FIRST ANNUAL REPORT

N. J. Sanitary & Economic Water Commission

1926

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STATE OF NEW JERSEY SANITARY AND ECONOMIC WATER COMMISSION

TO HIS EXCELLENCY THE
GOVERNOR
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First Annual Report
Sanitary and Economic Water Commission
State of New Jersey

TRENTON, October 1, 1926.

To His Excellency, the Governor:

The Sanitary and Economic Water Commission has the honor to present herewith its First Annual Report for the fiscal year July 1, 1925, to June 30, 1926.

ORGANIZATION

The Sanitary and Economic Water Commission was created by an act of the Legislature of 1924, but at that time was not provided with an appropriation, which resulted in considerable delay in taking up matters of pressing importance. The Commission consists of the Attorney-General and one member each from the present membership of the State Department of Health, the Board of Shell Fisheries, the Fish and Game Commission, the Board of Commerce and Navigation and the Department of Conservation and Development, as appointed by the Governor.

The appointments were made late in the summer of 1924. Mr. Augustus Smith, of Roselle, representing the Board of Commerce and Navigation, is the Chairman. The other members are: Dr. J. E. H. Guthrie, Newark, representing the State Board of Health; Edward L. Katzenbach, Attorney-General, Trenton, representing his department; H. L. Moeller, Hoboken, representing the Board of Conservation and Development; John C. Riggin, Port Norris, representing the Board of Shell Fisheries, and George C. Warren, Jr., Summit, representing the Fish and Game Commission.

The Commission has held numerous meetings and has entered upon a program of work which can be counted

upon to produce very effective results on an extremely small appropriation. This program has been adapted from the best features of similar work done in other States such as Pennsylvania, Connecticut, Rhode Island, Maryland and New York. The program, therefore, is not an experiment and can be confidently expected to produce maximum results with a minimum of expense. The States of Pennsylvania, New York, Maryland and Rhode Island have large staffs of engineers devoted to this type of work; for example, Pennsylvania has twenty-two engineers and an appropriation of $100,000.00.

WORK TO BE UNDERTAKEN

The name of the Commission suggests the work to be undertaken, namely, the sanitary and economic protection, development and improvement of the waters of the State.

The *quantity* of water available for the municipalities and industries of the State is a pressing problem, a fact which has been brought home to many of us by an occasional water shortage. Less attention has been given to an equally important matter—the *quality* of water. There have been numerous instances of trouble from polluted water, for example, the recent bans against oysters and sea food taken from polluted water, the complaints of citizens and civic organizations along the Passaic, Hackensack, Raritan and Rahway rivers, and the seashore resorts.

The recent study of the Russell Sage Foundation shows that many chemical and textile industries are leaving New York and coming into New Jersey. These industries use large quantities of water and discharge obnoxious, unhealthful effluents. This is taking place in the most congested part of the State and suggests a vital problem of tomorrow for which we should prepare today.

The clearing of our waters from pollution is of great importance from the standpoint of the various boards represented on this Commission, namely, Conservation, Fish and Game, Shell Fisheries, Commerce and Naviga-

tion and Health. The Economic Water Commission proposes to coordinate and unite these several interests into one unified policy for the State, to the end that each stream may be used for the most economic use to which it is adapted. Some streams may have great recreational possibilities, others may be particularly adapted to water supply purposes, while still others may find their best service in removing the wastes of industries.

The work is really that of zoning the streams as to their best economic use. In this respect it differs from the work of the State Department of Health and supplements it, the latter being a policing body to enforce the law. The difference may be suggested by the following words quoted from the U. S. Public Health Service:

"The paramount interest of the Public Health Service in the subject of streams and coastal waters is naturally in the health questions involved, nevertheless, it requires but little acquaintance with public health problems to bring prominently before the mind the fact that these problems are inextricably interwoven with other problems of human welfare, problems which range themselves under the general categories of economics and sociology, and are associated with the topics of the physical sciences. The data collected incidentally to the surveys and investigations of the Service, which were undertaken solely in the interest of public health, are in many instances, useful to other interests. For example, the data regarding stream flow and volume as influenced by season, would be useful in connection with navigation, agriculture, and in connection with damming and impounding projects, and data on turbidity, pollution and oxygen content could, in many instances, be directly utilized by manufacturing interests and in connection with fish culture."

The Rhode Island and Pennsylvania water boards have done very effective work in classifying the proper use of streams and in removing the causes of pollution, not by a policy of strict legal enforcement, but by one of conciliation. We know as positive facts that water polution has already caused, in our State, serious complaints, disease and death along the coast and on the inland streams as well as depletion of natural resources

and loss of popularity to our resorts; we know that these conditions are growing worse, and will continue unless they are controlled; we know that we need a coordinated, broadminded policy in control of these affairs; we have the experience of other states and countries to guide us; and we now have a Sanitary and Economic Water Commission created by an act of the Legislature with enthusiastic, willing members, created upon the best models developed by other states.

The need for this type of work is well exemplified by the following quotation from a publication of the U. S. Public Health Service:

"It has been the experience of every civilized country, that with the growth of population and industries, the increase in the number and size of cities and the development of rural areas, the streams draining the catch basins in which these changes occurred have become more and more polluted as the years passed, unless artificial means for preventing or offsetting this pollution were employed. During the period when the streams were approaching a final stage of hopeless pollution, there were long years in which the drinking by human beings of contaminated water, led to its inevitable result, the great prevalence of those diseases which are water borne, including typhoid fever, and the paratyphoids, bacillary dysentery and in some instances Asiatic cholera. In some instances this pollution had reached such a degree before the institution of corrective measures, that these measures could be employed successfully only at extravagant expense, or were rendered economically impracticable. What had formerly been beautiful streams of clear water, enhancing the attractiveness of the landscape, inviting the growth of settlements along their banks and commercial and pleasure boating on their surfaces, offering an abundant supply of good water for public, domestic and manufacturing purposes, and abounding in edible fish, became noisome drainage canals, repugnant to every sense, and menacing to every human interest concerned. Under these conditions decent human beings were repelled away from the vicinity of the streams, and only visited it as the necessity of their employment compelled them. Real

estate values along the banks sank to a low ebb except where commercial necessity kept them up, the better class of citizenry withdrew, and the residence areas were given over to those whose social development was so low that the gross offensiveness of the water front could be endured by them, or were so poor that no other location was within their means. What should have been the pride and glory of the city became its reproach, not to be spoken of in polite circles. At the same time the water became unfit for drinking purposes, and could not be artificially purified for such use, and in some instances it could not even be rendered fit for manufacturing use. The recreational use of the river for boating and swimming had long been a matter of the past. Fish had long become extinct in the stream, and some species had been effectively cut off from their natural breeding grounds in the upper reaches, resulting in great diminution of their total numbers, and the discouragement of the fishing industry concerned."

METHOD OF PROCEDURE

With such a field as this the Commission has approached its work though handicapped by lack of adequate appropriation and staff. A part-time secretary was engaged and for several months a full-time stenographer was employed. Since then stenographic service has been engaged at half time. Appointments were made through the State Civil Service Commission. The Custodian of the State House was unable to furnish office accommodations, and a small office, at a low rental, was therefore engaged at 34 West State Street, Trenton.

The Commission felt that a study of pollution conditions existing in New Jersey at the present time was essential. Invitations to give the Commission information about cases of pollution were sent to several hundred civic organizations, chambers of commerce, etc. Other information was obtained by questionnaires sent to the game wardens through the courtesy of the State Fish and Game Commission. The files of the State Department of Health, the Fish and Game Commission and the

Department of Conservation and Development were searched. Some sixty cases of pollution were established by these means. These are entered upon a calendar, upon a map and upon index cards giving full information as to the location, the name of the polluting plant or individual, officer in charge, character of discharge, nature of damage, principal uses of stream, name of complainant, file reference, character of action taken and whether or not the nuisance is abated. Some of these cases were personally investigated by the individual commissioners and abatement sought by negotiation. Others were referred to the Fish and Game or Health Departments as seemed best. Many cases were abated; others were found to be temporary or without foundation. Still others are in process of settlement and remedies are being investigated.

All the waterways of the State have been listed and an effort is being made to classify them with reference to their chief economic uses and the manner and extent to which those uses are being impaired by pollutions, under the following headings: Chief Uses, Water Supply, Industrial, Sport Fishing, Food Fishing, Contiguous to What Large Cities, Recreational Uses, Adjacent to What Parks. Pollutions under the following heads: Complaints, Treated Sewage, Untreated Sewage, Creameries, Canneries, Tanneries, Gas Works, Oil Refineries, Dye Works, Chemical Works, Textile Works and others.

RARITAN RIVER INVESTIGATION

In the fall of 1925 Governor Silzer asked the Commission to make a study and report on pollution existing in the Raritan River, together with possible remedies and recommendations. A study was accordingly made and a descriptive report prepared from personal investigations, from data on file in other State departments, from reports by consulting engineers, and from consultations with engineers, industrial operators and officials in the valley. A map was prepared showing the entire Raritan Valley with its tributaries and water sheds, with existing water

supply areas, actual and potential pollutions, municipalities, sewage disposal plants and similar information. This information was digested and recommendations prepared. This was transmitted to Governor Silzer and later to the Legislature. On May 4 there was a joint meeting of the Commission and the Raritan Valley Conservation Association, held in the Court House, New Brunswick. There was a large attendance of officials and general public. Pollution in the Raritan appeared, from the earnest and enthusiastic tone of the meeting, to be of genuine concern to the inhabitants and officials. A resolution was adopted requesting this Commission to prepare plans, estimates and financial programs by which the existing pollutions might be cleared up either by sewage treatment plants or the building of joint sewers. This has been the subject of serious consideration by the Commission on various occasions since.

CONTACTS WITH OTHER ORGANIZATIONS

Various meetings of other bodies have been attended by members of the Commission. A meeting held in New York City, to study pollution in that vicinity by the Joint Legislative Committee of New York State, was attended and testimony given. Likewise a meeting in Washington, called by Secretary Hoover, to consider pollution as it affects food fish. Another meeting of the National Conference on Outdoor Recreation was attended, the Secretary acting as a member of that body's Committee on Pollution of Waterways. The Commission was represented at a meeting, in Asbury Park, of the State Sanitary Association. The Commission obtained the benefit of consultation and advice of the chief engineer of the Pennsylvania State Sanitary Water Commission by personal interview, thereby getting the benefit of experience gained in Pennsylvania.

Considerable attention has been given to problems of coast pollution by both oil and garbage. The Chairman called upon Commissioner Taylor, of the New York Street Cleaning Department, to apprise him of the exist-

ence of this Commission and was courteously informed as to what that department is doing to abate the grounds for complaint from garbage. Commissioner Taylor accompanied the Chairman on a tour of inspection to the point at which the garbage is dumped at sea, east of the Scotland Lightship, likewise to incinerator plants. The Commission has considered recommending that the ocean, near New York harbor, be swept or otherwise cleaned of floating refuse at regular intervals, as considerable debris floats, all of it gathering in long, regular windrows. It appears that this could readily be done by some sort of belt conveyor device mounted on a boat. The garbage itself does not float, and appears to settle rapidly to the bottom.

OIL POLLUTION OF BEACHES

Investigation was made as to the extent to which oil from ships was causing trouble to the shore communities. This was done at the request of the Secretary of State of the United States, and the results were transmitted to him. It appears that oil pollution is giving less trouble at the present time than previously. The 1924 Congress adopted the Lineberger Act, prohibiting discharge of oil by steamers within three miles of the land. A strong effort to make this act apply to industrial plants was unsuccessful. An international conference on oil pollution beyond the three-mile limit has recently concluded. The international conference recommended to their several governments that areas be prescribed to extend generally fifty miles and in some cases one hundred fifty miles from the coast within which the discharge of oil by steamers should be prohibited. Separation devices for removing ninety-five per cent of oil from bilge and ballast waters exist and should be installed on the ships. It may confidently be expected that the adoption and enforcement of these regulations will bring about nearly complete removal of the damage done by oil pollution.

STUDY OF WORK DONE IN OTHER STATES

A great deal of thought has been given by the Commission to discovering the most practicable and effective program of activities which can be engaged in with the limited resources at our disposal, to the end that the streams and waterways of the State may be cleared of their pollution to a reasonable degree in proportion to the best economic uses of the particular stream. By correspondence with the Fish and Game and Public Health Departments and Sanitary Engineers of all the states in the Union, we have obtained an idea of the manner in which the other states handle these problems. We have also been in special correspondence and have obtained a considerable library of reports and printed material relating to stream pollution and its remedies.

COOPERATION WITH OTHER NEW JERSEY STATE DEPARTMENTS

The Commission has cooperated on various occasions with the Fish and Game Commission and especially with the Department of Health. In an effort to delineate the respective powers, duties and programs of the two boards, a joint meeting with the State Department of Health was held on June 22. The following is a summary of conclusions reached at this meeting:

It was the unanimous opinion of the representatives of the Department of Health and of the Sanitary and Economic Water Commission and of the representative of the Attorney-General's office, that ample legal power for enforcing statutes forbidding the pollution of streams within the State had been given by the Legislature to the Department of Health, and that it would apparently accomplish no benefit to the State to have the Sanitary and Economic Water Commission, under its independent authority, also attempt to enforce those statutes.

It was pointed out, however, by the Department of Health, that the decision to enforce a statute which in-

volved shutting down or even crippling an active industry employing many men, or one which involved the expenditure of a great deal of public or private money was a difficult and embarrassing decision to make, and that it would be very helpful to the Department of Health, if the Sanitary and Economic Water Commission passed on such puzzling cases and gave the Department of Health the benefit of its recommendations.

The Attorney-General's office held that the statute creating the Sanitary and Economic Water Commission did not give it any authority to suggest remedial measures. The statute does give to the Sanitary and Economic Water Commission power to enforce any and all laws now on the statute books or which may later be enacted that relate to pollution of waters. There would appear to be no advantage in such enforcement by the Sanitary and Economic Water Commission for this is already being done by the State Department of Health. The Commission, however, may investigate and report to the Department of Health any cases of pollution or violation of the Pollution laws for such action by the Department of Health as seems best to it.

Taking up the Raritan River as a test case, the Sanitary and Economic Water Commission could properly inform the Department of Health that it had adopted a policy of classifying streams under three heads with respect to the amount of pollution that would be tolerable, to wit:

Class A includes streams and parts of streams which should be kept clean enough for potable purposes.

Class B includes streams and parts of streams which should be kept clean enough for recreational purposes and for enhancing the value of the real estate on their banks.

Class C includes streams and parts of streams which are so important to the community for commerce or industry that their cleanliness is of minor importance.

And further that in the judgment of the Sanitary and Economic Water Commission that region of the Raritan River below the confluence of the Millstone and extending down to a point below Highland Park, known as

Kellers' Landing, should be conserved for the present as Class B water.

And further that the Sanitary and Economic Water Commission recommends the State Department of Health to press the cities of New Brunswick, Highland Park, Somerville, Bound Brook, Raritan, Finderne and others to cease forthwith discharging raw sewage, untreated trade wastes and oil into the Raritan River.

ADVISORY POWERS NEEDED

It appears that the act creating the Commission does not give advisory powers but only those of enforcing existing laws. As the Commission feels that a necessary and valuable part of its duties will consist in seeking suitable remedies for cases of pollution and making appropriate recommendations therefor, it is the hope of the Commission that the Legislature will see fit to amend the act to give to the Commission such powers of advice and recommendation.

POSSIBILITIES BEFORE THE COMMISSION

The future work of the Commission will almost of necessity cover the following phases: The zoning of all the streams of the State into different permitted degrees of pollution, bearing in mind the present and probable future use of the stream for such different purposes as water supply, recreation, boating, canoeing, swimming and park uses, navigation, fish food supply, sport fishing, sewage disposal and industrial needs, both for industrial water supplies and waste disposal. The proper details of permitted pollution would be determined after investigation and discussion with other State departments. With this once established, the enforcement may properly be left to other State bodies, particularly the Health Department. Another function which has been found highly useful and effective in other states is giving advice and information to various industries as to the most effec-

tive means by which they can treat their liquid wastes so as to remove offense and frequently conserve valuable matters hitherto wasted. Such states as New York, Pennsylvania, Massachusetts and Maryland have done work in this field and have found that industries have taken a cooperative attitude and will treat their offensive wastes if a suitable means can be suggested. We would secure statements from each industrial plant as to the character, quantity and intensity of those wastes. A great deal of research work on this subject has been done by state departments, industrial associations and the national engineering and waterworks associations; also by the United States Public Health Service. Much of the results are in print. The Commission has collected some of this material. A full collection of such information should be made, classified, and put to work for the benefit of the State. This will require considerable library and research service and possibly require laboratory service as well.

It is believed that the Commission, with its membership composed of one member each of all the State bodies interested in the subject of water pollution, may act as a harmonizing, coordinating and advisory board so that a unified policy may be made by all the boards in regard to cases of stream pollution.

The Commission has important duties of publicity and education regarding water pollution. For example, we have discussed disposal plans for waste crank-case oil which is, at present, discharged freely into sewers and streams by garages. In the aggregate it amounts to a great volume of obnoxious oil which has a most deplorable effect on our streams and their banks, creating a nuisance, odor, unpleasantness and fire hazards, soiling of boats, canoes and piers and killing fish. Remedies have been discussed with one of the large companies. Aggressive action along these lines might result in a great benefit. The Commission has also considered and discussed the suggestion mentioned above, of operating a sweeping boat to clean the windrows of floating debris from the waters near New York Harbor, thereby removing this offensive material before it has a chance to pile up on the New Jersey beaches. Joint meetings with the public

and officials of various communities regarding the installation of sewage disposal plants is another angle of the educational possibilities of the Commission.

With a fuller conception of its duties and possibilities, and possibly with increased staff and appropriation, the Commission hopes to continue along these lines to the end that our waters may be cleansed of unnecessary and destructive pollutions and restored to such a reasonable degree of purity as will best conserve the heritage of our population for legitimate and necessary use and enjoyment of our streams and waterways.

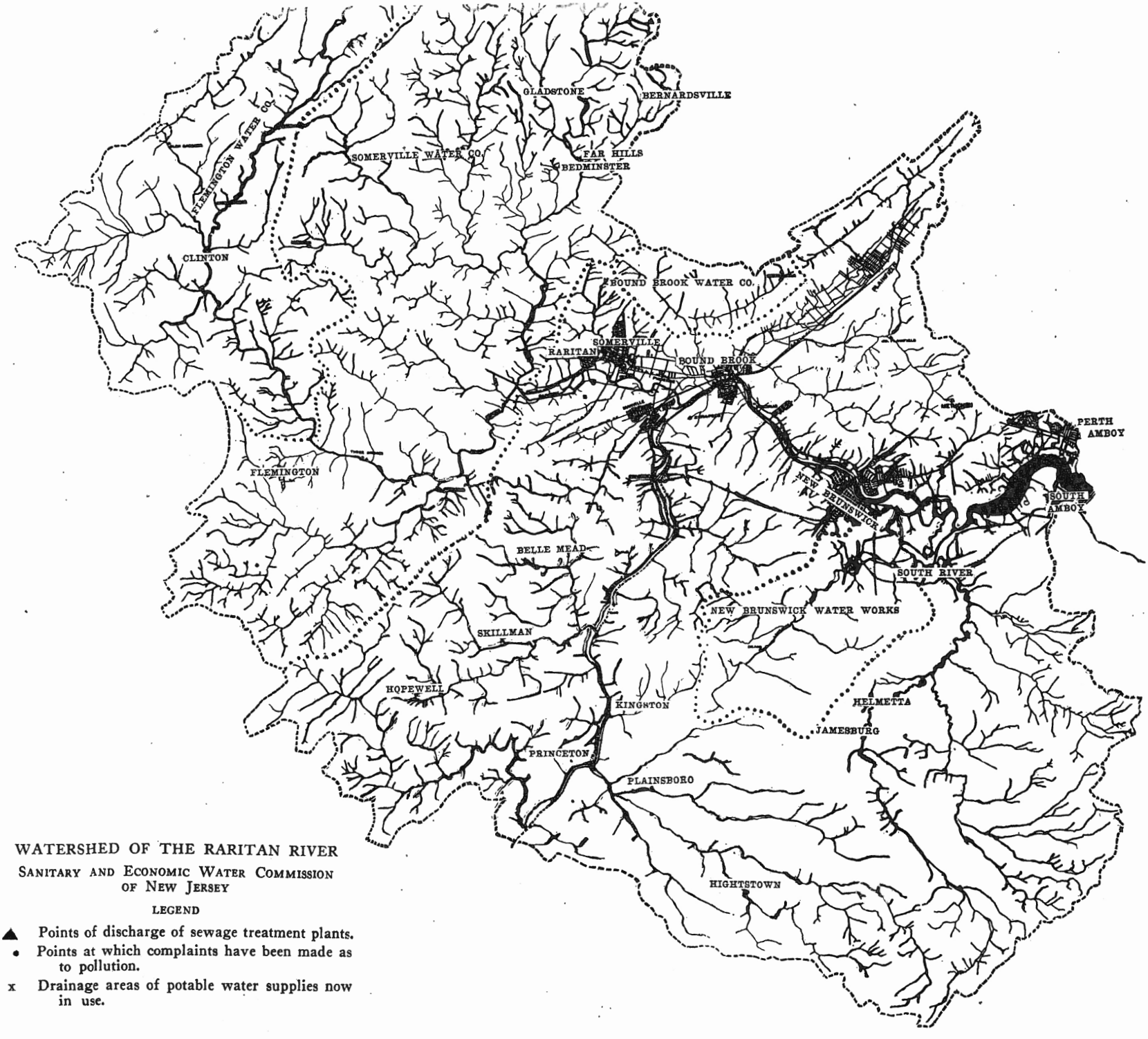
FINANCIAL STATEMENT

During the fiscal year from July 1, 1925, to June 30, 1926, the expenditures of the Commission were as follows:

Appropriation		$5,000.00
Expenditures:		
$3,058.67	Salaries	
155.00	Rent	
274.01	Supplies and Equipment	
36.00	Printing and Postage	
52.08	Drafting and Blue Printing Raritan Report	
186.75	Commission's Travel Expenses	
24.20	Services	
7.75	Communication	
$3,794.46	Total Expenditures	3,794.46
	Balance returned to Treasury	$1,205.54

Respectfully submitted,

AUGUSTUS SMITH, *Chairman;*
DR. J. E. H. GUTHRIE,
EDWARD L. KATZENBACH,
H. L. MOELLER,
JOHN C. RIGGIN,
GEORGE C. WARREN, JR.



WATERSHED OF THE RARITAN RIVER

SANITARY AND ECONOMIC WATER COMMISSION OF NEW JERSEY

LEGEND

▲ Points of discharge of sewage treatment plants.

• Points at which complaints have been made as to pollution.

x Drainage areas of potable water supplies now in use.