

# Smoke and Air Pollution

NEW YORK • NEW JERSEY

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A report by the

INTERSTATE SANITATION COMMISSION  
NEW YORK • NEW JERSEY • CONNECTICUT

*Summary and Recommendations*

February 1958

# Smoke and Air Pollution

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*A Report by the Interstate Sanitation Commission  
New York - New Jersey - Connecticut  
on a Study of Smoke and Air Pollution  
in the New York Metropolitan Area*

*February 1958*

INTERSTATE SANITATION COMMISSION • 10 COLUMBUS CIRCLE • NEW YORK 19, N. Y.

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**FOREWORD**

This booklet summarizes the results of a survey of smoke and air pollution in the States of New York and New Jersey conducted by the Interstate Sanitation Commission in 1956-57. It sets forth the principal findings of the survey and presents the Commission's recommendations concerning the abatement of interstate air pollution in the New York Metropolitan Area.

The material presented in this summary has been excerpted from the full report submitted by the Commission to the State Legislatures of New York and New Jersey on February 1, 1958.



**Interstate transport of air pollution: fumes from plant at Carteret, New Jersey, being carried across Arthur Kill to Staten Island, New York. (November 1957)**

## I.

# SUMMARY AND RECOMMENDATIONS

**A**IR POLLUTION in the New York-New Jersey Metropolitan Area is a great and growing problem, affecting millions of people. As population increases, the air pollution problem will increase. Pressure for the development of effective means of control is rising throughout the area.

Complaints of atmospheric pollution have been common for many years, particularly in the Staten Island-Manhattan-New Jersey section.

Residents of both New York and New Jersey have charged that pollution crosses state boundaries, harms human, animal and plant life, damages property, and interferes with the enjoyment of life.

Between 1952 and 1956 the New York State Legislature approved acts authorizing the Interstate Sanitation Commission to study smoke and air pollution in certain areas of New York and New Jersey. New Jersey passed similar laws in 1955 and 1956. Connecticut agreed to the study in 1955. Federal approval came in 1956, when Congress authorized the Commission to carry out the study.

### WHAT WAS DONE

The study was conducted in the summer and fall of 1957 by the Interstate Sanitation Commission, through agreement with the U. S. Public Health Service, and with the assistance of the U. S. Weather Bureau, the U. S. Army Chemical Corps and the U. S. Bureau of Standards.

Dr. Louis C. McCabe, one of the nation's leading authorities in the field of air pollution study and control, planned and directed the project

for the Commission. Mr. William H. Megonnell of the U. S. Public Health Service was in charge of work conducted by the Public Health Service.

In the course of the study three hearings were held to give the public an opportunity of expressing opinions. Previous surveys of air pollution conditions in the New York Metropolitan Area were reviewed, and current published and unpublished data on air contamination were obtained from the New York City Department of Air Pollution Control, the U. S. Public Health Service, and the New York and New Jersey State Departments of Health.

The Commission studied the extent and nature of pollution in the metropolitan area by:

Aerial reconnaissances and photography  
Surveys in the communities

Significant information was collected on:

Relationships of meteorology, visibility and pollution

Interstate movement of pollution as indicated by releasing tracer dust in one state and collecting it in the other

Amount of vehicle exhaust fumes and other organic materials in the air

Sulfur dioxide concentration on Staten Island, and ozone on Staten Island and in Carteret, N. J.

Effects of the polluted atmosphere on health, vegetation, materials and transportation.

A study and evaluation was made of existing laws in the States of New York, New Jersey and Connecticut, and other jurisdictions.

## WHAT THE STUDY SHOWED

While most pollution originates in or near the communities in which its effects are suffered, there is considerable transport across the state boundaries in both directions, depending on wind and weather conditions.

The sources of pollution in the area are many and varied, arising from industry, power production, heating, petroleum refining, vehicular traffic, incinerators, burning dumps, materials disposal and many other activities.

Pollution is an irritating nuisance for millions of inhabitants of the area, and in addition, brings about numerous more harmful effects.

Economic losses caused by air pollution in the New York-New Jersey Metropolitan Area are enormous. Pollution results in damage to buildings and structures, paint, finishes, textiles, vehicles, clothing, and many other items. Cleaning costs in the area are increased to a major extent by air pollution and its effects.

Health may be adversely affected, especially in persons liable to asthma and certain lung impairments. At least a suspicion exists that air pollution may be a contributor to the increase in lung cancer and some forms of heart disease.

Aircraft flights into and out of the New York-New Jersey Metropolitan Area are hampered by poor visibility brought about by air pollution. Pollution thus increases potential hazards at some of the world's largest and busiest airports.

## FINDINGS OF THE STUDY

In view of these conclusions, the Commission makes the following official findings:

1. Air pollution originating in regions of New York and New Jersey within the New York Metropolitan Area is interstate in character, affects public health and comfort adversely, and damages property.
2. While the control and abatement of air pollution at its sources is the primary obligation of the states, counties or municipalities in which it originates, the prob-

lems of interstate air pollution cannot be solved wholly by governmental agencies independently of one another.

3. The abatement of existing interstate air pollution and the control of future interstate air pollution is of prime importance to the persons living and industry located in the area affected thereby, and can best be accomplished through the cooperation of the states involved, by and through a common agency or instrumentality.
4. An interstate instrumentality, employing the administrative practices followed by the Interstate Sanitation Commission in the abatement of interstate water pollution, should be created to deal with the problems of interstate air pollution.
5. Drafts of proposed legislation to meet the situation described in this report should reflect fully the opinions and needs of many agencies, local governing bodies, members of the Legislatures, representatives of industry, and of the public.
6. There has been insufficient time between the completion of the study and the submission of this report to afford opportunity to interested agencies to express their views on the form which legislation to abate interstate air pollution should take.

## THE COMMISSION'S RECOMMENDATIONS

The Commission recommends:

1. That an interstate instrumentality, employing the administrative practices followed by the Interstate Sanitation Commission in the abatement of interstate water pollution, be established to deal with the problems of interstate air pollution.
2. That action be taken to enable the Interstate Sanitation Commission to continue until February 1, 1959, that phase of the

study which calls for the drafting of proposed legislation, in order to afford opportunity to interested agencies to express their views on the form which legislation to control interstate air pollution should take.

### THE AREA AFFECTED

Six counties of New Jersey (Bergen, Essex, Hudson, Middlesex, Passaic and Union) and the five counties comprising the City of New York (Bronx, Kings, Manhattan, Queens and Richmond) embrace the present core of the Metropolitan Area air pollution problem.

The Regional Plan Association estimates that this area, which in 1955 had a population of 11,460,000, will increase to 13,000,000 by 1975. The population of the City of New York



**Dirt is one of the costly effects of air pollution in the Metropolitan Area. Cleaning buildings, clothing, textiles, rugs, paint and other items costs millions of dollars annually. (New York Times photo)**

will increase an estimated 4 per cent in the 20-year period, while the six New Jersey counties will have 35 per cent more people in 1975 than at present. The 22 counties which the Association includes in the total Metropolitan Area will increase from 15,000,000 to 19,000,000, or 25 per cent, by 1975.

Intensively developed land in the Metropolitan Area will increase from 1,100 square miles to more than 1,800 square miles during this time, and population and employment will spill over into the less developed areas. This will extend the area of potentially heavy air pollution, and also the problems of control, to the outlying counties.

### WHAT'S IN THE AIR?

#### 1. Sootfall\*

The New York City Department of Air Pollution Control regularly collects data with respect to particulate matter in the atmosphere, based on dustfall samplings and dust counts, gaseous impurities in the atmosphere such as sulfur dioxide, hydrogen sulfide, nitrogen dioxide, oxidants, ozone, ammonia, aldehydes, carbon monoxide, and others.

Sootfall is highest in New York in January and February at the peak of the heating season. The monthly average in the five boroughs in 1956 was as follows:

<i>Sootfall Average 1956</i>	<i>Tons per square mile per month</i>
Manhattan	103
Brooklyn	67
Queens	58
Bronx	49
Staten Island	38

A study of dustfall in Perth Amboy in 1955 showed the average to be 200 tons per square mile per month. Similar data are not available throughout the Metropolitan Area, but the Com-

\*"Sootfall" is used synonymously with "dustfall" in this Report.

mission's survey showed heavy deposits of soot and ash on automobiles in several of the communities.

## 2. Sulfur Dioxide

Sulfur dioxide enters the atmosphere from petroleum refining, the use of coal and fuel oil in industrial and commercial processes and power plants, large municipal and refuse incinerators, and the many thousands of residential and apartment heating furnaces. When sulfur dioxide is discharged into the atmosphere, it oxidizes slowly to form sulfur trioxide and sulfuric acid.

The maximum concentrations of sulfur dioxide measured at stations of the Department of Air Pollution Control in New York City during the first seven months of 1957 are as follows:

	<i>Parts SO<sub>2</sub> per million parts of air</i>
Manhattan	
170 East 121st Street	2.0
Central Park—Belvedere Tower	1.2
West 93rd & Amsterdam Ave.	2.08
Bronx	0.56
Brooklyn	0.72

The Department discontinued sampling on Staten Island in 1956 due to a shortage of personnel, but in previous years, on two different days, 0.45 parts per million were found for extended periods. Higher values possibly would have been found for short periods if an instantaneous type of instrument had been available instead of the automatic sequence type of sampler.

During the Commission's study an automatic instrument of the instantaneous recording type was furnished by the Public Health Service for use on Staten Island. Two months of operation in the fall of 1957 showed that on eight days sulfur concentrations exceeded 1 part per million several times during the day. On three of these days the peak values exceeded 2 parts per million. On one day the concentration reached 3.2 parts per million.

Correlation of wind directions with the sulfur dioxide records from the automatic sampler showed that the pollution was transported across the Arthur Kill from New Jersey to Staten Island.

Further systematic measurement of oxides of sulfur over the entire Metropolitan Area under different weather conditions will be required before the significance and effects can be clearly understood.

However, it is known that few individuals find concentrations of sulfur dioxide under 5 parts per million objectionable, and concentrations of sulfur dioxide at 1 part per million are not detected by human beings. There is no good evidence that chronic exposure to concentrations below 5 parts per million of sulfur dioxide or occasional higher concentrations has any effect on healthy individuals. The effect of lower concentrations on the aged and those afflicted with circulatory or respiratory difficulties is not yet clear, but is being investigated by public health authorities.

Sulfur dioxide will injure sensitive plants when it exceeds 0.5 parts per million for several hours, and it is corrosive to stone and metals in any concentration. Sulfuric acid mist reduces visibility and causes fogs to persist.

In our present state of knowledge the cost of removal of sulfur dioxide from combustion gases is excessive and, in the absence of clearly demonstrated health effects, is rarely justified on economic grounds. However, in certain process operations that discharge very high concentrations of sulfur dioxide, it is possible, and may be necessary, to control stack discharges to prevent crop damage and discomfort to individuals.

## 3. Traffic Gases and Other Hydrocarbon Sources

The U. S. Bureau of Standards, at the Commission's request, took five samples of atmospheric pollutants in the Metropolitan Area by condensation in a vessel at  $-183^{\circ}\text{C}$  and ana-



lyzed them by mass spectrometric methods. Two of the samples were taken in Manhattan, one in Staten Island and one each in Newark and Bayonne, New Jersey. It was concluded from these that under the weather conditions prevailing at the time of sampling:

(a) The primary source of air pollution in gaseous form in Manhattan was motor vehicle traffic.

(b) There are many local sources of contamination in Newark which strongly affect pollution in the immediate vicinity, but the primary source at the point sampled was traffic gases.

(c) The air leaving the refinery area of Bayonne contains an unusually high concentration of various hydrocarbons.

(d) At the time of sampling, the air passing over Staten Island contained smaller amounts of organic matter than were found at other sampling points, but considering the distance from the nearest sources, the accumulated organic trash in the air was of considerable magnitude.

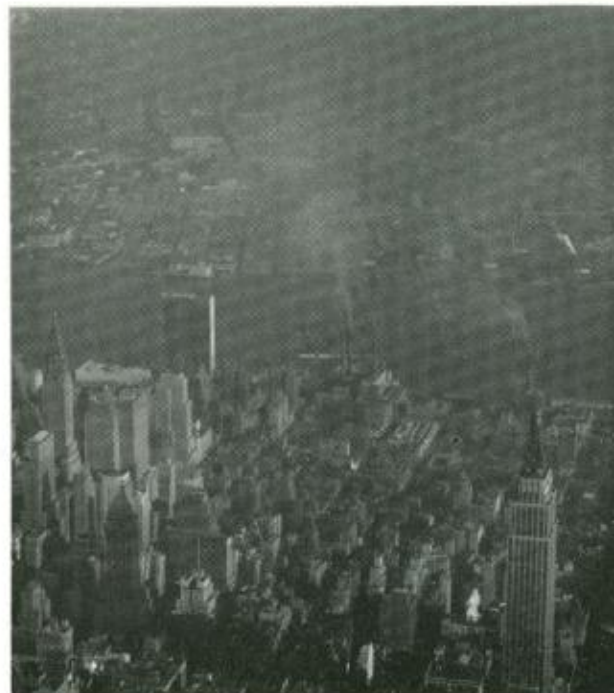
#### 4. Ozone, Nitrogen Oxides and Photochemical Products

The action of sunlight on gasoline or automobile exhausts, in the presence of oxides of nitrogen, forms ozone.

In view of the irritating properties of the products formed by this photochemical oxidation, ozone, hydrocarbons and nitrogen oxides are considered as potential irritants when they occur simultaneously in the air at low concentrations.

Ozone causes excessive cracking of rubber. The cracking of rubber under stress can therefore be used to measure ozone in the air.

Standard rubber strips exposed as part of the Commission's study on Staten Island and in Carteret, New Jersey, showed essentially the same depth of cracking. The ozone (oxidant) values determined in this way are available for 11 other cities, and those found at Staten Island and Carteret are exceeded only by those for Los Angeles, San Francisco and Silver Springs, Md.



Smoke and fly ash along the East River contribute to contamination of the air. (November 1957)

Ozone in low concentrations is toxic to individuals and to vegetation. Whether it exists in toxic quantities in Staten Island, Carteret and other areas of high hydrocarbon concentration could not be determined in the time and with the equipment available to the Commission.

#### EFFECTS OF AIR POLLUTION

Air pollutants have caused illness and mortality under acute conditions in several localities, and there is a substantial body of opinion among health officials in the New York-New Jersey Metropolitan Area that it now causes discomfort to residents there, and adversely affects their health.

If the World Health Organization definition is accepted, that "health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity," then air pollution clearly affects the health of the people.

However, the health consultants who advised the Commission on the possibility of illness from long-continued exposure to pollutants indicated



Cars, trucks and buses annoy residents near both ends of the Lincoln Tunnel with fumes and odors.

*(New York Times photo)*

that the following data, not now available, are required before definite conclusions can be reached as to the specific effects of air pollution on health in the Metropolitan Area:

1. The kinds and amounts of atmospheric contaminants present, regardless of their sources, and
2. The prevalence of various kinds of illness in the target community, compared with that of communities of comparable population characteristics but relatively free of air pollutants.

The time and resources available to the Commission have not been sufficient to obtain this information.

Motor vehicle fumes are often a source of public complaint, particularly from people living near vehicular tunnel crossings. Whether such exhaust fumes are merely a nuisance, or whether they play a role in the rising incidence

of pulmonary cancer, is not clear, and must await the outcome of investigations now in progress.

More than 86,000,000 vehicles traversed the tunnels and bridges of the Port of New York Authority in 1956. It is estimated that more than 500,000 gallons of unburned fuel is discharged from vehicles into the air daily in the Metropolitan Area. In sunlight these hydrocarbons are oxidized to form compounds which are irritating, and which contribute to the pall of pollution over the area.

Damage to truck and greenhouse crops has been experienced locally in past years in New York and New Jersey, but during its inspection in the area in 1957, the Commission's advisory committee on plant injury found no symptoms which could definitely be attributed to air pollutants.

However, sulfur dioxide concentrations re-

corded on the Commission's instrument, and indications of appreciable ozone concentration in Staten Island and Carteret later in the summer, point to the need for further investigation of the effects of gaseous contaminants on people and vegetation.

The more than 450,000 plane flights that originate or terminate in the three metropolitan airports each year are adversely affected by smoke and air pollution originating in the area. This traffic is expanding and will be further endangered unless effective control of pollution is forthcoming.

A study of minimum visibilities in relation to wind direction at LaGuardia Airport shows highest probability of smoke pollution during winter, when south-southeast to west winds are prevalent.

Records of restricted visibility kept by Weather Bureau personnel at Newark Airport during 1946 showed that the number of hours during which visibility was cut to 6 miles or less as a result of smoke alone, or smoke in combination with other obstructions, totaled 4,359 hours, just a fraction under half the total hours during the year.

## AIR POLLUTION AND THE LOCAL COMMUNITIES

The Interstate Sanitation Commission assigned two engineers in September and October 1957, to survey 15 cities in northeastern New Jersey and the five counties of New York City, to obtain information on the kinds and sources of air pollution in these communities, the reactions of local officials and citizens, and the general limits of the area affected by the pollution.

### New Jersey Study

In the New Jersey communities studied, it was found that:

1. Heavy and light industry often closely adjoins or has been encroached upon by residential areas. All these industries contribute to air pollution. Massive discharges from heavy industry are especially significant.

2. Power generating stations are large contributors of smoke and dust.

3. Heavy motor traffic throughout the area contributes to pollution.

4. Meteorological conditions often prevail which permit the plume of a stack to travel for miles without appreciable mixing with the air, so that when the plume comes to ground the area is fumigated with highly concentrated effluent.

5. Deposits of black soot and dust on automobiles is convincing evidence of excessive air contamination, particularly in the Newark, Harrison, Hoboken and Bayonne areas.

6. Not more than three or four of the cities can provide the technical staff necessary for reasonable control of pollution sources, and many of the communities are so small, and so dependent on their industry, that their efforts are ineffective.

7. Evidence of a transfer of air pollution from sources in New York City to communities in New Jersey was found in the following cases:

**Cliffside Park, N. J.** This community contains no major sources of air pollution, but such pollution nevertheless is a major problem. Local authorities say most of the sources are in Edgewater, N. J., but a significant portion originates in New York. Sources of pollution are evident on both sides of the Hudson River in this area, and the receiving area at any given time is determined by the wind direction.

**Jersey City, N. J.** In the opinion of the Health Officer, air pollution in Jersey City is an interstate problem, with New York and New Jersey alternately receiving and contributing pollution to the other state depending on the wind direction.

**Perth Amboy, N. J.** The Director of the Bureau of Air Pollution Control of Perth Amboy indicated that about six massive odor and fume episodes occur each year. Some originate outside the community, and one suspected source is Staten Island.

**West New York, N. J.** Smoke haze from New York City has been observed by local authorities to drift over West New York, when winds are from the east.

### New York Study

Observations resulting from the New York survey indicated that:

1. Apartment incinerators are a significant source of pollution, and the burning of some 200,000 scrapped automobiles each year creates massive smoke palls. The New York City Department of Air Pollution Control is collaborating with New York University in a U. S. Public Health Service-sponsored project for the development of improved apartment house incinerators.

2. Dense smoke was observed at several power stations and heavy sootfall was particularly noticeable at another.

3. In the Newtown Creek-Greenpoint area, heavy industry is responsible for excessive air pollution. Burning dumps and car burning are



Smoke and fly ash from thousands of apartment house incinerators add materially to Metropolitan Area pollution. (New York University photo)



More than 200,000 scrap automobiles are burned in the Metropolitan Area each year, contributing to Area-wide air pollution (July 1957).

other sources of pollution in Brooklyn. Under the stimulation of the Department of Air Pollution Control, progress is being made in the development of methods for smokeless burning of combustible materials from automobile bodies during scrap operations.

4. Dense automobile traffic is a significant source of air pollution, particularly in Manhattan.

5. Air pollution has been a cause for complaint on Staten Island for at least twenty years. There is evidence of property damage and concern on the part of the area's physicians as to the effects on health.

The Commission's survey of the Metropolitan Area and interviews with health officials indicated that the New Jersey sources of pollution contributing to the New York Metropolitan Area may be far more important than total populations or number of industries in the two areas would indicate. Observation of the extensive heavy industry in the New Jersey area offers ample evidence of mass contribution of airborne contaminants to the area-wide pollution.

The Health Officer of Richmond stated that there has been an air pollution problem in

Staten Island for many years, caused at least in part by heavy industry on the adjacent New Jersey shore.

The Richmond County Medical Society in 1951 resolved that the air pollution from neighboring communities was adversely affecting the health of the residents of the County.

While the Richmond Health Officer is of the opinion that statistical proof of adverse health effects is lacking, she has experienced and observed irritation of the eyes and nose as a result of air pollution in the area. She commented on periodic mass episodes involving nauseating and acid-like gases from the Bayonne or Elizabeth areas and foul odors from an oil refinery in the Perth Amboy area. She also stated that there have been periodic sootfalls on the Island believed to have been caused by sources in the New Jersey communities.

During the survey of Staten Island, two large sources of black smoke were observed in the Elizabeth-Linden area and one in the Bayonne area of New Jersey. One of these sources emitted black smoke in large volume for more than three hours. For part of the time, the plume came to the ground on Staten Island.

### **MEASURING INTERSTATE MOVEMENT OF POLLUTION**

Studies of the movement of air masses in the New York-New Jersey area through the use of tracers in the atmosphere have clearly demonstrated the interstate movement of air pollutants.

Tracer tests conducted in the Summer and Fall of 1957, through a joint agreement between the Interstate Sanitation Commission and the U. S. Public Health Service, assisted by the U. S. Weather Bureau and the U. S. Army Chemical Corps, showed that significant amounts of pollution from New Jersey pass through Staten Island within 6 feet of the ground, considered to be man's normal living zone; and that, similarly, contaminants are airborne from Manhattan to New Jersey.

A fluorescent tracer dust was used to investigate the transport of pollutants in both directions across the common boundary of the States of New Jersey and New York. In Phase I, the tracer material was diffused in New Jersey on a westerly wind and collected on Staten Island. In Phase II, the tracer was released in Manhattan on an easterly wind and collected in New Jersey. Transport of material across the interstate boundary in both directions was established.

These observations were verified by extensive aerial photography and by the use of a sulfur dioxide recorder.



**Dissemination of tracer material from top of truck to demonstrate interstate movement of pollution.  
(October 1957)**

Health officials also reported numerous examples of interstate transport of pollution, based on their own observations.

### **TOPOGRAPHY, CLIMATOLOGY AND METEOROLOGY**

The effects of air pollution in the Metropolitan Area are influenced in several ways by the lay of the ground, the winds, temperature inversion, the climate and the weather.

The topography of Greater New York is characterized mostly by low-lying land. However, some sections are of higher elevation and have a definite effect on weather and climate in the area, channeling or otherwise deflecting sea breezes, sea fogs, other meteorological phenomena and pollution.

On an annual basis, 52 per cent of the winds have a westerly component, 35 per cent have an easterly component, and the rest are distributed between north and south winds. In Summer the winds most often have a southerly component, with southwest winds prevailing; in Winter they vary from south of west in December to north of west in March.

Thus, the winds move freely during the seasons from one part of the area to another, and no portion of the region wholly escapes the effects of wind-borne air pollution arising at points that may be miles away.

When, in addition, a temperature inversion is present in the area, which occurs frequently in the fall and spring, smog and air contamination may be held near the surface for several hours, and up to a day or more, moving to and fro with the prevailing breeze.

The distribution of mean monthly precipitation along the shore areas of Greater New York is fairly even, with the greatest variation occurring inland in a northerly direction. Annual precipitation increases gradually from about 40 inches in southwestern Long Island to about 47 inches in the northern and western suburbs of the city.

A recent study of the effects of air pollution on precipitation and solar radiation has shown that atmospheric contamination in New York City reduces solar radiation by 11 per cent from October through March. The effects of contaminants on precipitation are not so clear, but one



Smog is held near the surface by an inversion layer in the New York Bay area. Note clear sky at top of picture, at base of the inversion layer. (November 1957)

test suggested a rise of 5 per cent in the frequency of small daily amounts of precipitation in the city compared with a suburban station.

## AGENCIES ACTIVE IN AIR POLLUTION CONTROL IN THE METROPOLITAN AREA

The New York City Department of Air Pollution Control began its activities in November, 1952, and has collected an impressive amount of information on air pollution in its laboratory in the intervening time. Enforcement of a comprehensive air pollution code is carried out in the five counties of the City of New York through a permit system and systematic inspection of sources of pollution.

The comprehensive data collected by the Department were made available to the Commission for use in this report. The availability of data, of course, is not an indication in itself that the City of New York contributes a greater amount of pollution to the Metropolitan Area than do other sections where comparable data are not now available.

The New Jersey Air Pollution Control Commission, under authority contained in the New Jersey Air Pollution Control Act (1954), has to date promulgated five chapters of a New Jersey Air Pollution Control Code. The first two chapters are definitions and the three succeeding chapters regulate:

1. Open burning (salvage and refuse), effective May 1, 1956
2. Smoke emission, effective January 1, 1958
3. Fly ash and solid fuel, effective July 1, 1958

The New Jersey State Department of Health carries out a technical program for the Control Commission under the 1954 act, but funds for this work are included in the budget of the State Department of Health. The budgets for the past three fiscal years and the forthcoming one for the two agencies operating in the Metropolitan

Area are as follows:

	1955-56	1956-57	1957-58	1958-59
New Jersey State				(Requested)
Dept. of Health	\$38,127	\$47,988	\$59,923	\$110,741
New York City				
Dept. of Air				
Pollution Control	522,991	608,525	689,005	(Not yet available)

## AIR POLLUTION LEGISLATION

Legislation to abate air pollution may be divided into two general classifications: (1) punitive ordinances which impose fines for violations, and (2) regulatory ordinances which seek to abate air pollution by preventing the discharge of contaminants.

For years many large cities have tried to solve their smoke problems by punitive laws. But now that the concept of air pollution is no longer confined to smoke, the trend of legislation is to attack the problem at its source, rather than to rely exclusively on punishment to abate nuisances.

Smoke still poses the most common air pollution problem facing cities, but gases, fumes, acids, and other industrial by-products, as well as automobile exhausts, are also recognized as substantial contributors. The discharge of all these contaminants is a matter for statutory regulation and control.

Nine states, including New York and New Jersey, have enacted legislation seeking to control and abate air pollution on a state-wide basis. The statutes of both New York and New Jersey are mandatory in nature.

In New Jersey the Air Pollution Control Commission is the legislative agency under the statutes, charged with promulgating codes, rules and regulations to abate and control air pollution. The State Department of Health is the agency charged with control of air pollution, in accordance with the rules and regulations promulgated by the Commission.

Under the New York statute, the Air Pollution Control Board is charged with promulgating codes, rules and regulations and enforcing them.

In New Jersey, some regulations to implement the statute have been adopted, while the New York statute provides that the Air Pollution Control Board's power to promulgate and enforce such regulations will not become effective until July 1, 1959.

The general purport of all the state-wide legislation enacted to date is to try to abate air pollution by controlling the source of the discharge. The maintenance and use of equipment capable of emitting contaminants is regulated by license or permit, and the regulations provide for the approval of plans for the construction and installation of such equipment as a prerequisite to a license. Failure to provide or maintain such equipment in accordance with the license is grounds for revoking the license and sealing the equipment.

## **GUIDES FOR PROPOSED LEGISLATION**

The problem of air pollution arising within one state and crossing its boundaries to the detriment of citizens of another state, and the abatement of such pollution, are considered by legal authorities to be proper subjects for interstate agreement between two or more states. These states, subject to Congress' consent, may create an administrative body empowered to deal with the problem, and to promulgate and enforce regulations to abate such pollution.

The Commission offers the following guides for consideration by interested groups in connection with proposed legislation to combat interstate air pollution:

1. That proposed legislation include a statement of the public policy of the signatory states to maintain a reasonable degree of purity of the air resources of the states.
2. That such legislation establish an interstate instrumentality, employing the ad-

ministrative practices followed by the Interstate Sanitation Commission in the abatement of water pollution, to deal with the problems of interstate air pollution.

3. That the area of jurisdiction of such instrumentality initially be the regions of New York and New Jersey within the New York Metropolitan Area, with the legislatures of the signatory states reserving authority to extend such area of jurisdiction upon the recommendation of the instrumentality when the need exists.
4. That such instrumentality be charged with the duty and provided with the authority:
  - a. To collect and disseminate information relating to air pollution, its prevention and control;
  - b. To act as coordinator between air pollution control agencies of the signatory states in the establishment by them of rules, regulations and standards for the control and abatement of interstate air pollution;
  - c. To conduct field studies and investigations related to air pollution as it may deem necessary or as specifically requested by local and regional control organizations, and to receive or initiate complaints concerning air pollution arising in adjoining communities;
  - d. To promulgate rules, regulations and standards, establish appeal or hearing procedures, issue appropriate orders, and enforce the same, reserving to local or regional air pollution control agencies and to state, county, municipal or other governing bodies, the power to promulgate rules, regulations and standards for the control and abatement of air pollution which are equal to or more stringent than those promulgated by such instrumentality.