

NEW JERSEY CLEAN AIR COUNCIL 1973 PUBLIC HEARING REPORT

CLEAN AIR AND TRANSPORTATION  
ALTERNATIVES TO THE AUTOMOBILE

and

WILL THE ENVIRONMENTAL IMPACT STATEMENT  
SERVE TO IMPROVE AIR QUALITY IN NEW JERSEY

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

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State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF ENVIRONMENTAL QUALITY  
JOHN FITCH PLAZA, P. O. BOX 1390, TRENTON, N. J. 08625

January 21, 1974

Honorable Richard J. Sullivan, Commissioner  
New Jersey Department of Environmental Protection  
Trenton, New Jersey 08625

Dear Commissioner Sullivan:

The New Jersey Clean Air Council is pleased to forward its report on public hearings held pursuant to Title 26:2C-3.3: (h), which states that the Council shall:

"Hold public hearings at least once a year in regard to existing air pollution control statutes, codes, rules and regulations and upon the state of the art and technical capabilities and limitations in air pollution control and report its recommendations thereon to the commissioner ...".

We held public hearings on May 2, 9, and 16, 1973. We wanted to hear testimony on what alternatives to the private automobile were available to our citizens, and how our citizens might respond to these alternative means of transportation. Even before the full effects of the current energy crisis were being felt, we knew that the use of transportation other than the private automobile could conserve our natural resources and improve the quality of our atmosphere.

We found that many citizens of New Jersey would use public transportation facilities if the facilities were reliable, secure, safe, and clean. Our report presents our recommendations in this area in detail. We also discuss land-use planning as related to transportation problems, and we vigorously reaffirm the Council's earlier recommendation that automobile exhaust emission testing be made mandatory without further delay.

As a second topic this year, we examined the use of the Environmental Impact Statement as a tool for continued improvement of air quality in our State. The

Honorable Richard J. Sullivan, Commissioner  
New Jersey Department of Environmental Protection  
Trenton, New Jersey 08625

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Council is certain that this tool will be of great value, and we have several recommendations on the "Who, What, When, and Where" of such Statements, which should be used for those projects, whether point source or complex source, and whether in the public or private sector, which could have significant effects on our environment.

Sincerely yours,

CLEAN AIR COUNCIL

Irwin S. Zonis  
Chairman

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STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NEW JERSEY CLEAN AIR COUNCIL  
Irwin Zonis, Chairman

Report of the Annual Public Hearing  
of the New Jersey Clean Air Council

on

CLEAN AIR AND TRANSPORTATION  
ALTERNATIVES TO THE AUTOMOBILE

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1973

New Jersey Clean Air Council  
Department of Environmental Protection  
John Fitch Plaza, Trenton, New Jersey 08625



## CLEAN AIR COUNCIL PUBLIC HEARING REPORT 1973

### Introduction

The New Jersey Clean Air Council, in its 1973 public hearings, considered two independent topics. The first, "Clean Air and Transportation - Alternatives to the Automobile" was chosen because of the heavy load of air pollutants contributed by motor vehicles and because of the far reaching effects of any major change in available transportation alternatives. The second question which the Council explored was: "Will the Environmental Impact Statement Serve to Improve Air Quality in New Jersey?". In this second inquiry the Council sought to determine the potentials and problems in the use of this new environmental management tool for improvement of air quality.

The public hearings were held on May 2, 9 and 16 at the County College of Morris, Middlesex County College and Gloucester County College respectively. To encourage the broadest possible participation, testimony on both topics was invited and received at each session. (See Appendix B.) The information in this report represents a summary of the opinions and recommendations received during these three days, supplemented or modified by the experiences and expertise of the Council members.

The format of this report will be to treat the two topics separately. In Section I the key findings and recommendations on the transportation issue are given first, followed by an in-depth discussion of these suggestions. The same sequence is then followed for the treatment of the environmental impact statement in Section II. Appendix A contains the background and composition of the Clean Air Council. Appendix B is a listing of those submitting testimony during the 1973 public hearings.





## SECTION I

"CLEAN AIR AND TRANSPORTATION ALTERNATIVES TO THE AUTOMOBILE"KEY FINDINGS AND RECOMMENDATIONSSummary

In three days of testimony and detailed questioning, the Clean Air Council heard many specific proposals and examples of transportation alternatives that could significantly reduce the pollution caused by automobiles. These proposals ranged from the exotic to the prosaic, from multi-billion dollar automated "people movers" to modest bikeways. To merely catalogue these proposals is unfair to the individuals and organizations who testified, to the thousands of concerned citizens they spoke for, and to the readers of this report. The excitement and message of the 1973 public hearings was that the testimony taken in its entirety demonstrated an overwhelming willingness and readiness to explore alternatives now. The proposals offered were not hypothetical solutions to future problems; they were not requests for further study.

Many concerned citizens of New Jersey are dissatisfied with their automobile-based transportation system and their deteriorating air quality. They realize that alternatives are costly, both in dollar terms and in altered lifestyle. They realize that some attempted solutions will fail, while others involve major transitional adjustments. It is not through ignorance of these costs and uncertainties but through acceptance of them that the following recommendations are made.

Two recurring themes in the testimony deserve special consideration. The first is that any proposed transit scheme must provide certain essential characteristics if it is to be a viable alternative to the automobile. Comfort, safety, and reliability are necessary. Speed is important as it relates to total trip time, but a high top speed is not required. Personal security is an increasing concern. A clean, attractive environment must be afforded not only in the vehicle but also in the stations or terminals. Without all these ingredients, the automobile remains a rational choice and inevitable winner in the struggle for consumer preference.

The second theme concerns the matter of timing. Although many of the proposals require several years and huge budgets for implementation there are several which could be done in six months or less at modest cost. Rather than bury these "first-aid" measures among the longer-range recommendations, the Council would like to highlight the following nine steps which should be taken immediately:

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1. Rapid implementation of mandatory emission control inspection requirements.
2. Low registration fees for low-emission vehicles.
3. More exclusive-use bus lanes.
4. Higher parking fees in downtown locations.
5. No more abandonment of railroad rights-of-way.
6. Additional experimentation and demonstration programs in bus collector-distributor systems, such as Dial-a-Ride.
7. Design and funding support for bikeway construction.
8. Realignment of priorities within the State's Department of Transportation to reflect a commitment toward the general public-transportation situation.
9. An aggressive public education effort to explain and encourage transportation options.

These steps, discussed at greater length below, may not all represent optimal solutions or result in final configurations, but they represent significant departures from current trends. They could all be done in the next six months and should be done if only to demonstrate that state government is able and willing to respond to the kind of public demand voiced in the Council's 1973 hearings.

#### FUNCTIONAL BREAKDOWN OF RECOMMENDATIONS

Concerning the basic question of alternatives to the automobile, a three part strategy is necessary if future trends in transportation are to improve air quality. First, recognizing that we are and will continue to be primarily dependent on the automobile for at least suburban and rural transportation, we must extend and increase our efforts to control motor vehicle emissions. Secondly, to encourage more efficient use of both the automobile and other transit facilities, we should seek incentives to reduce auto travel. The third and obvious component is the provision of increased and improved transit alternatives.

To reduce pollutants caused by motor vehicle emissions, the Council recommends:

1. The Department of Environmental Protection, working with the Division of Motor Vehicles, must permit no delay beyond February 1, 1974 for implementation of mandatory vehicle emission control inspection standards.

2. Advanced emission control technology should be encouraged.
  - a) New Jersey members of the U. S. Congress should elicit Federal support for research and development of new techniques.
  - b) New Jersey should provide a market for advanced designs by incorporating best available technology on state vehicles.
3. The Division of Motor Vehicles should establish a lower registration fee for vehicles of demonstrated low pollution performance.

To reduce automobile travel by incentive or regulation, the following are suggested:

1. Car pools should be encouraged by reduced tolls and employer incentives.
2. More exclusive-use bus lanes, similar to the Lincoln Tunnel demonstration, should be established by the Department of Transportation.
3. The capacity and number of park-and-ride facilities should be increased.
4. Differential tolls should be used to discourage peak-hour congestion. Present discounted commuter tolls should be discontinued.
5. Parking in central business districts should be discouraged by limiting spaces and increasing fees.
6. The Department of Community Affairs, working with local Chambers of Commerce or municipal governments, should coordinate staggered work hour schedules to reduce peak congestion.

In providing increased or improved non-automotive transit capabilities, there are three distinct categories of travel requirements that must be met. To accommodate each of these categories requires a different mix of modes and strategies.

Interurban transportation, suburban commuting to central business districts, and very high density urban travel requires improved high speed line-haul facilities, specifically railroads or express buses. The council finds in the Lindenwold line an example and justification for investment in state-of-the art rail equipment. The following points emerged from testimony:

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1. To be an attractive alternative to the automobile, transit facilities must offer a high level of services: reliability, personal security, safety, and a clean attractive environment are essential.
2. The costs of acquiring new rights-of-way are so high that any existing mass transit roadbed or right-of-way must be kept in the public domain.
3. Under the present economics of operating rail lines, passenger fares can be designed to cover operating costs, but not capital investment.

The second category of transportation requirement is the multiple-origin/multiple-destination trips generated by activities such as diverse suburban commuting, shopping, and recreation travel. There are several measures in this category that deserve consideration.

1. The improvement and modernization of existing bus services should be accelerated.
2. The use of buses as collection and distribution feeders for commuter transit should be extended.
3. More experimentation in demand scheduling, such as the Haddonfield Dial-a-Ride system, should be encouraged.
4. Applications of the advanced technology Personal Rapid Transit schemes should be explored.
5. The State should set an example in transportation planning by supporting major demonstration programs in Trenton, New Brunswick, or other areas where State facilities are located. In addition, the Sports Complex planned for the Hackensack meadows would be entirely appropriate for a major transportation program.
6. The effectiveness of operating subsidies to provide lower fares for intraurban transit should be explored by experiment.

The Council heard many references in the three days of testimony to the third broad category of transportation requirement -- that of local low speed trips. These trips need not require motor vehicles if some safe and attractive non-powered alternative is accessible. This could be accomplished by:

1. Providing design and funding support for bikeway construction.

2. Encouraging pedestrian-oriented urban and suburban development.

In examining the air quality effects of transportation alternatives, the Council found it valuable to consider simultaneously two related topics: the relation of land-use planning to transportation proposals, and the non-pollution costs of an automobile-based transportation system. These two additional aspects highlight both the difficulty of rational transportation planning and the large benefits to be gained if such planning is successful.

#### LAND-USE PLANNING AS RELATED TO TRANSPORTATION PROPOSALS

The automobile is a major cause and necessary component of our current land-use pattern. In recommending alternatives to the automobile and incentives to use these alternatives it is apparent that such recommendations will only be effective if they are a part of a master scheme of growth and land-use policy. The Council's key findings on this subject were:

1. Population densities and origin-destination distributions which can support mass transit investment are a direct result of rational land-use restrictions. Such restrictions may also inhibit excessive population shift or urban decay that might force transit obsolescence.
2. The need for many currently unavoidable auto trips could be sharply reduced by land-use policies that make recreation, shopping, and work places closer to residential units.
3. The possible adverse development effects of a transportation facility can be avoided only by concurrent land-use planning.
4. The need for a regional environmental approach to air quality requires a comprehensive land-use plan as a basis for determining and evaluating proposed transportation controls.

#### OTHER ASPECTS OF THE TRANSPORTATION PROBLEMS

Although the Council was concerned primarily with the air quality effects of transportation policy, it was often reminded and is increasingly aware of the other costs of an automobile based transportation system. The following effects should give added impetus to the search for viable alternatives:

1. Injuries and work lost as a result of accidents.
2. The high personal expense of private automobiles.

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3. The generally degraded quality of life and the increased health risk caused by the stress, noise and congestion of auto travel.
4. The fact that private automobile transportation is often not available to the young, the elderly, the handicapped, or the poor.
5. The very high fuel consumption and low efficiency of auto travel, resulting in excessive depletion of non-renewable resources and exacerbating the "energy crisis."

There are several peripheral aspects of the search for transportation alternatives that require institutional or policy changes:

1. Transportation planning, including highways, transit and toll authorities should be integrated into a single responsibility center with a clear mandate to develop an environmentally sound overall strategy.
2. The large capital investment required by construction of major transit facilities will require not only heavy Federal support but also State bonding or a broader state tax base.
3. Public education is an essential component of any plan to make mass transit work.
4. Non-structural alternatives to improved transportation, such as innovations in communications or goods delivery systems which might reduce travel requirements, are an essential complement to overall transportation planning.

#### DISCUSSION OF FINDINGS AND RECOMMENDATIONS

In this section, the Council provides the background and rationale for the suggestions summarized above.

#### THE CONTRIBUTIONS OF MOTOR VEHICLES TO NEW JERSEY'S AIR POLLUTION

The 1970 Federal Clean Air Act has set strict ceilings on six pollutants which must be met by 1977. In New Jersey, three of these agents, hydrocarbons, carbon monoxide, and nitrogen dioxide, are produced chiefly by motor vehicle emissions. The following table lists the contributions of motor vehicles to the presence of these three contaminants. Lead, introduced into the atmosphere from motor vehicles and the subject of currently proposed regulations, is also included.

PERCENTAGE OF FOUR MAJOR  
POLLUTANTS CAUSED BY MOTOR VEHICLES

HYDROCARBONS	97%
CARBON MONOXIDE	71%
NITROGEN DIOXIDE	62%
LEAD	90%

Source: N. J. Department of Environmental Protection<sup>1</sup>

The degree of dependence on this high-pollutant mode of transportation is clearly indicated by Department of Transportation statistics. They estimate that in 1970, over 83% of all trips were made by automobile (97% by auto, bus, and truck),<sup>2</sup> and that vehicle miles traveled will more than double by 1990.<sup>3</sup>

Although court decisions may modify the administration of the 1970 Clean Air Act, and the State-Federal disagreement over implementation plans remains to be resolved, it is clear that the auto is a prime offender in air quality degradation. Some combination of emission controls, motor vehicle use restrictions, and growth policy will be required to restore acceptable air quality in New Jersey.

Emission Controls

The Federal government has assumed the responsibility for setting new-car standards for emission control equipment. The task remaining to the State of New Jersey is to insure that the operation and maintenance of the cars currently in use are in compliance with air quality goals. The chief means to this goal is a State inspection requirement. In its 1970 Report, the Clean Air Council stated:

The motor vehicle emission inspection system as now developed by the Department of Environmental Protection contemplating the use of the present motor vehicle inspection stations should be implemented immediately. The present schedule for full operation by late 1972 must be significantly accelerated.<sup>4</sup>

Again, in our 1972 Report, the Council stressed:

Even with the development of an extensive mass transit system, the private automobile will continue to be an important means of transportation. It is necessary, therefore, that the 1975-1976 standards are as effective as possible. The Council would like to register its unequivocal

support for the state inspection system which will eventually require all registered vehicles in New Jersey to meet minimum emission standards.<sup>5</sup>

As recently as May, 1973, the Council was satisfied that the over 1,000 emission testing machines already available to private service stations and the number of trained mechanics was sufficient to warrant enacting the July 1 mandatory compliance regulations. However, the decision was made by the Legislature to delay this requirement. The Council regrets this delay, and must once again recommend the earliest possible implementation of mandatory inspections. It is our conviction, supported by testimony from several citizens groups, that by postponing this procedure New Jersey is neglecting the most valuable tool in air quality management. Because of the high visibility of this issue and the publicity associated with the repeated delays, the State may be creating an undesirable climate of public opinion where pollution control regulations are regarded as unrealistic, unworkable, and not worthy of serious consideration by the general public.

The Council feels that the inspection system is only a first step in the emission control process. Accompanying the mandatory requirements should be a major public education effort to explain the reasons for the regulations and the means for effecting compliance. The linkage between auto emissions, air quality, and health should be stressed. This is an early and vital opportunity to foster an awareness of clean air as both a public good and an individual responsibility. Labelling of new cars in terms of fuel economy and emission control performance would facilitate consumer choices and public awareness. After initially establishing an acceptance and working experience with the proposed system, further refinements can be made, including:

1. More frequent examination of fleet and commercial vehicles
2. Retrofit requirements for older engines
3. Licensing of qualified mechanics. (Possibly enabling them to make authorized repairs or adjustments that would not require a reinspection of the vehicle.)

The inspection program goal is to insure minimum standards are met. The Council would like to see further investigation and encouragement of advanced technology or emission reductions below the established limits. Methods for accomplishing this goal include:

1. Lower taxes on non-leaded fuel.



2. Higher registration fees for most vehicles, but lower for low emission vehicles. Thus, small displacement conventional engines and new designs such as stratified-charge or gaseous-fueled engines would be registered at the preferential fee.
3. Modification or replacement of State vehicles conform with best-available emission technology.

### Motor Vehicle Use Restrictions

Having established a minimum pollution level for the individual vehicle, two further gains are possible: we can use that vehicle more efficiently, and we can use mass transit when mass transit is a reasonable alternative. Use restrictions on the motor vehicle are an important step toward these goals.

Car pools are one way of more efficiently using the automobile. Use of car pools can be encouraged by reducing tolls according to the number of passengers, by permitting car pools in exclusive-use bus lanes, and by encouraging employers to create incentives for car pools. Assistance in forming and maintaining car pools could be made available through computerized matching services or local rosters of rides offered and desired.

Reducing congestion is a second means of improving vehicle efficiency and reducing emissions. By improving traffic flow and reducing low-speed or idling times, the pollutants per mile are sharply reduced - a car travelling at 15 mph emits 20% less pollutants than at 10 mph. The historical means of reducing congestion has been by structural measures - by widening and dividing roadways, providing limited access or bypass routes, and improving marking and signalling. While structural measures continue to be a means to reduce congestion, they also serve to encourage more motor vehicle travel; this works to the detriment of mass transit efforts and in the long run creates larger scale traffic jams.

Non-structural measures may also serve to reduce travel demand peaks and therefore ease congestion. Higher tolls at rush hours would help to even out traffic levels. Staggered work hours or four-day work weeks by some employers would help to distribute the peak-hour loads and thus reduce congestion. Exclusive use bus lanes, while increasing congestion for the excluded vehicles, produce a more efficient overall use of roadway capacity.

Using motor vehicle restrictions to make mass transit more attractive can play a limited but effective role, particularly in influencing those who commute from suburbs to central cities. Among the measures suggested are increasing bridge and roadway tolls and eliminating commuter discounts, and limiting the number and raising the price of downtown parking facilities. These

steps would force the motor vehicle operator to pay some of the social costs of the pollution, congestion, and land use which are currently borne by the general public. However, two cautions should be immediately acknowledged. First such measures will be politically unpopular. The adverse public reaction can be mitigated by a careful and extensive public information effort to explain the reasons for the restrictions and the options available to the commuter. The second caution is that real options must be available before severe restrictions can be imposed. To make automobile travel difficult or expensive without providing reasonable alternatives would generate only resentment and resistance.

### Rail and Line Haul Travel

The main problems in this transportation category seem to be financial. Although new advances in propulsion and automated control can contribute to rail service, the currently available equipment can meet heavy commuter demands handsomely, as shown by the PATCO Lindenwold line. The fact that five major North Jersey commuter lines are bankrupt and that passenger service throughout the state has steadily declined with falling profits has resulted from a combination of several factors. Misplaced economic incentives such as massive public investment in highways and disregard for environmental effects have subsidized the automobile. Growth and travel trends based on the automobile have favored low density suburbs and dispersed business and residential sites. Railroad management has not effectively dealt with labor problems or explored marketing techniques to promote and upgrade their services to counter these trends.

The entire question of railroad finances and management is currently under intense Federal scrutiny. Government ownership or operation of the railroads is being considered, as well as combinations of public investment and subsidy. The Clean Air Council, while not advocating a specific policy to solve the railroad predicament, does feel that rail passenger service must be retained, upgraded and expanded. This is a joint task requiring imagination and innovation by government, management, and labor representatives.

Motor vehicle use restrictions will make rail travel economically more attractive, but the other dimensions of transportation service must also be considered. No workable economic incentive will force a commuter from his roomy, comfortable, air conditioned sedan into a crowded, stuffy, and dilapidated train. Rail travel must be clean, safe, comfortable, and reliable. The issue of personal security is a particular concern in designing and operating rail systems for New Jersey's urban areas. The incidence of crime in the New York City subway system is a powerful disincentive to travel by urban rail transit.

A particular danger caused by the present railroad difficulties is that existing rights-of-way may be abandoned. Any policies which are adopted to ease the railroad plight should insist on the retention of these roadbeds and easements as the first step in restoring rail as a primary mode of freight and passenger travel. Citizens groups, especially the West Shore communities in Bergen County, recognize the necessity for maintaining rights-of-way and restoring service.<sup>7</sup> Others expressed hope that electrification of existing tracklines might soon bring rail transit to new areas.<sup>8</sup> The clear conclusion to be drawn from the testimony is that many New Jersey citizens are ready for new and improved rail transit, and will support public or private sector measures to provide such transit.

### Bus Service

Rail transit is feasible only where a large number of passengers have a common origin, destination, or both. Unfortunately, much of New Jersey has developed in such a way that this type of demand is not generated. For the multiple-origin and multiple-destination requirements that characterize much of the transportation needs of the state, the bus is the best transportation mode. The financial condition of many bus companies, like that of the railroads, has deteriorated since WW II, but several measures should substantially reverse this trend.

One of the most pressing needs is for better coordination and information flow among the various bus lines and services. Schedules should be aligned to provide convenient transfers. A passenger should be able to obtain quick and accurate answers to queries about service. In addition to cooperation between bus lines, a major effort should be made to improve the bus-to-rail and bus-to-airline interface, so that bus lines can serve as collector-distributors for line-haul systems.

Some recent innovations in bus services must be further explored and expanded. The Haddonfield Dial-a-Bus is actually a minibus operating as a shared taxi, making pickups and discharges in response to riders' calls. This on-demand service is one of the major attractions of the private motor vehicle, and any mass transit service that provides this feature is certainly one of the best alternatives to the automobile. Exclusive use bus lanes, as discussed above, are another development that deserves wider application. An unproven but promising proposal for development is a dual-mode vehicle that operates as a bus on the streets to collect or distribute its passengers, but can transition to a trolley or train-type rail vehicle for the high speed portion of its trip.

### Other Considerations

Personal Rapid Transit (PRT) systems use advanced technology equipment to provide small, automated and on-demand "people movers" along an extensive guideway or monorail network. While these systems may be the brightest hope for mass transit in medium density urban areas like Trenton and Newark, the capital investment required for their construction is so large that the best prospect is for New Jersey to actively seek a Federal demonstration project.

In all types of transportation planning and experimentation, state facilities are an excellent proving ground and showcase for new techniques. The State Capitol complex in Trenton, state colleges and universities; and recreation areas such as Island Beach, the Delaware Water Gap National Recreation Area, or the Sports Complex in the Hackensack Meadowlands are ideal sites for the application of creative and environmentally sound transportation planning.

Several citizens and groups testified to the Council that they would be willing or eager to abandon all forms of powered vehicles for much of their travel, if only they could walk or cycle safely. The fact that such non-polluting travel would substantially improve the physical and mental well-being of the participants has prompted the Council to recommend that pedestrian and bicycle travel be given top priority in the design of new or renewed urban and suburban development.

### Land-Use Planning

The interdependence of land-use and transportation was mentioned several times in testimony to the Council, and must be a primary consideration in any strategy to provide transportation alternatives. The absence of strong land-use policies in the past has permitted the convenience and "freedom" of automobile travel to determine population distribution and personal location decisions.

The following table shows the requisite population densities for various transportation modes to be economically feasible.

<u>DENSITY</u> (Dwellings/acre)	<u>TRANSPORTATION MODE</u>
Less than 5	Essentially automobile
10	Bus becomes possible
25-50	Local rapid transit
5-50	Auto use declines

Source: Regional Plan Association<sup>9</sup>

Most of suburban New Jersey is below the 10 units/acre required to justify bus service. While recent trends in townhouse developments, planned unit developments, and condominium apartments may represent a shift toward the higher densities that favor mass transit, the basic trend is for increased suburbanization of farm and vacant land. In terms of air and watershed management, the consequences of this continued sprawl will be to simultaneously increase the load on the ecologic system (pollution generation) while decreasing its capacity (pollution dissipation).

The Council is convinced that only through comprehensive land-use planning and restrictions can we insure that an environmentally tolerable pattern will emerge. (A laudable example of such planning is the Blueprint Commission's proposal for agricultural open space preservation.) By channelling development to public-transportation corridors and to urban centers provided with adequate public-transportation resources, we will provide the densities necessary to support and strengthen mass transit while moderating some of the forces which have contributed to urban decay.

Land-use planning can do more than insure that minimum densities are generated; it can also reduce the demand for transportation. Trip requirements are minimized if communities are planned so that a high degree of their employment, residential, and recreational needs are met internally. Recent court trends requiring some low and middle income housing in all communities, for example, could have a major impact in reducing the reverse commutation phenomenon of central-city workers holding jobs in the affluent suburbs.

While land-use restrictions are an aid to transportation planning, the converse is also true. Providing major transportation facilities without attendant growth policy is an invitation to more suburban sprawl. The rural areas of New Jersey are particularly sensitive to this possibility. In South Jersey, the predominantly undeveloped open space and farmland would become very vulnerable to residential subdivision if a major transportation artery were built to or through it. This type of development has occurred rapidly in the communities along the Lindenwold line. Similarly, the extensive expressway network proposed to service the Tocks Island Reservoir would seriously jeopardize the quiet rural setting of Warren and Sussex Counties. The character of these areas should be determined by explicit state and local policies, not as the secondary effect of rail and highway alignment.

#### Other Costs

The Council feels that the threat to air quality is only one of several motivations for seeking an alternative to the automobile. There is a high social cost associated with the

risk and loss from automobile accidents. (Fifty-six thousand persons killed and two million injured annually in the U.S.A.)<sup>10</sup> There is also a substantial health risk associated with the long-run effects of the tensions and frustrations of driving.

The automobile is very expensive in terms of land and energy. A bus lane carries 12 times more people than a lane of automobiles, and is ten times more efficient in passenger miles/gallon.<sup>11</sup> The materials, energy and human effort spent in auto manufacturing are tremendous; the number of jobs provided by the overall automobile industry is most significant. The land devoted to the accommodation of automobiles in garages, parking lots, service stations, and junkyards is a dominant feature of many American landscapes, especially urban and suburban areas. While these factors may be asides to the air quality issue, they all require consideration in any analysis of transportation alternatives.

### Institutional Aspects

If New Jersey is to deal effectively with its transportation problems, a new institutional framework is necessary. First, the Department of Transportation should realign its priorities to commit itself to the entire transportation spectrum, with highways as an important but subordinate responsibility. Then, the Parkway, Turnpike, and Expressway Authorities should be integrated into a new agency, and its workings coordinated with the Department of Transportation. In addition, the Port Authorities should be realigned to serve total transportation needs rather than bond holders. Any funds collected from transportation user taxes should be generally available to the Department for use throughout the transportation spectrum. Only from such a department can innovations and solutions to the overall transportation dilemma be expected.

A particular concern for this new department should be public education. The Council was impressed with the willingness of concerned citizens to accept restrictions and curtailments of their personal lifestyle to further environmental or general social goals. But these are the citizens who have actively sought the information on which they base these decisions. To create similar willingness in the general public will require an information program of the highest quality and coverage. The reasons why restrictions, or higher fees, or tighter inspections are required must be clearly and convincingly stated, preferably in terms of human health and local values, not "to meet Federal standards" of some numerical quantity. Information about the options available or means of compliance should be not only available but aggressively distributed by State agencies. Public hearings should be feedback mechanisms, not procedural hurdles. The Clean Air Council does not feel that transportation alternatives must be a painful imposition on the public; they are rational choices that will be voluntarily arrived at if the information and education program is actively pursued.

## SECTION II

"WILL THE ENVIRONMENTAL IMPACT STATEMENT SERVE TO  
IMPROVE AIR QUALITY IN NEW JERSEY"

KEY FINDINGS AND RECOMMENDATIONS:

The environmental impact statement (EIS) was mandated at the Federal level by the National Environmental Policy Act of 1969, as a means of insuring that environmental considerations are included in the planning and approval of Federally funded projects. A similar device is employed by some states and even a few municipalities. In examining the possibilities and problems of the EIS in improving air quality, the Clean Air Council feels that three major questions must be answered.

1. When should an environmental impact statement be required?
2. How and by whom should it be prepared?
3. How and by whom should it be reviewed?

In response to the question of when an EIS is needed, the Council found that at both the state and local levels the EIS could be a useful means of evaluating the environmental effects of a proposed project, and as such should be required or encouraged as appropriate. However, to require an EIS for every project would be unwise at present since neither the expertise for preparation nor the staff for evaluation are available.

In the preparation of environmental impact statements, the Council has four specific recommendations:

1. A wide variety of disciplines and experiences is required for EIS preparation. Because of the diverse backgrounds and qualifications of the persons involved, a formal licensing procedure is not currently feasible. An evolving roster of those performing acceptable analysis is a first step toward public accountability.
2. Environmental zoning and definition of a regional data base would facilitate EIS preparation and set minimum conditions for requiring them.
3. In the specific area of air quality effects, an EIS should include the worst expected pollution levels under adverse weather and operating conditions.

4. An EIS should be prepared by the applicant (individual or agency) who proposes a project, not the official or agency responsible for its approval.

In the review phase of the EIS process, the Council recommends that:

1. A single agency, within the Department of Environmental Protection, but with strong cooperation from other departments and agencies, should have the authority both to approve an EIS and to issue all the appropriate environmental permits for a project. The same EIS should suffice for all levels of government. DEP approval should be a prerequisite for other departments to issue permits for activities within their purview (e.g. a permit for sewage disposal from a local authority).
2. A sequential review system is necessary to assure appropriate level review, to refine or refuse unsatisfactory statements, and to consolidate like statements for higher level review.
3. The increased workload at the reviewing agency will require increased staffing, establishment of time limits on allowable delay, and a graduated approach to the scope and volume of statements required. A fee paid by the applicant to offset costs of review should be instituted.
4. The public hearing phase of EIS review is most useful if held when project plans are still flexible and if held as an open hearing where all points of view can be heard.
5. An EIS for a single project can be accurately assessed only if other proposed projects affecting the same area (airshed, watershed, transportation network) are considered simultaneously. A regional approach is essential in reviewing an EIS, to insure that each project is considered in its overall environmental context.
6. The environmental impact predicated in an EIS should, whenever possible, become a binding performance requirement on the applicant.



## DISCUSSION OF FINDINGS AND RECOMMENDATIONS

The testimony and suggestions received by the Council on this second topic were not as specific as those concerning transportation alternatives, because the EIS is both a recent device and a relatively complex procedure. The testimony that was heard, however, was enthusiastic about the potential of the EIS as an environmental management tool; the suggestions received were aimed at strengthening or refining the EIS process.

### Contents of an EIS

In general, an environmental impact statement has six major sections. The first is a description of the site before the proposed project. This resource inventory gives a baseline or reference for impact assessment. The second section is a description of the proposed project, and the third is the actual impact assessment which is done by an overlay of the proposed project on the baseline site. Unavoidable adverse effects are discussed in the fourth part, and alternatives to the project or alternative protection measures are evaluated in the fifth. The last section is for review; comments by other agencies or experts are included here. Specific guidelines for EIS content are now available in a statement entitled "Guidelines - Environmental Impact Statements" issued in October 1972 by the Division of Environmental Quality, and also in Governor Cahill's Executive Order #53, October 5, 1973.

It is clear from this brief description that a thorough EIS for even a very simple project could be a formidable task. Competence in biology, engineering and economics would be required to assess the impact of construction of even a single-family home or a highway culvert. On the other hand, the intent and virtues of the EIS process are also obvious. By requiring an integrated and in depth analysis of all facets of a project during its planning stage, and making this analysis a matter of public record, we can both upgrade the quality of original designs and insure the possibility of modification or intervention at an early stage in the project life.

### When Should an EIS be Required?

If an EIS could be simply and accurately prepared at low cost, and if experts were readily available to accomplish and review it, then we would recommend that an impact statement be required for every project. Unfortunately this is not the case. Very few individuals or firms have the expertise and interdisciplinary capability to do a first-rate assessment; the ones that do are understandably expensive. This same dearth of talent and capacity is also acute at the government level of review and approval. The administrative procedures and legal devices for dealing with EIS problems are not fully developed. For all these

reasons it is desirable to limit, at present, the requirement for impact statements to only the most critical projects. These are projects sponsored by, or funded by, the Federal or State governments, or those projects in the private sector (whether they be point sources such as a new refinery or generating station, or complex sources such as a new shopping center or a "new town") which can be expected to have significant and widespread environmental reactions.

Many of the regulatory and protection functions of the EIS process are currently performed by the permit system; this currently applies only to stationary sources. Although not as complete or informative as the EIS process, the permit system can provide a large measure of environmental protection and should not be prematurely abandoned. As the EIS gains acceptability and working experience, the required permits should be incorporated into the review and approval process to avoid extra effort and duplication.

#### How and by Whom Should an EIS be Prepared?

As we have said, a satisfactory impact statement requires diverse backgrounds and subtle balancing and evaluation of non-quantitative as well as "hard" information. This makes it difficult to specify as prerequisites the optimal training or professional qualifications for the analysts who prepare these statements. We do, however, need some means of accrediting or screening persons involved in this critical task. A state roster of those whose work has been judged acceptable through the review process would help to discourage obviously unqualified persons and could guide and protect those clients looking for a reliable consultant.

The actual process of preparing an EIS could be greatly simplified by a regional system of environmental zoning. In this system, ecological features would be identified which are particularly vulnerable to disruption or unsuitable for certain types of development. Limits would be set on types and sizes of projects which would be judged environmentally acceptable without an impact statement; projects exceeding these limits would have to submit an EIS. New Jersey has already engaged in a type of environmental zoning by identifying the wetlands, flood hazard areas, and coastal zones as critical areas where development can be restricted by the state. A complete resource inventory of natural resources (such as aesthetic or historic features) is the first step toward a system of comprehensive environmental zoning. Such an inventory would serve two purposes: first, those areas that were critical with respect to one or more environmental aspects would be delineated and could receive special attention; secondly, in those cases where an EIS is required a major portion of the section of the statement describing the site would be already completed. These inventories should be performed by the offices of Environmental Review and

Analysis, with DEP, which should be appropriately staffed and funded by the permit fee mentioned later in this section.

The air quality effects of a proposed project are an important component of an impact statement. In assessing the pollution load of a particular facility or complex, it is not sufficient to analyze only "normal" operating conditions or a design average emission level. The worst case combination of meteorological conditions, peak emission generation, and attendant secondary effects must be included. Abnormal operating conditions such as construction, start-up, maintenance periods or below-capacity operations should also be considered. In addition to the type and amount of emissions, the air quality impact should consider current and proposed levels of emissions from surrounding sources.

A particularly difficult but important type of assessment concerns the air quality effects of complex sources such as shopping centers or amusement parks that generate large volumes of automobile traffic. In considering such facilities it is essential that the emissions generated by the attendant traffic and congestion, especially where imposed on an already crowded highway network, be included and evaluated as an environmental impact of the proposed project.

It is the applicant and not the reviewing agency which must bear the not inconsiderable burden of an EIS. This burden includes the cost and responsibilities of preparation and distribution of the statement as well as a permit fee to defray the administrative costs of processing and review. These costs can and should be kept to a minimum, particularly for less critical projects, but it is important that the reviewing agency remain separate from the preparation process.

#### How and by Whom should an EIS be Reviewed?

Most of the negative comments about Environmental Impact Statements were prompted by fears of a bureaucratic maze of overlapping agencies or departments, each with the possibility of delaying or vetoing an otherwise sound project. The Clean Air Council is sensitive to these fears, and recommends that the EIS review process be kept as simple and streamlined as possible. The approval of an EIS should be the responsibility of a single agency within the Department of Environmental Protection. Other departments should furnish guidelines or specific consultation where required, but approval authority should remain centralized. Where specific environmental permits are also required, this reviewing agency should be empowered to grant these permits when the EIS is approved. As previously stated, when permits must be issued by other agencies, DEP approval of the EIS should be a prerequisite.

One of the most valuable aspects of the EIS process is that of identifying potential interactions among multiple projects. Two separate projects may be planned for a region, each of which taken alone has a negligible effect on environmental quality. The additive effect of the two projects, however, might cause significant degradation. Conversely, projects could interact favorably. For example, waste heat from a power generator could become process heat for a commercial or agricultural facility. If such synergisms or interactions are to be identified in the review process, a regional approach will be necessary. A "running total" of projected impacts in each area should be kept. It is against these future conditions, not necessarily the present ones, that future projects must be evaluated.

A key element in the EIS review process is the public hearing. It should be held during the project planning phase, so that local reaction and conflicting interests can be incorporated in design and protection measures. The public hearing should not be held to tell the public what is proposed; these plans should be distributed beforehand so that the hearing officers have a chance to listen to comments and suggestions from the public.

A critical question that must be answered in the review process as it evolves is the extent to which forecasts of environmental <sup>effects</sup> should become binding requirements. In respect to some environmental factors, there is not sufficient predictive or monitoring capability to make such requirements fair or logical. For other factors, however, the state-of-the-art permits us to measure and control (at a cost) environmental parameters. In these latter areas the Council feels that an applicant's projected performance standards should become enforceable and binding. For example, the social or economic impact of a new factory complex is subject to such uncertainties or external factors that the prediction of such impacts should be in no way a promise or contract to be met. On the other hand, the noise level or stack emissions of such a plant are well within the control of the applicant, and the applicant's prediction of specific results should be a performance requirement. An EIS is more than the intent to use certain hardware, it is a contract to meet certain standards, and compliance can be determined by monitoring prior to and during construction of a project, as well as after the start of the operation.

The applicant is also entitled to expect a quick and reasonable consideration by the reviewing agency. A limit on time delay in approving a project would safeguard the applicant from a "pocket veto." A sequential review process would give approval authority over routine or small scale projects to regional or local agents, while major or appealed decisions could be decided at the state level. Incorporation of both these measures in the review process would help to safeguard the applicant against administrative injustice.

## SECTION III

OTHER RECOMMENDATIONS FROM THE CLEAN AIR COUNCIL

In the course of its public hearings, and during its normal activities throughout the past year, the Council has become aware of a few continuing problem areas. Although not specifically related to the topics discussed above, the Council uses the opportunity of this annual report to suggest that:

1. There should be an advisory body, analogous to the Clean Air Council, Noise Council, and similar bodies, which has the powers and purpose to consider and make recommendations on broader environmental issues. The recurring themes of regional planning approaches, comprehensive land-use control, and growth and economic policy which the Council heard during testimony this year have implications in water quality, solid waste management, and every other aspect of environmental protection. While attempting to consider and report on these issues, the Council feels that it is somewhat outside their stated purpose or accumulated experience to treat such matters with the care and experience they deserve.
2. There is presently no State program to deal with the public health aspects of environmental quality. There should be both funding and responsibility at the State level to collect and analyze data and make recommendations concerning the health aspects of pollutants. Such a program is essential to lend rationality and public credibility to proposed anti-pollution measures.

FOOTNOTES

All testimony refers to the tapes of the 1973 Clean Air Council Public Hearings, unless otherwise specified.

1. Testimony of C. Burke, New Jersey Public Interest Research Group.
2. Testimony of D. Webb, New Jersey Department of Transportation.
3. Testimony of J. Andrews, New Jersey Department of Transportation, (in 1972 Clean Air Council Report).
4. New Jersey Clean Air Council Annual Report, 1970, page 33.
5. New Jersey Clean Air Council Annual Report, 1972, page 34.
6. Evaluating Transportation Controls, Institute of Public Administration, page 2-1.
7. Testimony of F. W. Burr, Mayor of Teaneck.
8. Testimony of F. Reilly, Morris County Board of Public Transportation.
9. Options for Unclogging the Corridor State, prepared by the Institute for Public Transportation, 1973.
10. Testimony of Dr. Seymore Charles, Physicians for Automotive Safety.
11. Testimony of Diane Graves, Sierra Club (New Jersey Chapter).

## APPENDIX A

### BACKGROUND OF CLEAN AIR COUNCIL

The Clean Air Council was created in the New Jersey State Department of Health by the enactment of Titles 26: 2C-3.1 to 2C-3.3, which amended the Air Pollution Control Act of 1954.

Title 26: 2C-3.1 abolished the Air Pollution Control Commission and transferred its functions to the Department of Health. The Air Pollution Control Commission, functioning from 1954 to 1967, promulgated New Jersey Air Pollution Control Code Chapters I through VIII, which codes now are enforced by the Bureau of Air Pollution Control in the Department of Environmental Protection.

Title 26: 2C-3.2 established the 17 member Clean Air Council and prescribed its composition. The current members of the Clean Air Council are:

Irwin S. Zonis, Chairman

Roslyn Barbash, M.D.  
Samuel Brown, M.D.  
Richard D. Chumney  
Franklin W. Church, P.E.  
James W. Conlon, P.E.  
John Davidson  
Barbara Eisler  
Eugene P. Gillespie

Robert J. Haefeli, P.E.  
John P. Horton, Scd., P.E.  
John Kunze  
Raymond M. Manganelli, Ph.D.  
Samuel Perro  
James H. Rook  
Arthur R. Sypek  
Raymond A. Taylor, M.D.

Title 26:2C-3.3 sets forth the duties and powers of the Clean Air Council. The Council's basic function is to assist the State of New Jersey in the prevention and elimination of air pollution by reviewing the performance of the Department of Environmental Protection and by acting to stimulate public concern in air pollution matters. The Council's members are commissioned to investigate all aspects of New Jersey's Air Pollution Control Program and to report their findings and recommendations to the Commissioner of Environmental Protection.

The Clean Air Council held its first meeting in September, 1968. Since that time, the Council has been actively involved in carrying out its mandated functions. Accordingly, under Title 26:2C-3.3(h), which states that the Clean Air Council shall: "Hold public hearings at least once a year in regard to existing air pollution control statutes, codes, rules and regulations and upon the state of the art and technical capabilities and limitations in air pollution control and report its recommendations thereon to the commissioner...", public hearings have been held each year since 1969.





APPENDIX B

TESTIMONY SUBMITTED TO THE NEW JERSEY CLEAN AIR COUNCIL  
AT ITS 1973 PUBLIC HEARINGS

(in order of appearance)

May 2, 1973 County College of Morris

1. Physicians for Automotive Safety -- Dr. Seymore Charles
2. PATCO (Lindenwold Line) -- Mr. Robert Johnston
3. Teaneck (The West Shore Mayors) -- Mayor Frank Burr
4. Board of Public Transportation of Morris County --  
Mr. Frank Reilly
5. Board of Chosen Freeholders of Morris County --  
(Written statement)
6. Citizens for Conservation -- Mrs. Betty A. Little
7. Passaic River Coalition -- Mrs. Ella Fillippone
8. Upper Raritan Watershed Association -- Mr. Peter Larson
9. Dames & Moore, Inc., Consultants -- Mr. James Toto
10. Private Citizen -- Mr. Frank Pacheco
11. Chatham Conservation Commission -- Mr. Richard Davidson

May 9, 1973 Middlesex County College

1. Delaware-Raritan T.B. Association -- Mr. George L. Wasser
2. Central Railroad of New Jersey -- Mr. George Fuller
3. Citizens for Clean Air -- Mrs. Gordon Gibson
4. Rutgers University -- Dr. Genetelli
5. Princeton University Transportation Program --  
Dr. Alan Kornhauser
6. New Jersey Chamber of Commerce -- Mr. W. H. Roach
7. Stevens Institute -- Professor R. Kurylko

8. Division of State and Regional Plans ( Department of Community Affairs) -- Mr. Richard Binetsky
9. Sierra Club, New Jersey Chapter -- Mrs. Diane Graves
10. Trenton Bicyclist -- Mr. Robert Winchester
11. League of Women Voters -- Mrs. Elaine Rooney
12. Rutgers, Department of Urban Planning -- Mrs. Margaret Manhardt
13. New Jersey Motor Truck Assn. -- Mr. Thomas F. X. Foley
14. New Jersey Manufacturers Assn. -- Mr. Joseph Cordiano
15. New Jersey Citizens for Clean Air -- Mrs. June Eik
16. Piscataway Environmental Advisory Commission -- Mr. Robert Smith
17. Middlesex County Planning Board -- Mr. Robert Powell
18. Better Air for Bergen -- Mrs. Dorothy Fraser

May 16, 1973 Gloucester County College

1. New Jersey Department of Environmental Protection -- Mr. Al Guido
2. U. S. Environmental Protection Agency -- Mr. Sheldon Meyers
3. Delaware Valley Clean Air Council -- Mrs. Kaysi Farrell
4. Community Air Pollution Committee -- Mr. Paul W. Keiser  
(CAPCOM of Southern New Jersey)
5. T.B. Association of Southern New Jersey -- Mr. Matthew Custer
6. New Jersey Department of Transportation -- Mr. Douglas F. Webb
7. Jack McCormick and Associates - Dr. Jack McCormick
8. New Jersey Public Interest Research Group -- Mr. Chris Burke
9. Conservation and Environmental Studies Center -- Dr. Eugene Vivian

Also Submitted:

1. Citizens Conservation Council of Ocean County
2. Environmental Commission of Princeton Borough
3. American Association of University Women  
(New Jersey State Division)



#### ACKNOWLEDGEMENT

Professional technical support to the New Jersey Clean Air Council during its public hearings and in drafting this annual report was provided by Mr. Lynn . Anderson. Mr. Anderson, who is currently a candidate for the degree of Master of Public Affairs at the Woodrow Wilson School, Princeton University, has provided environmental consulting services to a variety of public and private organizations.

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