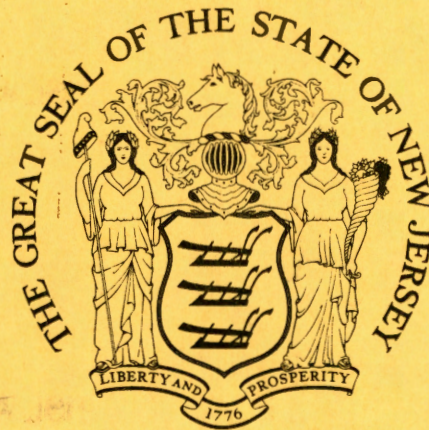


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ANTICIPATED CAPITAL NEEDS
FOR SEWERAGE FACILITIES
IN NEW JERSEY



NEW JERSEY STATE DEPARTMENT OF HEALTH

February 3, 1969

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ANTICIPATED CAPITAL NEEDS
FOR SEWERAGE FACILITIES
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NEW JERSEY STATE DEPARTMENT OF HEALTH
DIVISION OF CLEAN AIR AND WATER

Roscoe P. Kandle, M.D.
State Commissioner of Health

Richard J. Sullivan, Director
Division of Clean Air and Water

February 3, 1969

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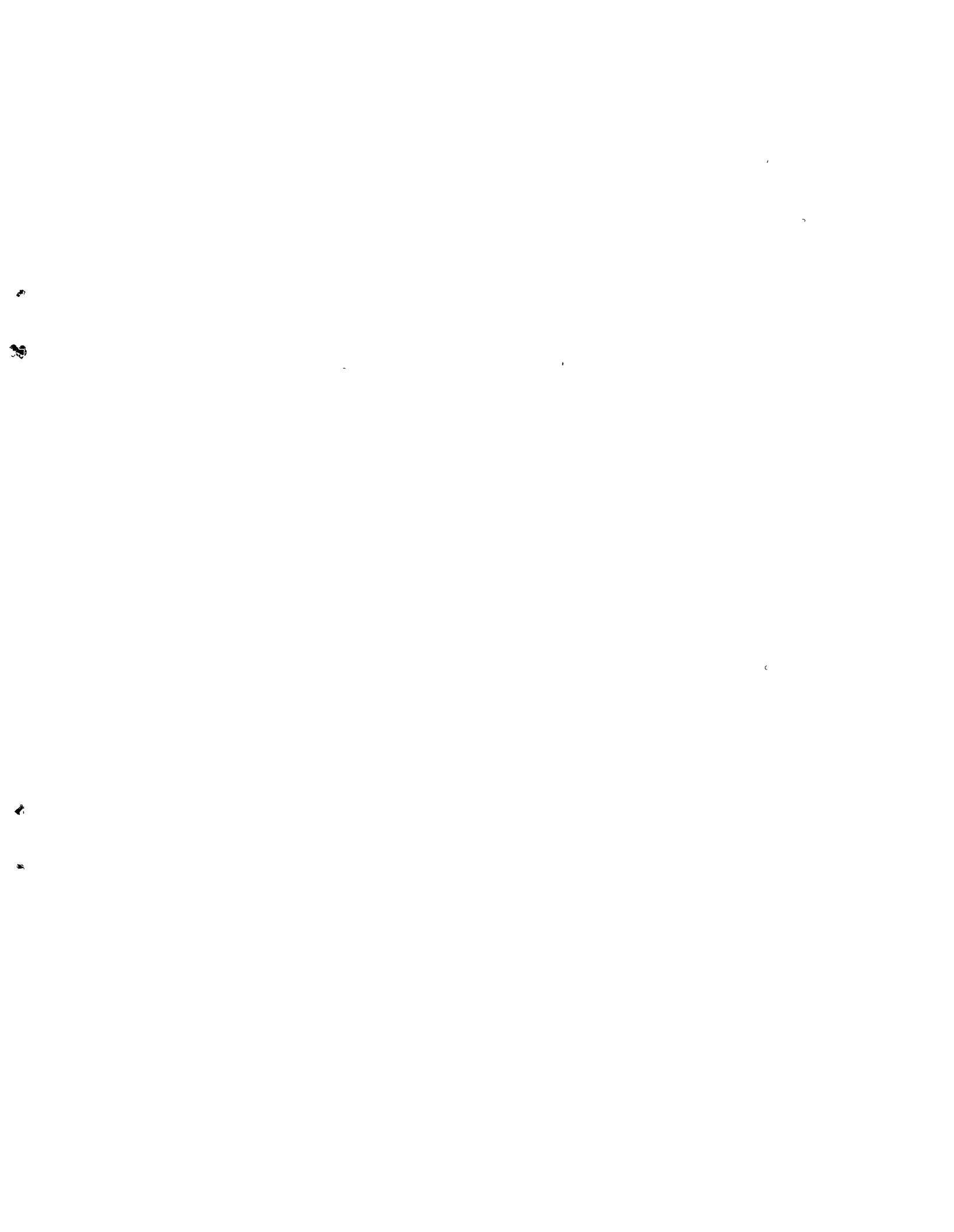
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A. INTRODUCTORY STATEMENT

Water Pollution

To say that New Jersey has a serious water pollution problem is to state the obvious. We state it nevertheless.

It is not a problem caused by a small number of indifferent polluters. It is the result of the growth of our communities having greatly outdistanced our pollution control efforts. Seven hundred fifty treatment plants put more than one billion gallons per day of inadequately treated sanitary and industrial wastes into our waterways. This is the essence of the problem. It is augmented by agricultural run-off, animal wastes, the use of insecticides, storm water run-off and transitory dumping, or pollution episodes.

As a consequence many of our bayshore beaches and the bays themselves have been lost to recreational uses, including inland waters bordering communities along the southern shore whose whole economy is water-oriented.

A number of our rivers, including the Passaic and the Raritan, are the receiving waters for inadequately treated wastes but must serve as well as the sources of public drinking water supplies.

Several of our largest lakes, whose entire development has

been based upon the use of the water for recreational purposes, are now threatened with pollution.

Seventy-nine thousand nine hundred fifteen acres of bay waters in the Raritan basin and along our southern coast have been closed to the harvesting of shellfish because the water has become so highly contaminated.

The use of private septic systems in some areas of our state where sewers are not available not only causes pollution of the ground and of nearby streams but contaminates wells which would otherwise be usable for drinking water supplies.

The continued disposition of partially treated wastes just off shore on our north Atlantic coast, if permitted to go uncorrected, may threaten the use of the surf waters themselves.

Industry which considers locating in New Jersey is surely influenced by the quality of our environment. For a so-called "wet" industry the quality of water available for use is often a crucial factor in deciding upon a new location.

In several places in our state in cases referred to below the courts have ordered that growth stop until adequate waste disposal facilities can be made available.

All of our major and most of our minor waterways now fail to meet the water quality standards established for them.

Remedies

In any discussion of water pollution control in New Jersey the three key words are enforcement, regionalization and costs-- in reverse order of importance.

Enforcement

The Division of Clean Air and Water of the State Department of Health is the agency in the state which has primary enforcement responsibility for water pollution control. We are committed to an unremitting enforcement program. The years of 1967 and 1968 have seen more enforcement activity than in any period in memory.

Water quality standards were defined with the aid and advice of the Division of Fish and Game and promulgated as our definitions of water quality objectives. After public hearing, all of the streams, rivers, bays, estuaries, and coastal waters of the state have been classified as to the water quality to be achieved. This means that the degree of water purity has been established for each waterway as an enforceable objective.

To cause these objectives to be met the state further promulgated regulations establishing the required degree of treatment of all waste entering any of these waterways. To achieve compliance with these regulations the Division has issued 236

administrative orders. These orders incorporate timetables for compliance. The recipients, which for the most part include municipalities, authorities and industries, are subject to the sanctions provided by statute if they fail to perform the necessary work in accordance with the schedule set forth.

In a series of recent court cases the state has demonstrated its willingness to litigate where its requirements are violated. In addition to Superior Court injunctions directing compliance with our orders the Division last year sought and obtained an unprecedented remedy. The state requested the court to order nine communities in Morris County to cease the issuance of building permits until adequate provisions can be made for the disposal of liquid waste. The same remedy was applied in the High Ridge Sewer Company case, in Washington Township in Gloucester County, and in the City of Bridgeton.

The Water Policy and Supply Council has augmented our enforcement policy by refusing to issue permits for water diversion unless the applicant can show that the ultimate disposition of the wastes generated will be in accordance with Health Department requirements.

Because the compliance schedules contained in extant administrative orders are not being met in many cases, in 1969 we expect to initiate a greater number of court actions.

While rigorous enforcement is surely necessary to the effective

administration of the statutes, to press those who are reluctant to move, and to deal with individual pollution problems it is not an adequate response to the problem. However unrelenting the enforcement it cannot by itself cause the state's needs to be met.

Regionalization

For many years in New Jersey the tradition was upheld that no community is complete without its own sewage treatment plant. Because sewage disposal was provided as needed as any other municipal service, treatment plants in New Jersey proliferated. There are now about 750 sewage treatment plants in this state. The proliferation is graphically shown by the map of our state presented as Plate No. 1.

By statute treatment plants cannot be constructed unless permits for them are approved by the State Department of Health. Until 1966 however the Department had no statutory authority to disapprove a treatment plant because it was non-regional. In 1966 the Legislature established as public policy the need to require the construction of sewage disposal facilities on the basis of drainage basins rather than municipal boundaries. Even in the absence of that statute several large regional facilities had already been constructed, such as the facility of the Passaic Valley Sewerage Commissioners, the Bergen County Sewer Authority, and the Middlesex County Sewerage Authority. In those cases logic

prevailed over custom, in the absence of statutory requirements for regionalization. For most of the State, however, this has not been the case.

All of the administrative orders issued to local government require that the construction of new facilities be in accordance with developed plans for regionalization. The Department's power to prohibit non-regional facilities was upheld in 1968 in a court challenge by a municipality.

In order to develop the engineering plans for regional treatment facilities the Legislature in 1966 authorized the State Health Department to make grants to cover the cost of engineering feasibility studies. At a cost of \$1.766 million the Department has funded such feasibility studies for almost all of the state's drainage basins. These studies are referred to in Table 4. There is still considerable reluctance in some parts of the state to accept regionalization. The advantages, however, are quite apparent: (a) as a rule, the larger the treatment facility the less the cost of construction and operation per capita, (b) more efficient and capable plant operation is attainable in large facilities. Such plants are able to hire qualified supervisory and operating personnel as well as to provide adequate laboratory controls. Many small plants are now operating without these necessities, (c) in order to meet the needs of growing New Jersey greater water re-use

will be employed. This will require highly sophisticated treatment which cannot be accomplished with anything less than the most capable maintenance and operation; (d) many of the existing treatment plants are focal points of local blight. Many of these were conditionally approved when they were built as interim facilities which must be abandoned when a regional system is within reach, (e) there is much more flexibility and stability in the operation of a large plant. This makes the plant able to absorb sudden changes in the characteristics of the wastes being treated. This capability is most necessary in the handling of wastes derived from a wide variety of industrial processes.

The map on Plate 2 shows the location of proposed regional treatment facilities in accordance with the plans developed by feasibility studies. A glance also at Plate 1 will show the extent to which the proposed regionalization will reduce the number of small plants now operating.

Costs

The Federal Water Pollution Control Act (P.L. 84-660) authorizes the Secretary of the Interior to make grants to any authorized agency to assist in the construction of interceptor sewers, wastewater treatment plants and outfall sewers. The Clean Water Restoration Act of 1966 (P.L. 89-753) amended the basic act by increasing the amount of Federal Grants if the states participate in the grant program.

The New Jersey State Legislature enacted the "State Public Sanitary Sewerage Facilities Assistance Act of 1965" which authorized State participation under the Clean Water Restoration Act of 1966 and appropriated State funds to assist in the construction of wastewater treatment disposal facilities. This legislation authorized the State Department of Health to award grants not to exceed 30% of the construction cost of water pollution control projects which qualify for Federal aid assistance under the "Federal Water Pollution Control Act."

The State legislature appropriated a total of \$5,798,200 for Fiscal Years 1968 and 1969 for State Construction Grants. These funds were apportioned in accordance with priorities established by the Department of Health to projects eligible for Federal aid. Ten projects were funded at a rate of 9.2% of the eligible construction cost from Fiscal Year 1968 funds and it is anticipated that ten projects will be funded at a rate of approximately 11% from Fiscal Year 1969 funds. (See Tables 1 and 2.)

Under the terms of the federal statute local government is eligible for 30% of the cost of construction of sewage treatment plants and trunk lines. This eligibility can be increased to 55% if the state provides the legal authority and the money to fund 25% of the cost of all such projects.

The state does have such legal authority in the 1965 Act listed above. In fact, however, neither the state nor the federal

government has appropriated funds in amounts representing more than a tiny fragment of the needs.

The four-year authorization contained in the federal funding statute would, in accordance with statutory formula, provide New Jersey a total of about \$109 million in aid or 12% of the costs described below. However, if the funds appropriated continue for the next two years at the level of the last two years federal aid will amount to less than 3% of the total needs described below.

To date federal and state aid funds that have actually been appropriated have been in such small amount as to have no measurable impact on the pollution control program.

In last year's statement of capital needs and again in this discussion the Department has made as careful an assessment as the facts would allow of the capital costs of constructing regional sewage treatment plants and trunk lines needed to serve the public, to correct pollution of our waterways, and to conform with the treatment regulations and administrative orders described above. Last year's estimates were presented in testimony before the Governor's Commission to Evaluate the Capital Needs of New Jersey. These estimates have now been updated.

The total estimated costs of all facilities now needed is \$906,000,000. The cutoff date in this estimate is 1 July 1967. Any project for which construction was begun prior to that date is

not included. This total therefore includes approximately \$53 million of eligible facilities which were partially funded by state grants in fiscal 1968 and 1969, almost all of which are now under construction. These projects are presented on Tables 1 and 2. It also includes an additional \$50 million of projects for which engineering plans are completed and approved by the Department and which have already been certified as eligible for federal and state aid.

The main list of needed facilities with a total cost of \$803 million is presented as Table 4. These projects have not advanced to construction plans; most have not even begun the engineering work which must precede construction.

The \$906 million total is the estimated cost of treatment plants, trunk lines and outfalls now needed in New Jersey and which are eligible under law for federal and state construction grants. The total does not include the cost of upgrading the treatment plant and conveyance systems of the Passaic Valley Sewerage Commissioners. No information of any kind is available to us as to the cost of that project. The Commissioners contend that separate legislation must be enacted to give them authority to raise construction funds. It should be noted, however, that the treatment plant in question is the largest in the state; it is under administrative order to meet existing requirements, and

has been taken to court by the Department for its failure to do so. That case is still pending. It is our guess that the cost of bringing these facilities into conformity with state law and Department requirements is in excess of \$100 million.

The total estimate in our 1968 statement of anticipated needs was \$762 million. Several comments should be made as to the reason for the increase of this number to the present estimate of \$906 million: (1) it is a year later and the list of needs is commensurately longer. The starting point in time is the same for last year's estimate, i.e. 1 July 1967. This date was selected because any project for which construction commences after that date which receives 25% state aid is eligible for the maximum 55% federal aid. Projects starting construction before that date are eligible for a maximum of 33% federal aid no matter whether the state participates or not; (2) projects have been added, such as sludge digesters for Middlesex County, and the bayshore outfall for Monmouth County which were not contemplated a year ago (3) the estimates in this report are a refinement of those presented last year. The refinement has been made possible by the completion of feasibility studies in the interim. The basis upon which all estimates are made in this report is set forth in Section C (4) construction costs have risen at a remarkable rate so as to make some of last year's estimates

obsolete. If the rise continues this year's estimate will prove conservative in the light of next year's construction costs. All estimates presented are in 1968 dollars.

As noted above the \$906 million is the assessment of the cost of eligible facilities. It will be necessary to accompany the construction of these eligible facilities with the construction of an estimated \$225 million of sewage collection systems which are not eligible for federal and state aid (there is some eligibility for limited federal aid for such collection systems from the federal Department of Housing and Urban Development and other federal agencies. There is no eligibility for aid from the principal funding agency: The Federal Water Pollution Control Administration, Department of the Interior.)

In our judgment it is wholly unrealistic to expect local government with the little federal aid now available to bear the enormous cost of constructing sewage facilities now needed.

To do so would place an unconscionable additional burden upon the property owner in the form of additional property taxes or use charges. Furthermore, in the concept of regionalization discussed above an area-wide problem is solved on an area basis. In many cases this means the construction of expensive trunk lines with sufficient capacity to serve upstream users when the need arises. It is unreasonable to expect those who now will

use the system to pay all by themselves for a waste disposal facility that will accommodate growth and development that has not yet arrived. The question, it seems to us, revolves around the proper distribution of the costs among local, state and federal government.

While the federal aid appropriations have been very small to date interest in water pollution control is high in the Congress and we have good reason to believe that the federal aid program will be extended beyond the current law's expiration date, 30 June 1971.

If the state funds all projects at a level not less than 25% it will assure its local government of maximum eligibility for federal funding now and in the future.

Furthermore, soon to be introduced in the Congress is a revised version of last year's S3206 which passed both Houses with some differences that could not be resolved in the short time remaining at the end of the session. This bill would augment federal grants with mortgage contracts between the federal government and local entities which construct eligible sewerage facilities. The form of the contract would be a guarantee that the federal government would pay a share of the amortization cost over a period not to exceed thirty years. This contract arrangement is designed to make up the difference between cash

appropriations and the federal law's authorizations in the alternative form of long-term payments of principal and interest.

It is our understanding through discussion with federal officials that this year's bill will call for the disposition of all such mortgage funds to the states in accordance with the following formula: 50% of all the money to states on the basis of population; the other 50% would be distributed only to those states that have the legal authority and the money to fund at least 25% of the costs of all eligible sewerage construction. New Jersey has the law but it does not have the money. If such a bill is enacted considerable sums of money will be lost to New Jersey if it does not provide funds of its own to underwrite at least 25% of eligible construction costs.

Under present New Jersey law the Department is authorized to lend to those responsible for the construction of sewerage facilities money to pay the costs of the engineering work which must precede construction. As a rule of thumb the cost of this engineering work is about 5-6% of the total cost of the project. The money is lent for three years without interest. If the loan extends beyond three years interest is charged at the rate of 2% per annum for the entire period of the loan. To date we have lent approximately \$5.3 million.

If the state moves ahead with a construction program of the

proportion needed, additional engineering loan appropriations must be made. Considering the likely time-table of construction, the amount of money involved and the likely rate of pay-back into the revolving fund it is our estimate that a \$20 million fund should suffice. The estimate is very difficult to make because of uncertainty as to the schedule of pay-back and because of uncertainty as to how many of those responsible for the projects will actually make application for such loans. The \$20 million figure is therefore an imprecise estimate.

It is not known what the source of these funds can be, whether through direct appropriation from the general treasury, or by some other means. If the State were to provide capital funds for construction grants the possibility could be considered of using the established capital fund as a source of either loans or advance grants for engineering costs. An impediment to the advanced grant concept is that it would require the initiation of a grant before the project has moved well enough along to qualify for a grant under present requirements.

Varying capital funding alternatives are available for consideration involving varying degrees of participation by the three levels of government. The alternatives as we see them are presented in Table 5, discussed in Table 6, and the costs to the state of each are summarized in Table 8.

Our recommendation concerning state funding is on the following page.

B. RECOMMENDATION

Almost as important as the amount of non-local aid for sewerage construction is the certainty of its availability. Elected and appointed local officials responsible for the construction of sewers and treatment plants are under great pressure to exhaust all possibilities of state and federal aid before imposing burdensome taxes or charges upon their constituents. Such an official who moves too early or too late, or without diligence, may find himself unemployed next time around. The current federal aid program since its inception has been filled with uncertainty. Unless we can somehow assure local government of a fixed amount of aid, and eligibility for additional aid should it become available later from the federal government, our ambitious program may continue to stand around with its hands in its pockets waiting for better days ahead.

Last year in our appearance before the Governor's Commission to Evaluate the Capital Needs of New Jersey, State Health Commissioner Roscoe P. Kandle and I recommended that the state finance 50% of the cost of eligible and necessary sewage disposal facilities. Under our recommendation half of this 50% would be the state's share of the construction cost, the other half would be money with which the state would pre-finance hoped-for federal assistance. To the extent to which the

federal government thereafter provided aid that money would reimburse the state's general treasury. In this manner local government would proceed to construct with the assurance that at least 50% aid would be available from the state, or the state and federal government in combination.

This remains our recommendation. It is presented as alternative funding plan number 5 in Table 5. The cost to the state would be about \$435 million less whatever federal grants may be appropriated.

If the judgment is made that however logical and equitable the 50% aid program may be, the amount of state funds required is simply too large to be supportable we would offer an alternative recommendation. The best alternative in our judgment is presented as number 4 in Table 5. This plan calls for 25% state aid. This was the recommendation made to the Governor by his Capital Needs Commission last year and in turn made by the Governor to the Legislature. This is the least percentage of state aid which can be afforded local government and still assure it of maximum eligibility for federal grants.


Under this proposal all eligible projects would get 25% state aid; eligible projects would receive 30% federal aid as far as appropriations would permit. Local government would provide 45% of the cost and receive from the Federal government an unsigned I.O.U. for 25% additional aid when and if federal appropriations will allow.

Under this funding plan the cost to the state would be about \$222 million. If even this amount is considered to be too high we would ask: Which of the projects on the attached list of needs should be scratched or deferred indefinitely? Which of these projects will we expect to proceed to construction without any state aid, and with reduced eligibility for federal aid?

What would happen if, for example, the Legislature decided to provide \$100 million for state sewerage aid? In our opinion within eighteen months this total amount would fully be committed to projects with the greatest readiness to move ahead. It would not be spent in that period but it would be committed. There would be no aid funds for almost two-thirds of the facilities now needed. As a result those projects would not even move to do the engineering planning for construction with no prospect of aid. Eighteen months after a referendum the Legislature would be back again faced with the same question that it faces today.

In our judgment all of these needed facilities will be built sooner or later. If it is later they will cost appreciably more and we will suffer the effects of their absence in the meantime.

If we are willing to make this substantial commitment of our financial resources, New Jersey's waterways can be made clean. If we are not willing they will continue to become more polluted; and all the legislation, enforcement, planning, research, and hand-wringing lamentations on the desecration of our environment, won't make any difference.


Richard J. Sullivan, Director
Division of Clean Air and Water

3 February 1969

C. VALIDITY OF COST ESTIMATES

The estimates provided in this statement were derived from one of the following sources: (1) comprehensive regional sewerage feasibility studies conducted by consulting engineering firms and financed by the State Department of Health; (2) engineering studies conducted by private or municipal engineers; and (3) engineering estimates by private or municipal engineers based upon final and detailed engineering plans. These estimates are based on 1968 dollars and no attempt was made to adjust the cost for normal inflation, or inflation of construction cost because of competition for services. When developing these estimates the Department did not consider such factors as the ability to pay or the time required to design and construct these facilities. The list represents the best estimates available of the current costs of all facilities now needed.

The Federal Water Pollution Control Administration's wastewater treatment plant construction cost index (Plate 3) for the New York area is made a part of this statement. It should be noted that the average construction cost index has risen sharply during the past year and particularly during the last six months. There is no way of predicting the exact effect this continuing rise will have on the estimates presented in this statement. We can say that the costs will in fact be much higher than these estimates based on our best engineering judgment at this point

in time and that the longer construction is postponed the higher the cost will be.

D. BASIS OF COST ESTIMATES

ATLANTIC COUNTY

The cost estimates for Atlantic County were established by a regional sewerage feasibility study financed by the State Department of Health. The study report was completed in April 1968 and was accepted by the Department for payment on October 9, 1968. The cost figures presented in the March 1, 1968 statement on "Anticipated Capital Needs" were based on preliminary estimates before the sewerage feasibility study was completed. Much of the construction of sewerage facilities is necessary to comply with orders issued by the Department.

BERGEN COUNTY

The cost estimates for Bergen County were established by engineering studies completed by consulting engineers for the Bergen County Sewer Authority, Northwest Bergen County Sewer Authority and the Borough of Edgewater.

A portion of the construction estimate presented in the 1968 "Anticipated Capital Needs" statement for the Bergen County Sewer Authority appears in Tables 1 and 2. The remainder of the estimate has been revised in accordance with completed engineering studies.

Additional costs for the Northwest Bergen County Sewer Authority appears on Table 1.

The Borough of Edgewater has been ordered by the Department to upgrade the wastewater treatment process to meet the State water quality standards. The estimate for the Borough of Edgewater is identified as an individual project because at this time a more accurate determination can be made of the cost of needed facilities. In the 1968 statement this project was included in the estimate for unlisted projects.

BURLINGTON COUNTY

The Burlington County estimate of the cost of providing needed sewerage facilities was developed as part of a regional sewerage feasibility study financed by the Department which is presently in the final stage of completion.

No estimate was identified for Burlington County in the 1968 statement because it was impossible at that time to evaluate the needs and arrive at even a preliminary estimate because of the lack of necessary information. The anticipated needs for Burlington County were included in the broad estimate for unlisted projects.

CAMDEN COUNTY

The cost estimates for Camden County were established by a regional feasibility study financed by the Department and reflects the cost of the sewerage facilities to serve the immediate needs of the county as outlined in the study report. A large proportion of the required construction is necessary to comply with orders issued by the Department. Date of Report: December 1967.

CAPE MAY COUNTY

A regional sewerage feasibility study financed by the Department for Cape May County is presently nearing completion. Enough information is available at this time to establish a firm estimate of the cost of needed sewerage facilities. This information was not available when the 1968 statement was prepared. The comprehensive study revealed a much greater need for sewerage facilities in Cape May County than was previously estimated due to the need to protect public health, the extensive recreational and shellfish harvesting areas and the need to comply with Departmental Orders.

ESSEX COUNTY

Almost all of the construction of sewerage facilities needed in Essex County will fall under the jurisdiction of the Passaic Valley Sewerage Commissioners which will be covered separately in this statement. However some construction is required in the Township of Cedar Grove and the Borough of Fairfield. These estimates are identified separately whereas they were lumped in the estimate for unlisted projects in last year's statement.

GLOUCESTER COUNTY

The cost estimates presented for Gloucester County are based upon a regional sewerage feasibility study financed by the Department and reflect the cost of those facilities which the Department believes are necessary at this time. Date of report: July 1967.

HUDSON COUNTY

The Hudson County estimates are broken down into several specific projects, some of which appeared in the 1968 statement. Since that time more definitive engineering estimates and studies have been made. The estimate for the City of Hoboken in last year's statement anticipated some construction which was later determined to be ineligible for federal and state grant participation. Therefore this estimate has been revised downward to reflect this change.

Projects for North Bergen Township, West New York and the City of Bayonne have been more clearly defined and these projects are listed as individual items in this statement. These projects were included in the estimate of unlisted projects in the 1968 statement.

HUNTERDON COUNTY

Engineering studies have been completed by engineers for the Raritan Township Municipal Utilities Authority which established the cost of regional facilities to serve Raritan Township and the Borough of Flemington. A regional feasibility study is presently being financed by the Department for the remainder of Hunterdon County. No costs are included here for the region under study.

MERCER COUNTY

The estimate for Mercer County comprises an updating of the East Windsor Municipal Utilities Authority estimate and the inclusion of the Ewing-Lawrence Sewerage Authority and Hamilton Township. These projects were included in last year's estimate for unlisted projects. However, studies have been completed to develop cost estimates since the preparation of the 1968 statement. Also included in the estimate for Mercer County is an expanded Stony Brook-Millstone River region which more than doubled the previous estimate for this region.

MIDDLESEX COUNTY

The cost estimate for the Middlesex County Sewerage Authority has been updated based on engineering estimates and includes sludge digestion facilities which will be required because of a recent decision of the federal government. The remainder of the estimate for Middlesex County is based upon recently completed

engineering studies and estimates and are now listed as individual projects. The latter were included in the estimate for unlisted projects in the 1968 estimate.

MONMOUTH COUNTY

The cost estimates for the Northeast Monmouth County Regional Sewerage Authority and the Middletown Township Sewerage Authority are listed on Tables 2 and 3 and do not appear on the comprehensive list. The Ocean Township Sewerage Authority project is not listed this year since the project was started before July 1, 1967 and is not eligible for further federal grant participation. The remainder of the Monmouth County estimate is based upon feasibility studies and engineering estimates that have been completed for the specific projects. The Bayshore Sewerage Authority project is now included in the listing.

MORRIS COUNTY

The Morris County comprehensive regional sewerage feasibility study financed by the Department was just completed in January 1969. This study provided the basis for establishing reliable cost estimates for needed sewerage facilities in Morris County.

The present estimate is significantly higher than that presented in the 1968 statement. The major portion of this increase has been caused by developments in the Rockaway valley involving the regional facilities operated by the City of Jersey City.

OCEAN COUNTY

The cost estimates for Ocean County are based upon a regional sewerage feasibility study financed by the Department and completed in December 1967. The report reflects the cost of those facilities which the Department feels are necessary at this time and to comply with Departmental Orders.

PASSAIC COUNTY

The southern portion of Passaic County is served by the Passaic Valley Sewerage Commissioners facilities. Cost estimates for needed construction for this area are not available. The "Comprehensive Report on Sewerage Facilities" for the Wanaque Valley Regional Sewerage Study Committee was completed in April 1968 and was not available when the cost estimate was developed

for the 1968 statement. The estimate presented in this statement more realistically covers the needs of this area.

A regional sewerage feasibility study has recently been initiated to study the needs for the remaining portion (Mid-Passaic Basin) of Passaic County. This study is being financed by the Department and has progressed to the point where only a preliminary estimate has been developed.

SALEM COUNTY

The estimates for Salem County have been developed by engineering studies performed for Penns Grove, Pennsville, and Upper Penns Neck.

SOMERSET COUNTY

The estimates for Somerset County were derived from engineering estimates developed by consulting engineering firms retained by the municipalities shown on the list.

SUSSEX COUNTY

The estimate for Sussex County includes an updating of the estimate for the Wallkill Valley Region. Just after the submission of the 1968 statement, the Sussex County regional sewerage feasibility study was completed and was used as the basis for the estimates for the remainder of Sussex County. This study was sponsored and paid for by the Department of Health.

UNION COUNTY

The estimates for Union County were derived from engineering studies and engineering estimates by consulting engineering firms employed by the sewerage authorities. The estimate for the Rahway Valley Sewerage Authority appears on Table 3.

WARREN COUNTY

The cost estimates for Warren County were developed by a regional sewerage feasibility study financed by the Department and completed in March 1968.

PASSAIC VALLEY SEWERAGE COMMISSIONERS

At the time the 1968 statement was prepared it was impossible

to develop an estimate with any validity for the cost of constructing needed facilities in the commissioners district.

In March 1967 the State Department of Health issued an order to the Passaic Valley Sewerage Commissioners which contained work performance schedules and included a requirement to complete studies and preliminary engineering by a specified date. The Passaic Valley Sewerage Commissioners failed to meet these schedules and were taken to court by the Department. In this action the Department's jurisdiction was contested. The court decision was favorable to the Department and the Commissioners filed an appeal in the Appellate Division of Superior Court. The case is pending.

It is still impossible to present a reliable estimate for these construction needs. Our guess is that the cost will be in excess of \$100 million.

E. EXPLANATION OF TABLES

TABLE 1

Table 1 is a listing of eligible projects that were certified for federal grants and were not under construction by June 30, 1967. These projects became eligible to participate in the State Construction Grant program which was initiated for fiscal year 1968.

There was sufficient funds in the State Construction Grant account to award grants of only 9.2% of the eligible construction cost instead of grants "not exceeding 30%" allowable under the "State Public Sanitary Sewerage Facilities Assistance Act of 1965" as amended February 1967. It will require additional funds of \$4,334,576 to raise these grants up to 25% as was originally intended.

TABLE 2

Table 2 is a listing of eligible projects which have been certified for federal grants and which can be funded during the present fiscal year. The eligible cost figures for these projects are not firm at this time since the federal authorities have not completed the review of all the listed projects. It is very likely that some of these figures will change. However, based on the stated figures there are sufficient state funds available to award state construction grants amounting to approximately 11% of the eligible cost. Additional funds amounting to \$3,557,637 will be required to raise these grants to 25% of the eligible construction costs.

TABLE 3

Table 3 is a listing of all projects which have been certified for federal grants under the reimbursable provisions of the Federal Water Pollution Control Act as amended by the Clean Water Restoration Act of 1966. Funds have not been obligated to any of these projects and the eligible cost figures are engineering estimates based upon final detailed engineering plans. It will require funds amounting to approximately \$12,700,000 to provide state grants of 25% of the eligible construction costs. It is very likely the eligible costs of these projects will increase when construction bids are received.

In summary the amount of money needed to provide 25% grants to all the projects listed on Table 3 and to raise the grants of those projects listed on Tables 1 and 2 to 25% will require approximately \$20,555,000.

TABLE 4

This Table sets forth estimates of costs of eligible needed facilities not including those listed in Tables 1 - 3.

FINANCING ALTERNATIVES

TABLE 5

There are several alternatives for providing the funds needed for construction of needed waste treatment and disposal facilities: (1) financing 33% by the federal government and 67% by the local agency with non-participation by the state; (2) if the state provides 30% of the project funds, the federal government can provide 44% leaving the local agency to raise 26% of the project funds; (3) if the state provides 25% of the eligible construction cost, the federal government can contribute 55% leaving the local agencies to raise 20%; (4) if the state provides 25% grants and prefinances an additional 25% for federal government's share leaving 30% to be financed by federal grants and 20% from the local agency; and (5) if the state contributes 25% construction grants and if all applicants agree to accept 30% federal grants (instead of the 55% for which they would be eligible) then this will leave 45% of the construction cost to be raised by the local agencies.

The allocation to each state of federal construction grant funds is based on a fixed statutory formula and not based on the total needs of the state. (See Table 6.) However, even if the federal government provides New Jersey with its full allocation of funds and with state participation it will be impossible to generate enough construction activity to meet New Jersey's needs for sewerage facilities. It is therefore necessary for the State to fund sewerage projects independently of federal grants or prefinance a portion of the federal government's share of construction grants with the possibility of being reimbursed by the federal government in future years.

FINANCIAL SUMMARY

It is obvious from Table 5 that without state participation

it will be totally impossible for local agencies to raise the money necessary to provide the needed sewerage facilities even with federal participation. Either of alternates 2 and 3 would be feasible providing the federal government appropriates sufficient funds. However this is doubtful when a review is made of Table 7. There is no way of predicting at this time just how much federal grant money will be available in future years. If the present trend continues the federal government will appropriate only a small percentage of the authorized funds.

Alternates 3, 4 and 5 appear to be the only logical alternatives at this time. It may be possible to modify alternative 4 to fit the actual financial situations by prefinancing smaller federal grants thus allowing greater coverage with the federal money and requiring a larger contribution from the local agency. Under the provisions of the Federal Water Pollution Control Act as amended an applicant receiving a 25% state construction grant is automatically eligible to receive a 55% federal construction grant providing the state has water quality standards approved by the federal government and the proposed facilities are of a regional nature. These two requirements are met in New Jersey.

Under alternative 5 it will be necessary for the local agency to express its acceptance of a 30% federal construction grant and accept eligibility for the additional 25% which it may receive in the future if Federal appropriations are sufficient. This arrangement would permit spreading the limited Federal funds over a larger number of projects.

TABLE 6

This Table summarizes state funds needed for construction of sewerage facilities eligible for financial aid for alternative funding plans.

TABLE 7

This Table sets forth the New Jersey share of authorized and appropriated Federal funds.

TABLE 8

This Table summarizes all cost estimates.

TABLE 1

Sewerage Projects Receiving State Construction Grants
from 1968 Fiscal Year Funds

	<u>Eligible Construction Cost</u>	<u>Amount of State Grant+</u>
Borough of Allentown	\$ 339,100	\$ 31,200
City of Plainfield	586,400	53,948
Township of Warren	482,200	44,362
Borough of Hillsdale	620,300	57,067
Town of Clinton	881,500	81,098
Middlesex County Sewerage Authority	5,458,400	502,172
Township of Hamilton	4,132,000	380,144
Borough of Fair Lawn	1,583,200	145,654
Borough of Caldwell	471,400	43,368
Northwest Bergen County Sewer Authority	<u>12,660,000</u>	<u>1,130,036</u>
TOTAL	\$27,214,500	\$2,469,049*
Total Eligible Cost =	\$27,214,500	
25% of Eligible Cost =	6,803,625	
*Amount of State Grants =	<u>2,469,049</u>	
Additional State Money needed to raise grants to 25% =	\$ 4,334,576	

+ Grants amount to 9.2% of the eligible construction cost.

* This figure does not include a grant of \$427,758 to the Netcong-Musconetcong Sewerage Authority.

TABLE 2

Sewerage Projects Due to Receive State Construction
Grants from Fiscal 1969 Funds

	<u>Eligible Construction Cost</u>	<u>Am't. of State Grants*</u>
Bergen County Sewer Authority	\$ 3,039,000	\$ 341,188
Montville Twp. Municipal Utilities Authority	1,327,000	148,982
Bridgewater Twp. Sewerage Authority	1,934,000	217,130
Township of Roxbury	1,391,000	156,167
Town of Phillipburg	47,500	5,333
Ewing-Lawrence Sewerage Authority	426,000	47,827
Madison-Chatham Joint Meeting	2,450,000	275,061
East Windsor Twp. Municipal Utilities Authority	249,000	27,955
Pompton Lakes Municipal Utilities Authority	475,000	53,328
Northeast Monmouth County Regional Sewerage Authority	<u>14,492,000</u>	<u>1,627,017</u>
TOTAL	\$25,830,500	\$2,899,988
Total Eligible Cost	= \$25,830,500	
25% of Eligible Cost	= 6,457,625	
State Funds to be obligated	= <u>2,899,988</u>	
Additional State funds needed to raise State grants to 25%	= \$3,557,637	

*State grants amount to approximately 11% of the eligible construction cost estimates.

TABLE 3

Projects Certified for Federal Grants (reimbursable)
For Which No Grant Funds Have Been Obligated

	<u>Estimated Eligible Cost</u>
Bergen County Sewer Authority	\$ 1,950,000
Dover Township Sewerage Authority	14,433,000
Lower Township Municipal Utilities Authority	2,098,000
Bergen County Sewer Authority	1,300,000
City of Millville	2,750,000
Carlstadt Sewerage Authority	736,200
Middletown Township Sewerage Authority	11,113,000
Bergen County Sewer Authority	1,355,000
City of Summit	216,700
Borough of Fair Lawn	100,500
Rahway Valley Sewerage Authority	10,800,000
Hackettstown Municipal Utilities Authority	2,500,000
Borough of Fairfield	212,400
Borough of Allendale	<u>283,100</u>
TOTAL	\$49,847,900

25% of Eligible Cost = \$12,662,000

TABLE 4

Itemized Costs of Needed Eligible Facilities

ATLANTIC COUNTY

Atlantic Coastal Region	\$ 29,350,000	
Great Egg Harbor River Region	2,283,000	
Mullica River Region	<u>947,000</u>	
	\$ 32,580,000	\$32,580,000

BERGEN COUNTY

Bergen County Sewer Authority Area	\$ 39,200,000	
Northwest Bergen Co. Sewer Authority		
Mahwah-Ramsey Area	2,500,000	
Oakland Borough	4,000,000	
Edgewater Borough	<u>2,200,000</u>	
	\$ 47,900,000	80,480,000

BURLINGTON COUNTY

<u>30,000,000</u>	\$110,480,000
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CAMDEN COUNTY

Camden County Sewerage Authority		
Cooper River Region	7,400,000	
Big Timber Creek Region	15,800,000	
Pennsauken Creek Region	1,600,000	
Delaware River Region	<u>28,300,000</u>	
	53,100,000	\$163,580,000

CAPE MAY COUNTY

Lower Region	20,800,000	
Middle Region	11,460,000	
Dennis Creek Region	1,350,000	
Tuckahoe River Region	650,000	
Upper Region	<u>9,140,000</u>	
	43,400,000	\$206,980,000

ESSEX COUNTY

Cedar Grove	\$ 500,000	
Fairfield	380,000	
	<u>880,000</u>	\$207,860,000

GLOUCESTER COUNTY

Gloucester County Sewerage Authority		
Consolidated Region	20,000,000	
Maurice River Region	2,100,000	
Raccoon Creek Region	200,000	
	<u>22,300,000</u>	\$230,160,000

HUDSON COUNTY

City of Hoboken	10,500,000	
Jersey City Sewerage Authority	33,000,000	
Bayonne City	7,000,000	
North Bergen Township	7,500,000	
Town of Secaucus	5,700,000	
Town of West New York	5,500,000	
	<u>69,200,000</u>	\$299,360,000

HUNTERDON COUNTY

Raritan Township Municipal Utilities Authority	<u>1,000,000</u>	\$300,360,000
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MERCER COUNTY

Ewing-Lawrence Sewerage Authority	10,000,000	
Hamilton Township	10,400,000	
Stony Brook-Millstone River Region	27,000,000	
East Windsor Township Municipal Utilities Authority	3,000,000	
	<u>50,400,000</u>	\$350,760,000

MIDDLESEX COUNTY

Middlesex County Sewerage Authority	\$125,000,000	
City of Perth Amboy	3,500,000	
City of South Amboy	2,000,000	
Woodbridge Township	6,500,000	
Madison Township Sewerage Authority	1,000,000	
Borough of Carteret	3,000,000	
Borough of Sayreville	2,500,000	
Edison Township	6,000,000	
	<u>\$149,500,000</u>	
		\$500,260,000

MONMOUTH COUNTY

Atlantic Highlands-Highlands Area	\$ 2,100,000	
Bayshore Ocean Outfall	12,000,000	
Borough of Union Beach	3,500,000	
Hazlet Township Sewerage Authority	5,000,000	
Neptune Township Region	3,500,000	
Long Branch Sewerage Authority	3,000,000	
Wall Township		
Northern Region	4,100,000	
Southern Region	3,300,000	
Manasquan Region	7,500,000	
	<u>44,000,000</u>	
		\$544,260,000

MORRIS COUNTY

Whippany Watershed	3,000,000	
Rockaway Watershed	30,000,000	
Pompton-Pequannock Watershed	9,000,000	
	<u>42,000,000</u>	
		\$586,260,000

OCEAN COUNTY

Metedeconk Region (Inc. part of Monmouth County)	25,200,000	
Toms River Region	26,140,000	
Forked River-Cedar Creek Region	13,970,000	
Mill Creek Region	15,340,000	
Southern Ocean County Region	11,850,000	
	<u>92,500,000</u>	
		\$678,760,000

PASSAIC COUNTY

Mid-Passaic Basin	\$ 15,600,000	
Wanaque Valley Region	<u>23,500,000</u>	
	39,100,000	\$717,860,000

SALEM COUNTY

Pennsgrove, Upper Penns Neck Township	1,000,000	
Pennsville Township	<u>700,000</u>	
	1,700,000	\$719,560,000

SOMERSET COUNTY

Bridgewater Township Sewerage Authority	5,000,000	
Somerset-Raritan Valley Sewerage Authority	3,000,000	
Montgomery Township	300,000	
Manville Borough	300,000	
Warren Township	<u>2,000,000</u>	
	10,600,000	\$730,160,000

SUSSEX COUNTY

Wallkill Valley Region	12,500,000	
Musconetcong-Lake Hopatcong Region (incl. part of Morris County)	<u>30,000,000</u>	
	42,500,000	\$772,660,000

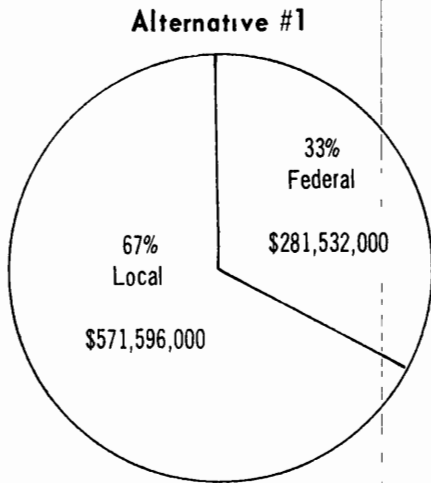
UNION COUNTY

Linden-Roselle Sewerage Authority	6,500,000	
Elizabeth Joint Meeting (incl. part of Essex County)	<u>20,000,000</u>	
	26,500,000	\$799,160,000

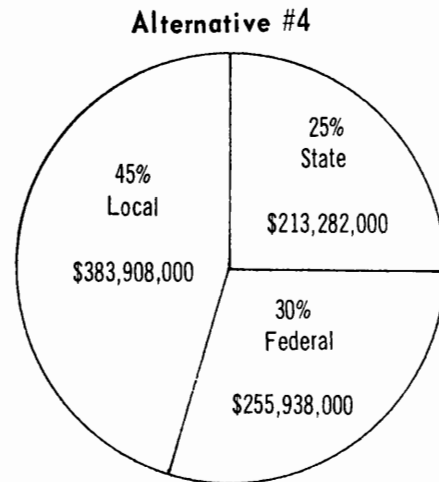
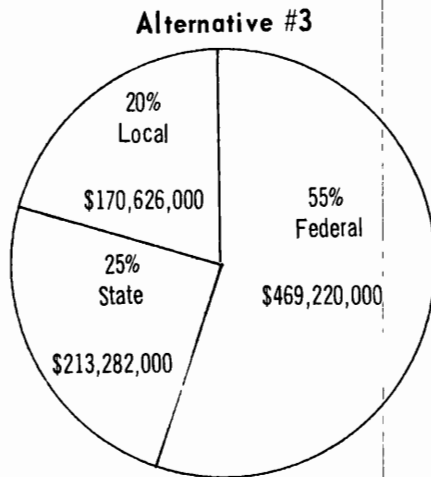
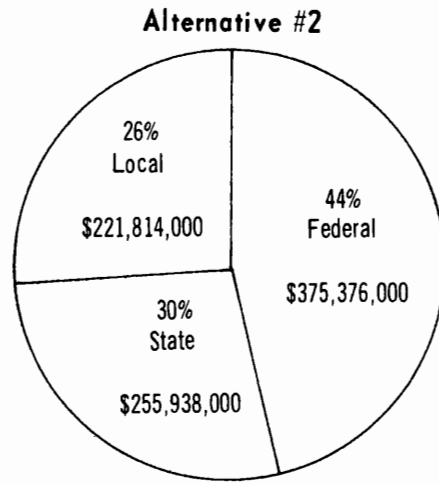
WARREN COUNTY

Belvidere Region	1,800,000	
Phillipsburg Complex	1,200,000	
Blairstown Area	<u>1,120,000</u>	
	\$4,120,000	
GRAND TOTAL		\$803,280,000

Table 5
ALTERNATIVE FUNDING PLANS
 Total Cost - \$853,128,000



State not participating



Alternative #5

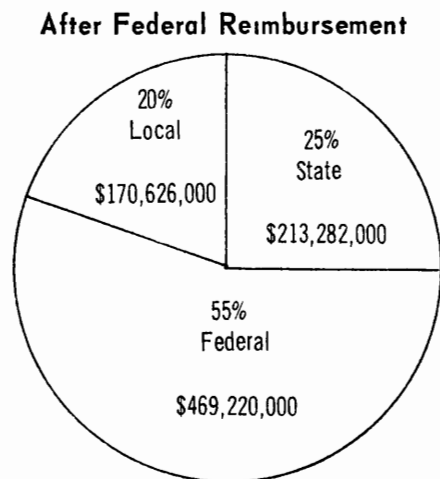
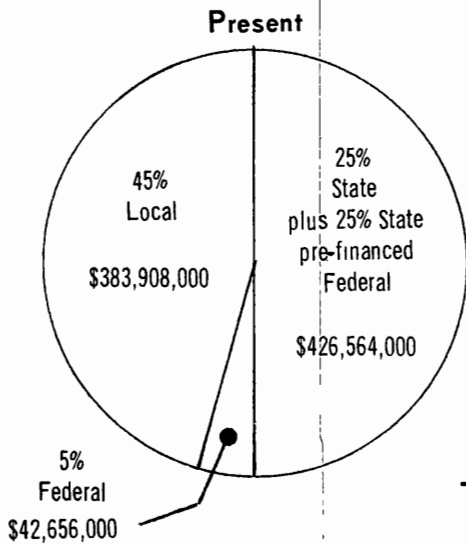


TABLE 6

Summary of State Funds Needed for Construction of Sewerage Facilities
Eligible for Financial Aid for Alternative Funding Plans

Alternative 1	\$0.0
Alternative 2	\$255,938,000
Table 1	4,335,000
Table 2	<u>3,558,000</u>
TOTAL	\$263,831,000
Alternative 3	\$213,282,000
Table 1	4,335,000
Table 2	<u>3,558,000</u>
TOTAL	\$221,175,000
Alternative 4	\$213,282,000
Table 1	4,335,000
Table 2	<u>3,558,000</u>
TOTAL	\$221,175,000
Alternative 5	\$426,564,000
Table 1	4,335,000
Table 2	<u>3,558,000</u>
TOTAL	\$434,457,000

TABLE 7

Federal Construction Grant Funds
Authorized and Appropriated for New Jersey

<u>Fiscal Year</u>	<u>Federal Funds Authorized for New Jersey</u>	<u>Federal Funds Appropriated for New Jersey</u>
1967 - 1968	\$14,040,400	\$5,790,000
1968 - 1969	22,384,400	6,171,100
1969 - 1970	32,397,200	?
1970 - 1971	40,397,200	?

TABLE 8

Summary of Cost Estimates, Sewerage
Construction in New Jersey

All estimates are based on 1968 construction dollars

1. The cost of trunk lines and treatment plants eligible to receive federal and state aid and now required to conform with the statutes, regulations and orders enforced by the State Department of Health.

Facilities already partially funded - Tables 1 and 2	\$ 53,045,000
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Certified facilities, not funded - Table 3	49,848,000
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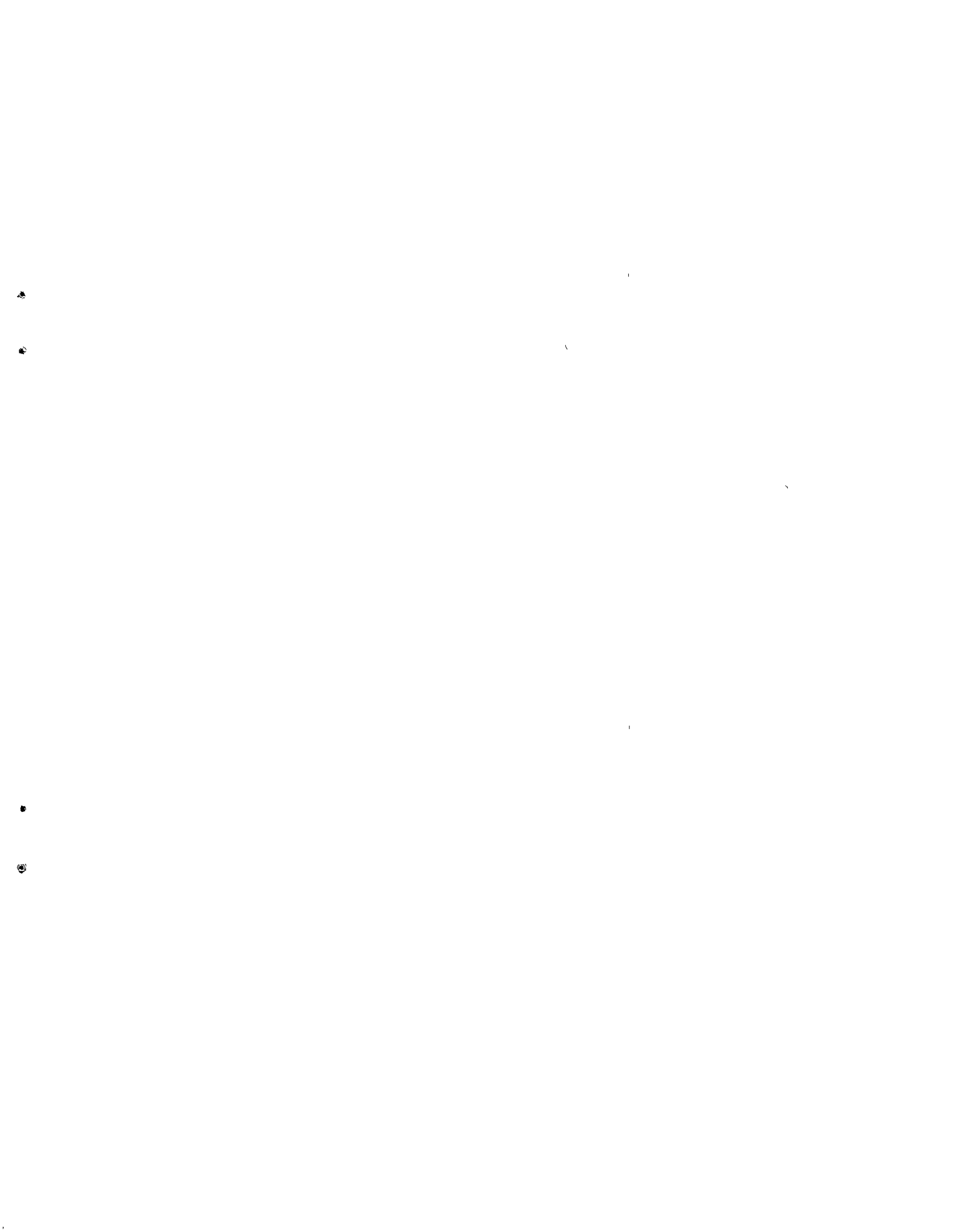
All other needed facilities - Table 4	<u>803,280,000</u>
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TOTAL	\$906,173,000
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(Passaic Valley Sewerage Commissioners needs not included)

2. Local collection systems which will be built to accompany facilities described in Number 1 above and which are ineligible for state aid and for federal aid from Federal Water Pollution Control Administration. These systems may be eligible for limited aid from Department of Housing and Urban Development and other Federal agencies.

\$225,000,000



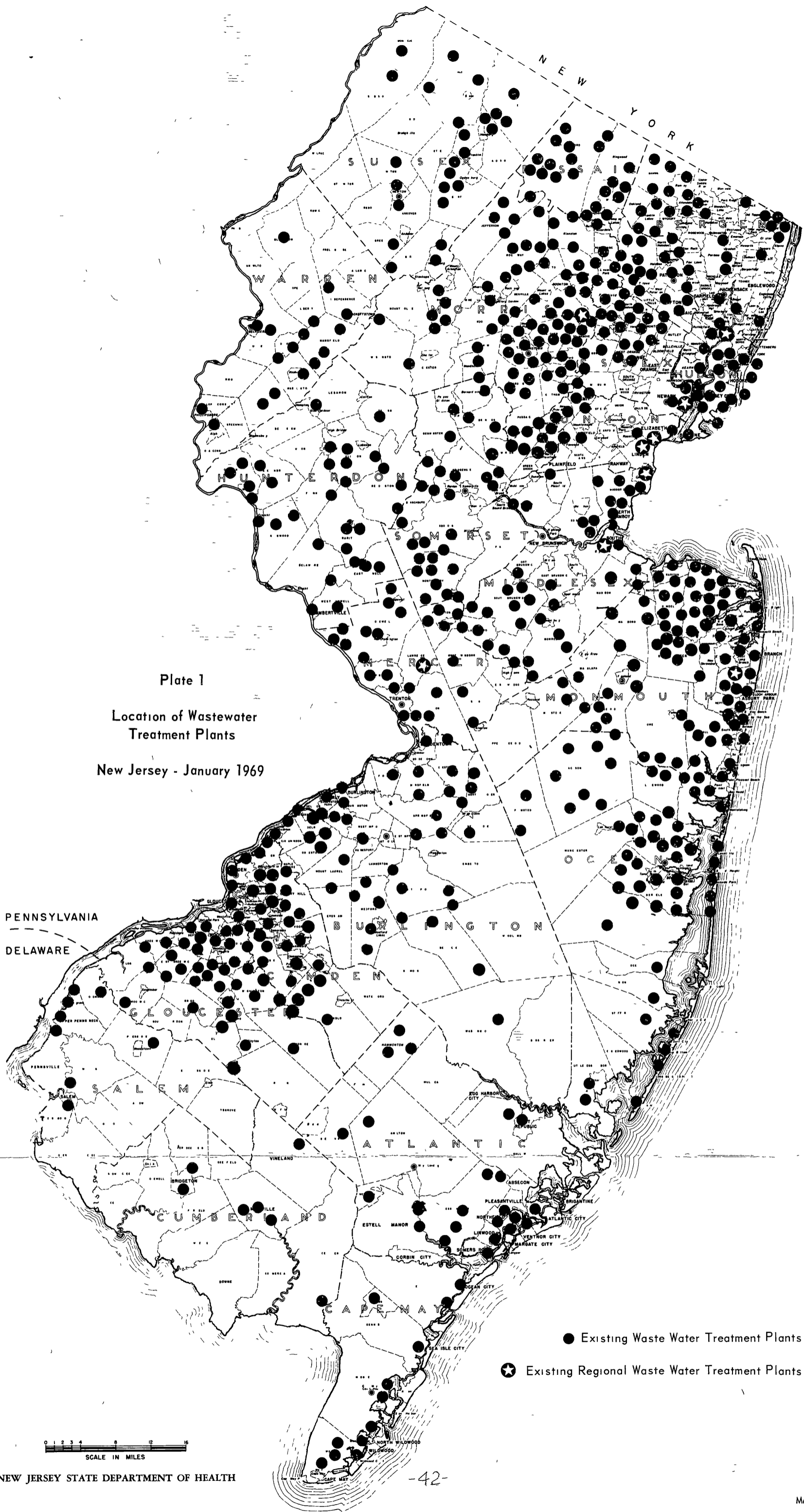


Plate 1

Location of Wastewater Treatment Plants

New Jersey - January 1969

PENNSYLVANIA
DELAWARE

- Existing Waste Water Treatment Plants
- ★ Existing Regional Waste Water Treatment Plants

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
SCALE IN MILES

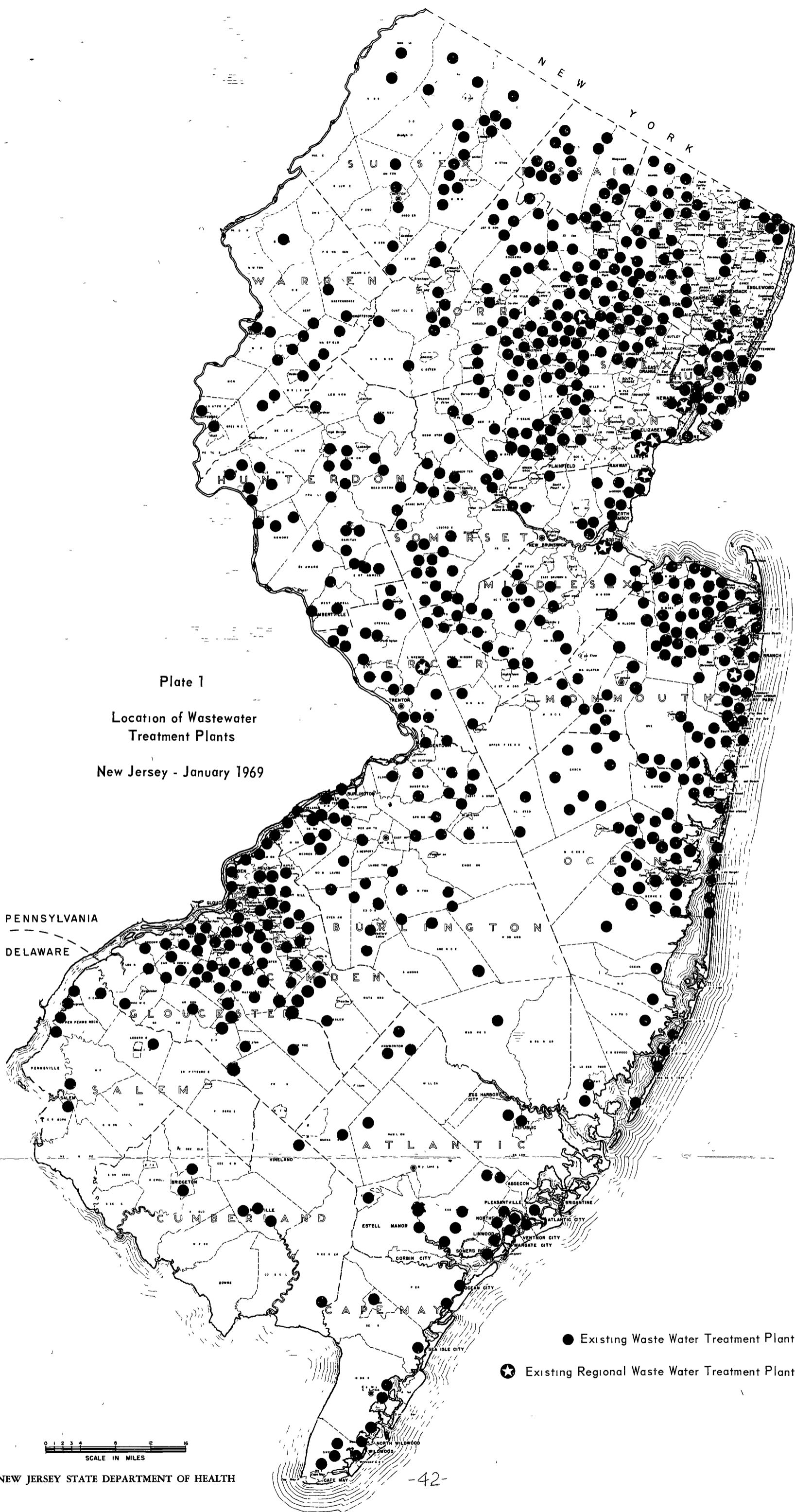


Plate 1
 Location of Wastewater
 Treatment Plants
 New Jersey - January 1969

PENNSYLVANIA
 DELAWARE

- Existing Waste Water Treatment Plants
- ★ Existing Regional Waste Water Treatment Plants

0 2 4 6 8 10 12 14 16
 SCALE IN MILES

NEW JERSEY STATE DEPARTMENT OF HEALTH

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
Wastewater Treatment Plant Construction Index
for the New York Area

