sources. In 1990, NJ sources emitted approximated 1600 tons per day of volatile organic compounds (VOCs), a major precursor of ground-level ozone.

Unlike ground-level ozone, carbon monoxide is a localized winter problem. Ninety-one percent of CO pollution comes from motor vehicle exhaust, and CO "hot spots" regularly occur where traffic congestion is worst. In 1990 New Jerseyans emitted 4,414 tons per day of CO.

The CAAA gives New Jersey until 2007 to meet the federal ozone standard, and until 1995 to meet the CO standard. The penalty for not achieving the standard includes loss of federal highway and transportation funding. In addition, because much of NJ is classified as "severe non-attainment," the penalty for failure may include higher emissions fees for industries, stricter reviews of air emission permits for new factories, various mandated emission reductions on all pollution sources, and percentage reductions in the number of miles residents drive their private vehicles.

To meet the federal standard for ozone, NJ will need to reduce VOC emissions by 42 percent, with a 15 percent reduction by 1996. The CAAA mandates certain actions for states to take to achieve this kind of reduction. NJ has already put many of these mandates in place, particularly those that yield the largest reductions of VOC emissions. For example, NJ already requires gasoline stations to collect gas vapors with special hose nozzles, and the state requires oil companies to collect gas vapors during barge transfers of gasoline. New Jersey also requires industries to use "Reasonably Available Control Technology" (RACT) to control smoke stack emissions. In addition, the CAAA calls for cleaner cars (although the President's Council on Competitiveness has refused to allow EPA to promulgate these rules), cleaner fuels, and RACT on smaller factories; it also requires employers of more than 100 people to reduce the number of workers who commute alone by car.

DEPE claims that even after it implements all mandated actions, the state will still need to find ways to cut VOC emissions by about 180 tons per day. Optional schemes for doing this include adoption of the so-called California car (a low emission car designed to meet stricter than federal standards), reducing the number of miles people drive their cars everyday, programs to encourage people to scrap old polluting cars in favor of newer cleaner ones, stricter industrial controls, and energy conservation. DEPE is required by the CAAA to have its plan for meeting the air quality standards in place by November 1992. DEPE's list of options and estimated pollution reductions may be found in the appendix of this report.

It has been argued that even if New Jersey were to reduce in-state VOC emissions to zero, citizens would still experience occasional smoggy days (i.e. high ozone days) because of pollutants transported to New Jersey from Pennsylvania, Maryland, Virginia, and other states to the west and southwest. The CAAA addresses this need for regional solutions by allowing the boundaries of non-attainment areas to cross state lines, provided the affected governors agree to cooperate in their reduction programs. This new provision provided for the formation of the Northeast Ozone Transport Commission, of which New Jersey is a member.

Finally, New Jersey's air pollution problem is complicated by the state's past development patterns. Much of the state's traditional fixed-route transit has focussed on

getting people in and out of New York and Philadelphia. Recent economic development has shifted a large number of jobs out of these older urban centers to new "Edge Cities" and suburban campuses. This pattern, coupled with the many sprawling residential suburban areas, has made it difficult to operate traditional fixed-route mass transit efficiently. A creative variety of will need to be developed.

TESTIMONY

Scott Weiner, Commissioner
NJ Department of Environmental Protection and Energy

Many things have happened over the past year. In NJ, we have begun *forecasting* ozone events rather than simply announcing they have occurred. We are also placing emphasis on regional approaches to implementing the 1990 amendments and have begun meetings of the 11-state (Virginia to Maine) Northeast Ozone Transport Commission of which I am a member. The federal act creates a process whereby this commission can modify rules in any of its member states. We are actively working with the Northeast States for Coordinated Air Use Management (NESCAUM) as well. Also, as a result of the Clean Air Council's 1991 report and recommendations, NJ has instigated discussions with neighboring states regarding revision of the air emergency alert thresholds. I hope that these regional revisions for health advisories will be announced within the next month. And, we are working on ways to improve and coordinate public information efforts in the region.

The Clean Air Act Amendments will have an impact on citizens' daily lives and will result in dramatic improvements in air quality. But, everyone must participate, and public policy choices will be as important as personal choices to the success of the program. Between now and the first decade of the 21st century we need to remove from the state's air over 570 tons per day of air pollutants. This is an enormous amount. After we as a state do everything the act mandates that we do, we will still need to remove about 180 tons per day to remove through programs about which we have some choice: programs like low emission vehicles (LEV), scrapping older, polluting cars, and energy conservation. The input of this council will be very helpful as we make these choices.

The governor has given us some guidelines for selecting among policy alternatives. First, any burdens should be shared equitably by all segments of society. In other words, we can't focus on the obligations of just a single group, the obligation should be shared. Second, we need to recognize that cleaning up the air can have a positive effect on NJ's economy, attracting new industry and technology to the state. Third, we must be flexible, creating a multi-faceted strategy. We need to move away from traditional regulatory command and control methods to a partnership in which the state sets the goals and the private sector chooses how to get there. Government will cooperate if business and industry make appropriate efforts. Fourth, strategies should be cost effective. And, fifth, NJ's policies must be developed within a regional context. Thus, NJ's approach to the 1990 Clean Air Act Amendments should be equitable, positive, flexible, cost effective, and regional.

It will not be easy to implement the new amendments. The problem they address is not new, but we can and are making progress, particularly as public awareness grows concerning both the effects of ozone pollution and the way individuals contribute to air pollution.

Two recent events indicate to me that we can stop worrying that the (economic) sky will fall if we clean up the air. One was the announcement by Englehart Industries, a NJ company, of a new process for the formation of MTBE, an additive used in less polluting oxygenated fuel; this shows how the effort to clean up the air can foster technology and economic growth. The second, was Ford's announcement that their new Ford Escort and the Mercury Tracer models meet California's transitional standard for Low Emission Vehicles. Ford announced it will absorb the extra \$100 these cars cost. Thus, our problems can be solved, and solved in ways that promote both environmental and economic health.

**Michael Kish, Director
Office of Traffic Management
North Brunswick Township, NJ**

Since October 1987 our office has been implementing traffic demand management (TDM) techniques. These include flex time, car pooling, guaranteed ride home plans, and preferential parking for ride sharers. Nineteen of the 29 impacted businesses (those with over 50 employees) have implemented traffic demand plans; the rest comply with our local ordinance without special new programs. I want to make sure that these businesses will receive credit under new congestion management rules.

In addition, North Brunswick is attempting to get other large traffic generators, such as condominium communities, to put at least 10 percent of their peak hour trips into a park-ride facility. We're also looking at forbidding high school students from driving to school. Such programs, however, need to be regional. *[Mr. Kish supplemented his testimony by submitting a copy of the North Brunswick Traffic Management Ordinance, 1989 revised.]*

**James Redeker, Director of Business Planning
NJ Transit, Newark**

Eighteen of NJ's 21 counties are classified as "severe non-attainment areas for ozone," making this state second only to California in terms of polluted air. About 90 percent of the carbon monoxides as well as 50 percent of the hydrocarbons (HCs) that form ozone come from motor vehicle emissions, yet a survey by the Regional Plan Association's *Project Clean Air* in 1991 showed that only a third of NJ's residents were aware of the connection between their cars and air pollution. We need to improve public education efforts so that people are aware of how their personal travel choices affect air quality.

Failure to comply with Clean Air Act standards will have serious negative consequences on both the state's economy and the mobility of its citizens; we are threatened with the loss of more than \$200 million annually to the transit system, as well as with drastic contingency measures that could mandate reductions in personal vehicular use. Implementing the new amendments represents both a challenge and an opportunity.

NJ Transit moves an average of 280,000 people per day, representing 150,000 cars NOT on the road. Transit ridership, however, is directly related to fares, which must be kept

reasonable. This can only be done by maintaining adequate state and federal funding. Currently, riders contribute slightly more than half the operating cost through the farebox; this is one of the highest revenue-to-cost ratios in the country. While a 100 percent operating subsidy is probably not reasonable, the rider contribution should be reduced. Our studies suggest that a 5 percent fare increase will reduce ridership by about 8000 riders per day, which translates into .33 tons of additional pollution per day when these people get into cars. Lowering fares usually increases ridership, although that increase in ridership may not offset the revenue loss. Typically more riders stop riding transit when fares are raised than will start riding when fares are lowered. There are exceptions, however -- for example, the Hoboken Ferry and special holiday shopping rides, and, interestingly, South Jersey routes in general.

NJ Transit's capital projects focus on connecting existing intra-state routes as well as improving commuter service into New York City. The Secaucus connection for the Morris and Essex line and the Hudson River waterfront light rail are examples. These projects will take 3 to 8 years to complete and represent the largest expansion of passenger rail service in NJ in the 20th century. These projects, however, will have no impact on the 60 percent of work related VMT in North Jersey or on the 80 percent of the work related VMT in South Jersey that occurs *outside* urban areas. Places of employment in suburban areas are difficult for transit to serve because of their scattered density, abundant free parking, and unfriendly pedestrian environments. How then will larger employers comply with new Clean Air Act requirements for peak hour travel?

We will need a partnership among private employers, NJ Transit, NJ DOT, and county and municipal governments. As a result of the federal mandate, NJ Transit has experimented with expanding suburban service in response to employers' requests. Currently, however, NJ Transit policy requires the private employers to underwrite part of these new service routes; policy also dictates that any new service pay 100 percent of its operating cost out of farebox receipts within 6 months. These policies make it difficult to innovate. I believe, new services and experimental routes should be entirely underwritten by the state, since suburban services will be central to implementing Clean Air Act requirements. Our 1993 budget request includes a \$5 million proposal for experimental services; it's important to change the way we provide transit in New Jersey.

NJ Transit's Business Alliance is working to make it easier for workers to take transit to the worksite through both employer subsidy programs and a transit information service. Individuals should receive transit fare subsidies at least as valuable as the "free parking" subsidy. At the same time, we need to ensure adequate, open access park-ride facilities, particularly near train stations such as Metropark, Princeton Junction, and South Brunswick. Moreover, it also makes no sense to lower highway tolls at the same time as transit fares are going up. We need consistent policy.

In an effort to clean up buses, NJ Transit changes air filters and checks emissions frequently; we are exploring use of trap oxidizers and alternative fuels. We introduced 5 natural gas fueled buses on January 15; the cost of retrofitting our fleet and constructing new fueling facilities will be high--about \$80 million.

Another approach to increasing transit ridership concerns site design and land use. Long set-backs, huge parking lots, and scattered building sites make it difficult for buses to service people; yet these are just the design features required by many municipalities believe

to be "environmentally sensitive." Clustering and building close to roads would make bus service much more effective as would allowing mixed use development that puts business and retail establishments within walking distance of one another. NJ Transit supports the State Development and Redevelopment Plan in its effort to encourage growth centers. These will improve both regional design and air quality. We urge support of land use planning that supports transit use. One way to ensure this happens is to have NJ Transit staff attend local planning board meetings, as they do in the Seattle area. At the moment, however, we do not have staff for this; in fact, we are looking at lay-offs. We are, nevertheless, working on municipal planning guides for local use.

**James Benton, Executive Director
New Jersey Petroleum Council**

The council is a trade organization representing major petroleum industry corporations in New Jersey. The industry has already taken important steps to implement Clean Air Act goals, including Stage Two Vapor Recovery systems, reduction of vapor pressure in gasoline, and marine vapor recovery at gasoline transfer facilities. We are willing to work with the State

to reach the best decisions based on sound science and good economics, but the industry has grave reservations about premature adoption of the untested, unproven California program. An emissions inventory is long overdue in New Jersey; this should be a first step, and the Clean Air Council should call for it.

The Clean Air Act calls for use of oxygenated fuels by November 1992. This means a 7-month program in northern NJ and a 4-month program in southern NJ. Capital cost to implement this program will be 3 to 5 cents on the gallon. We support this program.

Reformulated gasoline (RFG) will be available in NJ by January 1995. Costs are estimated at 5 to 9 cents a gallon. RFG will be mandated in other states as well, as directed by EPA. If the reformulation follows the California program, the costs will be between 17 and 24 cents per gallon. Although this part of the California program is not currently recommended by DEPE, suits by environmental groups, the suit that resulted in adoption of the Stage Two Vapor Recovery program in NJ, could require adoption of the California experiment. The results could be bad for NJ's economy. Rather, we recommend waiting for the results of the petroleum industry's research before determining the best fuel mix for NJ.

There is some ambiguity in Ford's announcement that it has developed a low emission vehicle (LEV). We should not be overly optimistic. This car used the specially reformulated fuel to achieve its results. Low cost programs, such as the scrappage program and enhanced inspection and maintenance, should be implemented first. I ask you to remember what happened when NJ rushed to implement the Stage Two Vapor Recovery system: NJ lost about 500 service stations because of high costs.

Michael J. Tydings, Environmental Coordinator
Marketing Department, Exxon Corporation
on behalf of the NJ Petroleum Council, American Petroleum Institute

California's air fails to meet federal air quality standards five or six times more frequently than New Jersey's; California's air quality program is specifically designed to address this severity. It is not necessary to adopt the California program in New Jersey. In fact, adoption of this program will reduce emissions by only 0.05 grams per mile more than would be accomplished under the current program,³ after the entire fleet is turned over--20 to 30 years from now. In addition, the California program addresses only a fraction (16 percent) of automobile emissions, because it addresses only what comes out of the tailpipe. We have modeled the difference between adopting the California program in 1994 versus adopting it in 1997 and have found very little difference, so we feel there is ample time to study all the options before rushing into a program that will not do that much. Before adopting "optional" programs, NJ should wait to see the benefits of mandated programs, i.e., on-board diagnostics, reformulated gasolines, oxygenated fuels, and enhanced inspection and maintenance.

The adoption of the California car without adoption of California's reformulation of fuels will cause problems. In California, cars are certified for these specific fuels. Without these fuels, the "certification" becomes meaningless. Moreover, since air chemistry differs across regions, what works in California may not work as well in New Jersey. Finally, if NJ does adopt California's program "by reference," NJ will lose control of its own program, which we be shaped by California legislators and regulators to meet their needs, not NJ's.

All the strategies should be thoroughly assessed in terms of costs and benefits before rushing into premature action. Our studies have concluded that adopting the California program will improve emissions by only 15 percent over 6 years and 3 percent more thereafter. This is not enough benefit to justify the program and its additional cost.

Tony Ippolito, Director of Public Policy
Sun Company Incorporated
Philadelphia, Penna.

Sunoco will manufacture the products needed in NJ to comply with the Clean Air Act; however, we recommend that DEPE regulations do not go beyond the federal mandate. This will only create manufacturing dislocations and increase consumer costs. Second, NJ needs to

³ Automobiles in New Jersey emit 7 to 9 tons per day of hydrocarbons. There are about 906,000 grams per ton. After questioning by Council members, Tydings did not know how the estimates of VMT (vehicle miles travelled) that were needed to produce the 0.05 grams per mile figure had been calculated. According to Tydings, the LEV program would reduce nitrogen oxides (NO_x) from 0.14 grams per mile to 0.1 grams per mile to 0.10 grams per mile.

design a program specifically for New Jersey, starting with an updated and verifiable emissions inventory that takes into account climate cycles and fleet dispersion. Third, the selected strategy should be the most cost effective one. Fourth, DEPE needs to take into account both short-term and long-term regional effects on the regulated community. And, fifth, there should be more study of the implications of the California car before adoption of that program.

Sun advocates a 6-point program to achieve clean air requirements: (1) early and expanded use of alternative fuels (LPG, CNG) for fleet applications; (2) reformulated Federal Gasoline I and II (RFG) and (3) oxygenated gasolines--let's not wait until 1998, RFGs can be on the market fairly quickly; (4) rapid implementation of Stage Two Vapor Recovery throughout the region, particularly upwind of NJ; (5) accelerated scrappage of old, high polluting vehicles; and (6) enhanced inspection and maintenance, including the use of such options as load testing and remote sensors on roadways to identify high polluting vehicles, and stricter enforcement. Enhanced I & M combined with scrappage can improve air by 30 percent.

Besides cleaner diesel fuels for fleet applications, we are also developing an "M-85" fuel, which is 15 percent gasoline and 85 percent methanol. M-85 is being test marketed in Washington D.C. and Michigan. Development of a natural gas fuel network for vehicle use is another option we are looking at. We recommend programs ("transportation control measures" or TCMs) that will reduce the number of miles traveled (VMT), the number of cold starts, and the amount of engine idling. Project Clean Air should be revitalized as a resource.

**Noreen Cardinali, Manager
Bureau of Suburban Mobility
NJ Department of Transportation**

Relatively unchecked development in NJ during the 80s brought economic benefits to the state, but it also encouraged suburban sprawl. People bought more cars because they had to, to get where they want to go in NJ. There are now 6 million cars in NJ, for 7.7 million people, more than any other state. Congestion and air pollution are the direct result, and these cost money. Across the US, shipping delays have added 4 to 7 billion dollars to the cost of food, clothing, and appliances. The traditional solution for congestion problems has been building more roads, but this won't work any more--we're running out of space, not to mention money, not to mention environment.

Senator Walter Rand has introduced "The New Jersey Traffic Congestion and Air Pollution Control Act" (S-35) to help manage travel demand.⁴ This is not a mandatory ride sharing bill; it gives employers the opportunity to choose how they will meet state set goals, which are themselves mandated by the Clean Air Act. The bill would require all employers (public and private) of 100 or more workers to increase average vehicle occupancy for

⁴ S-35 was signed into law on June 30, 1992.

commuting trips by not less than 25 percent for the region.⁵ We expect this to mean 1.3 to 1.4 persons per vehicle. In the 18 counties designated as severe non-attainment areas for ozone, employers would be required to register with DOT to survey commuting habits of their employees and develop a compliance plan for each work site. The plan must be submitted by November 15, 1994, with compliance due by Nov. 15, 1996. The legislation also proposes two new incentives: 1) state tax free employer subsidies to employees for transit commuting and 2) tax credits to employers for expenses up to \$900 per employee for these subsidies. This works out to \$90 per employee on top of the normal business expense deduction, which would also apply. More incentives may be needed, however. The Rand bill also creates a Travel Demand Management Advisory Council and a Technical Advisory Committee, both with public and private representation. Draft regulations could be ready as soon as early summer.

There are many things an employer can do to increase average vehicle occupancy among employees. Financial incentives to employees definitely help. DOT operates a commuter information system for van and car pooling, which we are spreading throughout the state using local Transportation Management Associations (TMAs). We are also working on transit services for suburban areas not well served by traditional modes. Preferential parking is another strategy to help increase riders per car.

Under the federal Intermodal Surface Transportation Efficiency Act (ISTEA) the state must give priority to transportation projects that promote clean air. This means, for example, transit and high occupancy vehicle lanes. The state is studying HOVs on I-80 and I-287, trying to do a better job than we did for the Garden State Parkway trial. HOVs need a base of high occupancy; they also need readily available park-ride facilities.

My bureau has a budget of more than \$5 million for FY 1993 to improve suburban mobility. Three million is earmarked for park-ride facilities.

Reducing congestion makes good business sense. It also helps improve air quality. We need a partnership between government and business to succeed. Under Regulation 15 in California, 70 percent of employment sites saw increases in vehicle occupancy, most through car pooling.

Thomas Collier
Hamilton Test Systems
Tucson, Arizona

Hamilton Test Systems contracts with state governments, such as Arizona, Connecticut, and Wisconsin as well as British Columbia to provide privately operated I & M lanes. We have had great success. Last year, for example, Wisconsin reported that 99 percent of the cars at the 10 inspection stations in greater Milwaukee waited under 15 minutes in line. We are subject to both overt and covert monitoring by the government. Our equipment is calibrated daily.

⁵ Commuting students are not covered under the act.

Since I testified two years ago, the Governor's Management Review Commission has recommended privatization of motor vehicle inspections in New Jersey. But the privatization process has stalled awaiting new guidelines from EPA on required test changes and inspection program structure. I recommend this Council obtain a copy of EPA's draft rules and comment on them, particularly regarding the maintenance portion of I & M, since you can test for all kinds of emissions, but unless problems are repaired, no improvements will occur. A well maintained old car is not necessarily a polluter. The EPA wants owners of cars more than 10 years old to spend up to \$450 to fix them--but if the car costs more than that to repair, the EPA suggests a maintenance waiver be given. I urge you not to get sidetracked on cost efficiency--keep your eye on the goal: cleaning up the air. If water gets polluted, it's possible to buy bottled water. There is no bottled air.

This Council has recommended adoption of an enhanced Inspection and Maintenance (I&M) program, which include emissions tests on loaded running cars as well as inspections for evaporative emissions from non-tailpipe areas. So far, no state has such a program in place, although there is one EPA-operated lane in a suburb of South Bend, Indiana, where they are working on ways to get a rapid and cost efficient enhanced procedure. So far, however, they can do only 7 cars per hour. In Connecticut, where the program isn't "enhanced," we do 45 to 60 cars per hour. EPA has estimated that the equipment for enhanced I&M will cost \$170,000 per lane; in NJ there 85 lanes. I don't know where this figure comes from; our supplier has quoted \$250,000 per lane, down from \$340,000. Also, if NJ eliminates its current independent private inspection network (as EPA has recommended), the state would need to add between 6 and 10 more state-operated lanes. Private inspection stations don't have to be entirely eliminated, of course; Florida, for example, allows regulated reinspection stations for those who fail the state lanes.

Hamilton Test Systems has experimenting with "enhanced" inspection procedures too (IM 240). Most problems we encounter have to do with there being hundreds of different automobile models. For example, emissions control canisters are located in various places on various models--inspectors have difficulty finding them quickly. We are working on this and similar problems and expect to have acceptable solutions soon.

Jim Sinclair, Vice President
New Jersey Business and Industry Association
Trenton, NJ

Our organization represents 13,500 companies. I am interested in the impact of the Clean Air Act requirements on employers. Employers have already taken many actions to control point sources for air pollutants. So far I haven't been able to find any good cost benefit analyses of the new regulations to control ozone pollution. Much data is thrown around, but a definitive study needs to be done. Moreover, not just mobile sources will be affected by the new rules: approximately 15,000 NJ companies will be impacted; many of these companies have already spent much money on cleaning up emissions. It is really important to have a comprehensive view of which strategies are preferable in terms of cost for benefit received as well as cost effectiveness. A survey by Project Clean Air indicated

that even though people value clean air, they may be unhappy about paying \$1 more for gasoline or accepting restrictions on automobile use. This is a real concern. We need to sort things out before we proceed. Furthermore, NJ needs to stay in step with everybody else; we don't have to be out in front.

Some of our members are quite concerned about adopting the California car. These cars depend on specially formulated fuels that NJ will not have. We approve of the decision not to adopt the California fuel standard; we ought not to adopt the California car either unless we are sure it will improve matters. The car manufacturers say that the new controls for evaporative emissions on cars will remove 4 times the emissions of the California LEV cars (74 tons per day v. 20 tons per day). On-board diagnostics can provide more savings.

As for getting people out of their cars, the bottom line is economic incentive. We support the Rand bill. Indeed, I think that DEPE should not be adopting regulations to implement the Clean Air Act. This needs to be dealt with by the Legislature because only the Legislature has the power to offer economic incentives. Our organization is working on a policy paper, but we haven't got one yet. Getting people out of their cars will be difficult. Scrappage programs and economic incentives may help.

Aletha Spang, Principle Partner
Desvernine and Spang, Warren, NJ

Desvernine and Spang is an environmental management and communications consulting firm. Before joining the firm, I worked for the NJ departments of Energy and Environmental Protection for 10 years. I administered the Office of Recycling for 3 years. My experience trying to move the state towards recycling goals of 25 to 60 percent make me appreciate the effort that will be needed to implement the Clean Air Act Amendments. People will need to change both their attitudes and their behaviors. A public education effort similar to that launched for recycling will be necessary. People's responses to state interference with how they deal with their garbage sounded very much like people's responses to state interference with how they deal with their car. The recycling effort has worked; in fact, people are beginning to demand more recycling not less. This is an important lesson.

Fifteen percent of the tax on solid waste dedicated to recycling was earmarked for public education. We hired a firm to develop a statewide educational and promotional campaign. We prepared manuals, brochures, flyers, and provided grants to counties and municipalities for education activities. We wrote school curriculums and developed training courses for local coordinators. A similar, unified, statewide public education program for the Clean Air Act will be essential. Legislative mandates are not enough; the public needs to understand why they must change their behavior. If they don't, they will find ways to circumvent the mandates. You will need logos and gimmicks to capture the public's attention. Then you will need to tell them what to do--how to implement the goals. You will need specific manuals and training efforts for specific audiences. Funding should be made available to counties and local governments, since different parts of the state will need different kinds of strategies.

Children need to be convinced too, for they are an excellent way to get to parents.

Kids are convincing their parents to stop smoking and to recycle their waste. Businesses need opportunities to share experiences. Exchanges of ideas among colleagues are very effective. Programs are needed too for local transportation planners.

In the long term, public education is the only way we are going to change behavior. Economic incentives are for the short term; they encourage compliance and help establish the programs. The mandates of the Clean Air Act are ideal for providing incentives such as preferential parking, flex hours, and transit subsidies. By publicizing these incentives, you can encourage people to use them. We also need a recognition system for those who make the effort; awards don't have to be financial.

I strongly recommend that public education be a line item in all budgets for implementing the Clean Air Act. This is not a frill.

William W. Watson, Staff Engineer
GM Research, Environmental Activities, Warren, Michigan
on behalf of the Motor Vehicle Manufacturers Association

Adoption of the California Low Emission Vehicle (LEV) may be the wrong thing for New Jersey. California's problem is not just an emission problem, it's a weather problem. NJ doesn't have the amount of sunshine that California has; therefore NJ's needs are different. California's problem is 6 times worse than NJ's. Moreover, NJ's air is improving. Moreover, California's LEV standard is still under discussion. Adoption of the California car by NJ will increase consumer costs by \$1000 per car; this figure includes the electrically heated catalytic converter that we feel will be necessary as well as a lot of other hardware. Battery replacement will be more frequent in the LEV, since it will be necessary to raise the temperature of the converter to 600 degrees within 15-30 seconds every time the car is started. The clean fuels program will also eventually be necessary, and these will be more expensive fuels. The extra hardware will also add weight to the car, so the LEV cars will be less fuel efficient. Over the lifetime of a car, the added cost will be about \$2700. Consumers will not be happy, nor will dealers.

Reports of the benefits of the California car are severely over stated. In actuality, the improvement achieved by the year 2005 from adoption of the LEV will be just 1.8 percent. Our state-by-state analysis based on VOC controls indicates that NJ does not need to adopt the LEV to achieve attainment for ozone by 2005. (We have not looked at NOX; we have not looked at transport.) EPA agrees that other strategies should be implemented first, such as enhanced I&M, which could reduce emissions by 30 percent, because 30 percent of the vehicles create 60 percent of the pollution. Fleet turnover is another area that can have high benefits. People who hang onto their old cars are polluting the air.*

*MVMA submitted overheads as well as the following written documents to support Mr. Watson's oral testimony:

- 1). Gregory Dana: "Comments of the Association of International Manufacturers, Inc., and the Motor Vehicle Manufacturers Association, Inc. on the adoption of the California Low

Emission Vehicle standards before a joint legislative committee of the State of New Jersey, April 9, 1992. The AIMA opposes adoption of the California LEV on grounds that NJ air is not as bad as California's. AIMA claims the LEV will not significantly improve NJ air by 2005/7 because of long fleet turn-over time and the small proportion of overall emissions coming from light duty vehicles. Benefits from LEV are more long-term than the mandate. Current HC emissions are largely due to (non-tailpipe) evaporative emissions. The LEV does not address this source. Even EPA expects only 1-2 percent improvement from adoption of the LEV, while enhanced I & M could produce a 30 percent improvement. The cost (\$1010 per car for consumers) is not warranted by the benefit.

- 2). Letter dated April 9, 1992 from Michael J. Schwartz, Manager, Emissions Control Analysis and Planning Department, Ford Motor Company, Dearborn, Michigan, to the Honorable Henry P. McNamara (NJ Senate) and Honorable Maureen Ogden (NJ Assembly). Schwartz states that the new low emission Ford Escort and Mercury Tracer are "transitional" only and will not meet the 1997 California LEV standard unless they are burning reformulated gasoline. Moreover it will be difficult and costly to bring other models to meet even the TLEV standard.
- 3). Letter dated April 21, 1992, from Schwartz to the Honorable Michael J. Bragman (NJ Assembly) opposing adoption of California LEV standards in New York State.
- 4). Press release from Ford, April 14, 1992, announcing that the Ford Escort and the Mercury Tracer had been certified as meeting California's TLEV standard by the California Air Resources Board.
- 5) Other unidentified materials from Ford dated 2/27/92 comparing NJ needs and California's.

Katherine Moser
BIKE, New Providence, NJ

Zero. Bicycles and pedestrians have zero emissions. It's important to remember that clean air is really a health issue, not a technology issue or a convenience issue. Asthma among children in urban areas has increased dramatically in the last 15 years. Last week I asked two groups of third and fourth graders in Newark how many either had asthma themselves or knew someone who did: 70 percent raised their hands in one group, almost all of the second group did. This is what we're talking about.

We're also talking about the 48,000 Americans who die in automobile accidents every year. It was mentioned today that people drove cars because they felt insecure walking. Well, I wonder.

Bikes are not inconvenient. They are not expensive. Bike paths, sidewalks, and bike lockers are not costly solutions. The promotion of bicycle use and pedestrianism can be an important part of meeting the Clean Air Act requirements.

Focusing on demand reduction is a problem, because work related driving accounts for less than 30 percent of all car trips made. So, even if employer based programs are successful, they will reduce total VMT by only 5 or 10 percent. A much greater benefit can be achieved by educating people about car alternatives. Mass transit is necessary, but it's very expensive and takes time to have an impact, and people still have to get to the train or bus stop. Since 30 percent of the pollution comes when you start up your car in the morning, how much help is it if people still drive to the bus stop?

The solution is simple and elegant: the bike. It's the most efficient mode of transport on earth. Since more than 50 percent of US trips are short--under 5 miles--the bike is often a viable alternative. Bikes can work when car pooling can't--car pool to the dentist? Funding for bicycles is available through the federal Intermodal Surface Transportation Efficiency Act of 1991.

Bicycles can be encouraged by (1) designating safe bike routes on the many under-used roads or on wide shoulders of larger roads. Greenway projects should include paths and bikeways. DOT's existing bike policy needs support; it's often forgotten. (2) Bike parking needs some security. Bike lockers are inexpensive and don't take up much space. Their existence goes a long way towards encouraging bike use. (3) Policies need to be changed so bikes can be carried on public transit, especially trains. People may be willing to bike to the station, but what happens at the other end--they also need to bike to wherever they're going. Other jurisdictions have adapted public transit for bike carriage; NJ should too. Design standards are available and its an easy way to increase flexibility. Think of it as extending mass transit service out 5 miles from the station or stop. (4) Bicycles are for everyone, and they're not expensive to operate--unlike cars.

Finally, and this is subtle, bikes get people into the landscape and thus will help make people advocates for more sensitive land use planning. People who ride bicycles have a more intimate knowledge of their communities than those who ride around inside a car.

I have a suggestion for making your hearings accessible to public transit. Plan meetings around train schedules. Have a van meet the local trains. And publicize the train schedule in the hearing brochure. Clean Water Action does this, and every van is full.

Dominick A. Botteri, Transportation Management Consultant
Van Pool of New Jersey
Lawrenceville, NJ

Our organization provides van pooling service on a contracted basis to companies not only in NJ but also in Delaware, Pennsylvania, and NY, including Long Island. We have close to 100 vans; our service includes everything except gasoline and tolls. Our leases run for 3 years, with the only cost increases tied directly to insurance; we haven't had an insurance increase, however, in 15 years. A company may cancel its contract with 30 days notice.

Vans are an alternative to buses. Van pooling was begun in 1974 by 3-M in Minnesota; it saved them from building an additional 2,000 parking spaces. Today, construction of a parking space costs between \$5,000 and \$25,000, so that decreasing parking

area in a development could represent a substantial savings for a business. In Atlantic City today, casinos pay about \$2 per space per day to rent parking outside the city for their employees; each casino needs about 400 employee spaces. Recently I heard they may eliminate that benefit for their employees.

In 1978, when AT&T was moving to Bedminster, they eliminated 1500 parking spaces from their plans by purchasing 70 vans. At that time a van cost \$6000-\$7000; thus the cost of these vans was about \$490,000. But the cost of building the 1500 underground spaces--which is what Bedminster had asked them to do--would have been \$7.5 million!

Van pooling can also be less expensive than mass transit. For example, a monthly ticket for the Princeton to New York commute costs \$240, while a 15-person van can be operated on the same commute for \$125 per person. The savings occur because a member of the pool drives the van--no paid driver. Vans can operate anywhere.

Interestingly, the Chicago Transit Authority has adopted a van pooling concept similar to ours. Van pools flourished in the 1970s for energy conservation reasons; then van pooling fell off after the 1981 Ride Sharing Act, which made companies liable for risk if they owned, leased, or contracted for a van. Ride-sharing was supposed to relieve that. But private van pools also began to appear; to use them companies only had to give out a phone number.

Van pooling does need company support. For example, van riders need assurance that they will all begin and end work at the same time. Van pools won't work if an employee is made to stay late for some reason.

In NJ van pools have 7-15 people, including the driver. A 50-mile round-trip commute in a 15 person van costs about \$64 a month. Van poolers save money on their cars--wear, tear, gasoline, and insurance reductions.

Bob Garrick
South Brunswick Township

Riding a bicycle today can be dangerous and inconvenient. Society needs to refocus its thinking to facilitate bicycling. I believe people would ride more if they perceived it as safe.

Marie Curtis, Legislative Representative
New Jersey Environmental Lobby
Trenton, NJ

Tailpipe emissions account for a major portion of air pollution in NJ. Thus, we urge that this area be addressed first when considering measures to bring our state into compliance with the new Clean Air Act Amendments. Specifically, we recommend regional adoption of the California LEV as the quickest and cheapest solution to NJ's air pollution problem. A by-product of this strategy could be rejuvenation of Detroit's auto industry. Additionally, oxygenated fuels are readily available and should be encouraged.

These technological approaches must, however, be accompanied by a massive public education campaign so that people understand the relationship between transportation modes

and poor air quality and the risk we as a state take by not complying with federal standards.

Although new low emitting cars may cost the consumer a few dollars more, this additional cost is nowhere near the price we as a society will pay for the poor health that comes from breathing poor air. People need to understand this relationship too.

The long-term solution to air quality, however, must not simply be cleaner technologies; it must be to get New Jerseyans out of their single occupancy vehicles. Our love affair with the personal auto must come to an end! Mass transit is available only to some. Car pools and van pools need economic incentives to succeed. Telecommuting should be encouraged, perhaps assisted by government grant. Innovative solutions are being developed, and NJ should implement them. Changing the economics of the individual automobile will be an important device. Parking spaces should be priced to reflect the cost to air quality. Sound, transit sensitive land use should be promoted. It should be made more not less costly to keep an older, high polluting car. Energy efficiency should be rewarded as a way to reduce air pollution. For all of these strategies, public education will be crucial. It should have been begun long ago.

In sum, we recommend a multi-faceted approach accompanied by a massive public education campaign.

This report was prepared for the NJ Clean Air Council by Linda Howe, PhD, Editorial Services, 76 Bellvale Road, Mountain Lakes, NJ 07046