THE PORT OF NEW YORK AUTHORITY

Created by Compact Between the States of New York and New Jersey and Ratified by Congress

PORT AUTHORITY LIBRARY

ELEVENTH ANNUAL REPORT

DECEMBER 31, 1931

COMMISSIONERS

NEW YORK	NEW JERSEY
JOHN F. GALVIN, Chairman	FRANK C. FERGUSON, Vice-Chairman
HOWARD S. CULLMAN	SCHUYLER N. RICE
JOHN F. MURRAY	GEN. WILLIAM C. HEPPENHEIMER
GEN. GEORGE R. DYER	JOSEPH C. WRIGHT
JOHN J. PULLEYN	GEORGE deB. KEIM
A. J. SHAMBERG	IRA R. CROUSE

387.1
P83A
1931
cop 2

THE PORT OF NEW YORK AUTHORITY

Created by Compact Between the States of
New York and New Jersey and Ratified by Congress

ELEVENTH ANNUAL REPORT

DECEMBER 31, 1931

COMMISSIONERS

NEW YORK	NEW JERSEY
JOHN F. GALVIN, Chairman	FRANK C. FERGUSON, Vice-Chairman
HOWARD S. CULLMAN	SCHUYLER N. RICE
JOHN F. MURRAY	GEN. WILLIAM C. HEPPENHEIMER
GEN. GEORGE R. DYER	JOSEPH G. WRIGHT
JOHN J. PULLEYN	GEORGE deB. KEIM
A. J. SHAMBERG	IRA R. CROUSE

THE PORT OF NEW YORK AUTHORITY

89–90 Eighth Avenue, New York City

EXECUTIVE DEPARTMENT

JOHN E. RAMSEY, General Manager

JOHN J. MULCAHY, Assistant General Manager

L. J. KEEFE, Secretary

MORRIS M. FROHLICH, Assistant Secretary

H. S. QUIGEL, Real Estate Agent

THOMAS S. CULL, Chief Clerk

JAMES CLARK McGUIRE, Purchasing Agent

WILLIAM LEARY, Treasurer

E. E. MENZER, Assistant Treasurer

MARION RODGERS, Auditor

DR. EDWARD LEVY, Medical Director

EDWARD J. TSCHIMBKE, Librarian

E. TRACY LANTERMAN, General Claim Agent

LEGAL

JULIUS HENRY COHEN, General Counsel

PAUL WINDELS, Associate Counsel, New York

WILBUR LaROE Associate Counsel, Washington

RUSSELL E. WATSON, Associate Counsel, New Jersey

LEANDER I. SHELLEY, Attorney

FRANK B. WETTIG, Attorney

A. J. TOBIN, Real Estate Attorney

T. J. W. GERATY, Attorney

DEVELOPMENT AND OPERATION

BILLINGS WILSON, Assistant General Manager

W. P. HEDDEN, Chief, Bureau of Commerce

E. MORGAN BARRADALE, Superintendent of Tunnel Operation

GLENN S. REEVES, Engineer, Port Development and Transit

SYDNEY CUMBERLEDGE, General Superintendent of Bridges

CORNELIUS F. CAHALANE, Police Consultant

ENGINEERING

O. H. AMMANN, Chief Engineer

J. C. EVANS,
Terminal Engineer

EDW. W. STEARNS,
Assistant Chief Engineer

W. E. THOMPSON,
Tunnel Engineer

ALLSTON DANA,
Engineer of Design

MONTGOMERY B. CASE,
Engineer of Construction

H. J. BAKER,
Engineer of Steel Inspection

CHAS. W. MURDOCK,
Mechanical Engineer

A. H. MORRILL,
Resident Engineer

JAMES H. DUGAN,
Assistant Engineer of Design

ERLING OWRE,
Architect

ROYTON F. WHEADON,
Acting Resident Engineer

AKSEL ANDERSEN,
Assistant Engineer of Design

CHAS. S. GLEIM,
Assistant Engineer of Construction

A. W. MUNSELL,
Engineer of Masonry Inspection

W. A. CUENOT
Chief Draftsman

JOHN N. DODD,
Electrical Engineer

E. W. BOWDEN,
Assistant to Chief Engineer

CONSULTING ENGINEERS

JAMES FORGIE,
Consulting Engineer

OLE SINGSTAD,
Chief Consulting Engineer on Tunnels

LEWIS B. STILLWELL,
Consulting Electrical Engineer

FREDERIC R. HARRIS,
Consulting Engineer

ROBERT RIDGWAY,
Consulting Engineer

GEORGE L. WATSON,
Consulting Engineer

DANIEL E. MORAN,
Consulting Engineer on Foundations

RALPH SMILLIE,
Consulting Engineer

CONSULTING ARCHITECTS

CASS GILBERT, George Washington Bridge and Bayonne Bridge
AYMAR EMBURY II, Inland Terminal No. 1

ENGINEER-ARCHITECTS FOR INLAND TERMINAL

ABBOTT, MERKT & CO.

CONSULTING GEOLOGIST

PROF. CHAS. P. BERKEY

TABLE OF CONTENTS

	PAGE
Accountants' Certification	9
Letter of Transmittal	11
Section I—Development and Protection of the Port	
Part 1—Port Development	15
Part 2—Port Protection	30
Section II—Construction	
Part 1—Bridges	35
Part 2—Tunnels	39
Part 3—Inland Terminal	41
Section III—Operation of Interstate Vehicular Crossings	
Part 1—Holland Tunnel	43
Part 2—George Washington Bridge	47
Part 3—Bayonne Bridge	50
Part 4—Arthur Kill Bridges	53
Section IV—General	
Part 1—Financial	57
Part 2—Real Estate	64
Part 3—Insurance	68
Section V—Reports and Statistics	71

LAWRENCE SCUDDER & CO.
ACCOUNTANTS AND AUDITORS

February 15, 1932

The Port of New York Authority,
80–90 Eighth Avenue,
New York, N. Y.

GENTLEMEN:

We have made an examination of the books of account and records of The Port of New York Authority for the year ended December 31, 1931.

The cash on hand and investment securities in the vault were verified by count. Sinking Fund and General Reserve Fund investments were similarly verified. The cash on deposit in the various banks, together with the collateral deposited as security, were verified by certificates received from the depositories.

All vouchers supporting disbursements from the funds of The Port of New York Authority were audited by us. Expenditures from the funds in custody of the State Treasurers of the States of New York and New Jersey are made after the Comptrollers of the respective States audit the vouchers.

Discount on bonds sold to December 31, 1931, has been charged to investment account in accordance with the policy adopted by the Commissioners.

Interest on bonds of George Washington Bridge and Bayonne Bridge to December 31, 1931, has been charged to investment account.

We hereby certify that the accompanying General Balance Sheet, subject to the Comments thereon, correctly reflects the financial condition of The Port of New York Authority as at December 31, 1931.

Respectfully submitted,
LAWRENCE SCUDDER & CO.

LETTER OF TRANSMITTAL—ANNUAL REPORT FOR YEAR 1931

New York, February 18, 1932.

To the Governor and Legislature of the State of New York:
To the Governor and Legislature of the State of New Jersey:

The Port Authority, with abiding and optimistic confidence in a great and prosperous future for the Port of New York, reports to you that it has proceeded as rapidly as practicable with development work, and has carried out to the best of its ability those mandates assigned to it.

The opening to traffic of the George Washington Bridge and the Bayonne Bridge are the outstanding physical accomplishments of the year. Both of these facilities were opened several months before the dates scheduled, and costs have been kept within the estimates. Ceremonies dedicating the George Washington Bridge were held on October 24, 1931, and it was opened for vehicular traffic on October 25 at 5.00 A. M. Ceremonies dedicating the Bayonne Bridge were held on November 14, 1931, and it was opened for vehicular traffic on November 15 at 5.00 A. M.

The actual work of building Inland Terminal No. 1 was started early in 1931. By the end of the year, excavation work and foundations had been completed and construction had progressed substantially on the superstructure. It is confidently expected the building will be entirely completed before the end of 1932.

The legislation passed in the early part of 1931, pursuant to which the Holland Tunnel was acquired by the Port Authority, and setting forth a policy with respect to construction of future interstate crossings, was of vital

importance. With an asset such as the excellent revenue-producing Holland Tunnel, it is felt that the future credit of the Port Authority is assured, especially in view of the liberal provisions of those sections of the laws permitting the Port Authority to establish a general reserve fund for surplus revenues from any facility, and from which fund, the Port Authority may withdraw moneys to meet any emergencies which may arise in connection with the payment of interest, amortization, etc.

Satisfactory financing arrangements were made in March, 1931, when an issue of Fifty Million Dollars 4¼% Port Authority bonds were sold for the purpose of refunding to the States of New York and New Jersey their respective investments in the Holland Tunnel. Concurrently, there was also issued Sixteen Million Dollars 4¼% Port Authority bonds to cover the estimated cost of constructing Inland Terminal No. 1. There still remains on the current finance program, the matter of selling bonds to obtain funds for constructing the proposed Midtown Hudson Tunnel which was authorized by both States early in 1931. Due to credit conditions, this financing has been deferred and the money to cover the cost of preliminary work, including preparation of plans and purchases of certain real estate, has been obtained through temporary loans.

The continued business depression has finally had its effect on the revenues of the Staten Island bridges. Traffic over the Arthur Kill bridges during 1931 was not up to expectations, although the revenues received were sufficient to pay operating expenses, bond interest, and still leave a balance of net income available for sinking fund and other purposes. Traffic over the Bayonne Bridge has been somewhat disappointing due not only to the present business depression, but also to the fact that the ferries have continued to operate on a considerably reduced tariff scale and have thus retained considerable patronage which it was anticipated would use the bridge. Conversely, however, Holland Tunnel traffic increased over 1930 5.71% despite the fact that the opening of the George Washing-

ton Bridge in October attracted some traffic from the Tunnel. Traffic over the George Washington Bridge has also been very gratifying and the revenues have met expectations.

Further development work in connection with belt lines, local harbor improvements, port facilities, etc., has been carried on.

Respectfully submitted,

THE PORT OF NEW YORK AUTHORITY

JOHN F. GALVIN,
Chairman,
FRANK C. FERGUSON,
Vice Chairman,
HOWARD S. CULLMAN,
JOHN F. MURRAY,
GEORGE R. DYER,
JOHN J. PULLEYN,
A. J. SHAMBERG,
SCHUYLER N. RICE,
WILLIAM C. HEPPENHEIMER,
JOSEPH G. WRIGHT,
GEORGE DEB. KEIM,
IRA R. CROUSE,
Commissioners,

SECTION I—DEVELOPMENT AND PROTECTION OF THE PORT

Part 1—Port Development

Belt Line Number 1

The plans for this proposed facility are being revised, and studies are under way to bring up to date the necessary economic data. This proposed line, when completed, will provide a direct all rail loop connecting the easterly and westerly sides of the port. It begins at the railroad classification yards on the New Jersey side west of the Palisades and runs to Greenville, N. J., thence through a new freight tunnel under the upper bay to Bay Ridge, Brooklyn, where it will connect with the present Bay Ridge Division of the Long Island Railroad, thence through Fresh Pond Junction to the New York Connecting Railroad and finally over Hell Gate to the terminals of the New York Central and New York, New Haven & Hartford Railroads in the Bronx.

The most vital point in this particular project is the construction of the so-called Greenville Tunnel, which cannot be undertaken until economically justified. Joint committees on fact-finding and policy have been designated by the Pennsylvania Railroad and Brooklyn Chamber of Commerce to cooperate with the Port Authority in bringing estimates of cost and savings up to date.

Belt Line Number 13

The advantages of co-ordinated Belt Line No. 13 from Edgewater to Bayonne, on the New Jersey shore, have been brought to the attention of the public by the issuance of an illustrated booklet setting forth the location, services, interchange schedules and rate bases. This pamphlet was prepared in cooperation with the interested carriers and published as Port Information Bulletin No. 3 and has had a wide circulation among the railroad and shipping public.

Through the publication of new rates in conformity with the decision of the Interstate Commerce Commission in the Eastern Class Rate Case, rates between Belt Line No. 13 territory and New England are now on a parity with the rates from the New York side of the Port District. Rates to upper New York State have also been made uniform from all points on the Belt Line, thus completing the revision of rates from this territory which was started as a result of negotiation between the carriers and the Port Authority in 1923.

At the request of New Jersey shippers, discussions have been started with the Trunk Line Association relative to establishment of switching rates in lieu of class and commodity rates on local movements between industries and stations on Belt Line No. 13.

Jersey City Marine Terminal

Following a favorable ruling from the Secretary of War permitting extension of pierhead line abutting the site of the proposed Jersey City Marine Terminal, further studies and plans were made. A layout for piers and supporting terminal facilities has been tentatively chosen and studies of costs, carrying charges, prospective revenues, and financial schedules under which Jersey City would lease the terminal from the Port Authority have been worked out. Preliminary conferences on the basis of this plan have been held with the Jersey City officials, who in turn are negotiating with prospective operators for the properties.

In order to provide adequate depth of water for large steamers approaching the terminal a representative of the Port Authority appeared before the First District Engineer on November 24, 1931, urging a favorable recommendation on a survey for the deepening of the Hudson River Channel to 40 feet up to the pierhead line on the New Jersey side.

Hoboken Piers

As noted in the Tenth Annual Report, the Port Authority negotiated during 1930 with the United States Shipping Board, the City of Hoboken, and Mr. Paul W. Chapman,

for the purpose of working out a proposition which would permit the taking over of the Hoboken piers by the Port Authority for lease to a responsible operator under such terms as would adequately protect the Port Authority investment, and at the same time insure some income to the City of Hoboken in lieu of taxes. The plan under which the Port Authority would have taken over Mr. Chapman's bid to the Shipping Board, and then in turn leased the piers to Mr. Chapman, proved unsatisfactory when the Chapman interests stated they were unwilling to proceed on the terms outlined by the Port Authority as necessary to protect its investment. Mr. Chapman withdrew his bid in January, 1931.

On February 10 and 11, 1931, bills were introduced in the House of Representatives and the United States Senate authorizing the Shipping Board to sell the Hoboken pier property directly to The Port of New York Authority for the sum of $4,282,000. The Senate bill was passed on March 3, 1931, but the House bill remained in Committee.

By resolution of June 4, 1931, the Port Authority decided to submit a bid for the Hoboken piers in the event the United States Shipping Board should again advertise them for sale. In view of the shipping depression which caused three of the four lines operating from the Hoboken piers to move elsewhere in 1931 the Shipping Board upset price of $4,282,000 appears too high for present consideration. The Shipping Board has not readvertised the piers for sale on any new terms.

Transportation Survey of Northern New Jersey

In order to facilitate the study of transportation needs of the Jersey section of the Port District west of the Hackensack River, arrangements are being made to open a Field Office at Room 2828 Lefcourt-Newark Building, 11 Commerce Street, Newark, N. J.

In Northern New Jersey, west of the main railroad classification yards, is a vast system of trackage, freight stations and private industrial sidings for which no complete traffic records have ever been compiled. Arrange-

ments are being made for carrier co-operation in making an extensive collection of transportation data which will show the volume and distribution of less-than-carload-freight, and will throw a light on the need, if any, for union stations for handling this traffic. The survey will also show the character and amount of carload traffic which is being interchanged by rail between industries and stations, compared to the amount handled by other types of transportation.

The Newark Field Office will provide a center from which direct contact with the carriers and shippers in this territory can be maintained, with respect to local problems of port development in New Jersey.

Food Terminals

The Port Authority assisted the Commission to Investigate the Market Needs of New Jersey Agriculture, appointed by the New Jersey Legislature in 1930, in the collection and analysis of data and the preparation of its "Report of Progress" published in March, 1931. This report recommended that the first market to be developed should be in the Newark Region, the largest primary market in the State.

In order to determine the available warehouse space for storing perishable foods, the Port Authority made a new survey of public storage warehouses in the Port District which included dry storage warehouses as well as those equipped with cold storage facilities.

New York Food Marketing Research Council

The Port Authority has continued its cooperation with the U. S. Department of Agriculture, and other public bodies, in maintaining headquarters for the New York Food Marketing Research Council. Four research studies relating to the New York City market were brought to completion, and three public meetings were held with the trade in which the subjects of milk supply, restaurants as food outlets, and reduction of wastage in perishable food distribution, were discussed.

Federal Aid to the New York Barge Canal

The New York State Barge Canal is of great importance to the commerce of the Port of New York since it constitutes a low-cost route to the interior for transportation of bulk commodities which make up the "bottom" cargo of ships plying to and from the port. The present Barge Canal system upon which the State of New York has spent $175,000,000 furnishes the only means of competing with the Mississippi River system serving the Port of New Orleans, and the St. Lawrence waterways serving the Canadian ports of Montreal and Quebec, both of which are maintained and improved at national expense.

The program of improvement in the New York State Barge Canal system, including deepening to 14 feet between locks, raising of bridges to provide 20 feet vertical clearance, and widening at strategic points, at an estimated cost of $50,000,000 has been found justified by the Chief of Engineers of the U. S. War Department in anticipation of the increased traffic which will use this waterway. Looking towards further improvements at Federal expense, Congress, in the 1930 Rivers and Harbors Act, authorized the Secretary of War to accept the transfer of title and operation of the canal from the State of New York. However, the terms of the proposed transfer do not appear to adequately protect the interest of the State.

At a hearing before a Committee of the New York State Legislature, the Port Authority urged that continued efforts be made to promote improvement of the canal with Federal aid, suggesting that the State should take steps to formulate terms and conditions upon which federalization might be accomplished. Realizing that the formulation of such terms, and the necessary amendment to the State Constitution to permit federalization will take several years, the Port Authority will urge Congress to give immediate aid for improvement of the Barge Canal as a national water highway, through a "grant-in-aid" to the State of New York under specifications to be laid down by the Secretary of War. In furtherance of this program a resolution was introduced and passed endorsing the policy of a federal

grant-in-aid at the 27th Convention of the National Rivers and Harbors Congress. A bill to effectuate the Federal aid program will be introduced in Congress during the 1932 session.

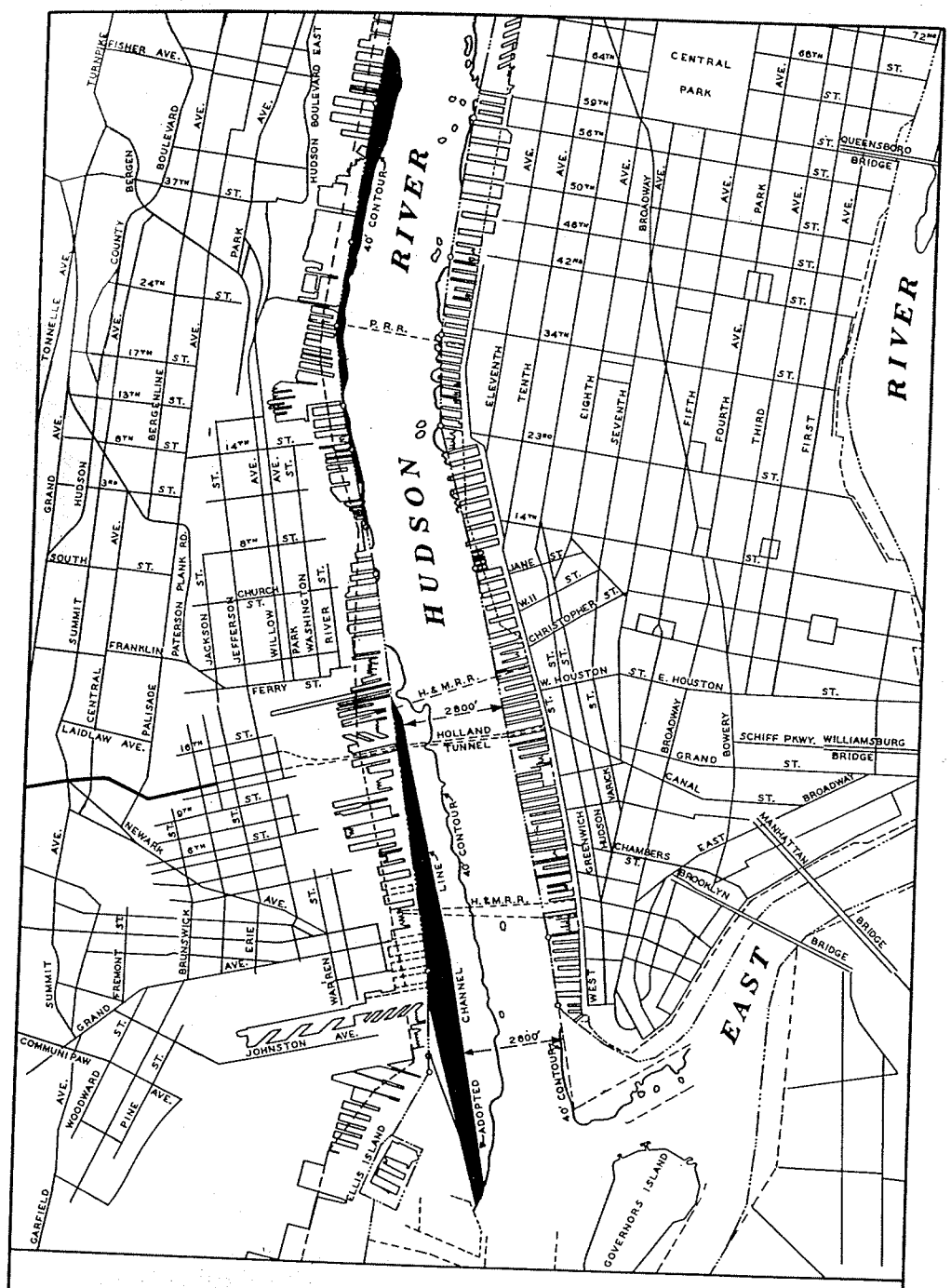
Channel Improvements

The policy of co-operating with the Army Engineers to improve nevigating conditions in the Port District was continued, and as a result of field investigations and traffic surveys conducted by the staff, recommendations were submitted to the United States Engineers at public hearings on proposed channel improvement projects. Some of the projects in which the Port Authority took an active part were:

1. Proposal for dredging Hudson River to a depth of 40 feet for its full width from 59th Street to Upper New York Bay.

2. Proposal to improve New York and New Jersey Channels from deep water in Lower Bay through Raritan Bay, Arthur Kill, Kill van Kull, to deep water in Upper Bay in order to secure sufficient depth and width for vessels using these channels. The Port Authority submitted an extensive brief, recommending the adoption of a comprehensive plan for the gradual improvement of these channels. The specific recommendations were as follows:

(a) Remove sufficient rock in the vicinity of Bergen Point Light to improve navigating conditions during bad tide and wind conditions. (b) Widen and deepen the channel north of Shooters Island to relieve congestion in the south channel. (c) Increase the depth of the Kill van Kull to 35 feet and the width to 1,000 feet to provide safe navigation for vessels while passing. (d) Widen the Arthur Kill to 600 feet and increase the depth to 35 feet. (e) Dredge the Raritan Bay Channel to 35 feet with a width of 800 feet. (f) A quarantine anchorage at Perth Amboy large enough for three sea-going vessels.



THE PORT OF NEW YORK AUTHORITY

CONTEMPLATED WIDENING OF HUDSON RIVER CHANNEL

SCALE IN FEET

0 2000 4000 6000 8000

OFFICE OF ENGINEER-PORT DEVELOPMENT AND TRANSIT

3. Proposed cut-off channel at Perth Amboy, N. J., to connect the Raritan River Channel with the southerly end of the Arthur Kill.

4. Improvement of the Rahway River to a depth of 12 feet (14 feet through rock cuts) to facilitate the economical handling of heavy raw materials and fuel and to promote the future industrial development of this section of the port.

5. Improvement of the Elizabeth River to a depth of 12 feet between harbor lines so that barges may tie up alongside of industrial bulkheads without hampering the movement of other craft in the fairway, with the understanding that the Federal Government shall bear the entire cost of dredging provided the local interests pay the cost of bulkheading.

Bridges and Tunnels

The Federal Government requires all agencies desiring to construct bridges across, or tunnels under navigable waterways, to make application to the War Department for a permit. The Army Engineers requested opinions from the Port Authority as to the sufficiency of clearances for navigation, etc., on various applications during the year, the most important of which were:

(1) Formulation of standard bridge clearances over the Hudson River from Spuyten Duyvil north, in connection with future bridges across that river. In order to protect this important waterway for navigation in the future the Port Authority recommended a minimum clearance from Spuyten Duyvil to Hastings of 185 feet. From Hastings north to the Port District line a minimum clearance of 150 feet above mean high water was recommended.

(2) Application covering construction of a new bridge across Gowanus Canal, at Hamilton Avenue, Brooklyn. This application was recommended as acceptable by the Port Authority if the original plan were modified by relocation of bridge fenders so as to permit a wider horizontal clearance for navigation.

Modification of Harbor Lines

The authority to establish and maintain harbor lines is vested by the United States Government in the New York Harbor Line Board. Applications for changing the existing bulkhead and pierhead lines must therefore be presented to this Board for their review and decision.

During the past year the Port Authority submitted recommendations on applications modifying the existing harbor lines of the Hudson River requested by the Hoboken Land and Improvement Company; of the Passaic River requested by the Erie Railroad Company, and of the Harlem River suggested by the U. S. District Engineer.

Port Information

The Port Authority continues to handle numerous inquiries concerning port facilities, transportation services and channel depths from present and prospective users of the port. The monthly "Commerce Bulletin," containing current information on commerce, shipping, channel improvements, port facilities, storage holdings, and other economic data relating to the port, is distributed regularly to 1,600 shippers, transportation companies, commercial agents and libraries both in the United States and abroad.

Suburban Transit

The Port Authority has continued its suburban transit studies and its support of the work of the Suburban Transit Engineering Board, which has been studying passenger traffic conditions and endeavoring to prepare a regional plan for facilitating the movement of commuter traffic about the Metropolitan District. This Board comprises engineering representatives of the following agencies:

New Jersey Regional Planning Commission.
Board of Transportation, City of New York.
Board of Supervisors, Westchester County.
Board of Supervisors, Nassau County.
Board of Supervisors, Suffolk County.
The Port of New York Authority.

Committee of Railroad Executives.
New York Central Railroad.
Erie Railroad.
Central Railroad of New Jersey.
Pennsylvania Railroad.
Delaware, Lackawanna & Western Railroad.
New York, New Haven, & Hartford Railroad.

This Board has functioned through three sector planning committees; namely, New Jersey sector, Westchester sector and Long Island sector. Traffic operating statistics together with construction costs were made for numerous studies in each sector and these sector studies were submitted to the Board for its consideration. From the results of these findings the Report Committee of the Board prepared a tentative draft, dated August 13, 1931, of an Engineering Report on suburban plan for the Metropolitan District which was transmitted to the Board for its approval.

The Suburban Board, at a meeting on October 15, 1931, laying on the table the draft of the Engineering Report, stated that circumstances beyond its control prevent it from making a report at this time, and adopted the following resolution:

> Whereas, The Suburban Transit Engineering Board, having been for some time engaged in studing the suburban transit engineering problems of the Metropolitan District, and
>
> As present conditions are materially different from those obtaining during the seventeen year period ending with 1928, on which the studies were based; due to recent changes in cost of construction, cost and availability of money, trend of passenger traffic, both urban and suburban, and
>
> As these and other factors create considerable doubt as to the future;
>
> Be It Resolved, That pending more information as to the future, this Board recommends to the member agencies that further consideration of the suburban

transit plan be suspended for a period of at least a year, but that the Board continue to observe the changing conditions and renew active planning when it deems conditions more appropriate.

Some of the agencies are continuing their support of activities on a reduced scale, but exhaustive engineering studies involving plans and estimates of cost of construction will be suspended for the coming year. During this interim suburban traffic statistics extending over six years or more are being compiled from the records of the railroads. This data will form the basis for the operating analyses and economic studies for a suburban transit plan at a future date.

Highway Traffic Studies

In connection with the financing, construction, ond operation of its various interstate vehicular crossings, the Port Authority has continued its highway traffic surveys and studies. These studies embrace the present and indicated future trend of total interstate vehicular traffic, its origin, destination and directional flow, the types and dimensions of vehicles, and the hourly and seasonal variations in travel.

During 1931 a comprehensive traffic and revenue study of the proposed Midtown Hudson Tunnel was completed. This investigation covered not only estimates of prospective traffic and revenues for financing purposes but also directional flow for purposes of plaza and approach highway design and trends in types and dimensions of vehicles in order to determine the proper tunnel dimensions.

Pursuant to a resolution of the New Jersey Legislature authorizing a preliminary survey of a bridge across Raritan Bay, connecting Staten Island and New Jersey, extensive studies were made of the economic feasibility of this project. The traffic and revenue studies included field clockings on sixteen days during the summer of 1931 at Victory Bridge, Perth Amboy, and other gateways leading to the New Jersey seashore territory. Origin and destination of more than 100,000 vehicles were determined on

eight different days in May and July, 1931, by a squad of fifty carefully trained inspectors, simultaneous checks being made at the Victory Bridge, at the Arthur Kill bridges and ferries, and at the Bayonne ferry, with the cooperation of the State and City police, Motor Vehicle Commissioner, and State Highway and Traffic Commissions. These data were supplemented by traffic counts obtained from the New Jersey State Highway Department, records of bus and railroad travel and attendance at beaches and park resorts. Test runs were also made to determine travel time and mileage via existing routes as compared to the proposed new Raritan Bay Bridge route. The facts and conclusions drawn therefrom with respect to the economic feasibility of the Raritan Bay Bridge have been incorporated in a separate report.

Supervision of Emergency Works Bureau Forces

The Emergency Works Bureau, which is providing employment from funds of the Emergency Unemployment Relief Committee, requested the Port Authority to outline and in a general way supervise activities which would profitably employ men in the so-called "white collar" class. The Port Authority agreed to provide a limited amount of technical supervision, provided the Emergency Works Bureau assumed full responsibility for the personnel, and assigned both New York and New Jersey residents in equal proportions.

A branch office of the Emergency Works Bureau located at 14th Street and 8th Avenue was opened on November 16, 1931. These quarters were made available through the courtesy of the management of the County Trust Building. Men paid from the Emergency Unemployment Relief Committee's fund are assigned to this office for a period of three days each week, one shift working Monday, Tuesday and Wednesday and another Thursday, Friday and Saturday. At times both shifts have been assigned on the same day, including Sundays, to cover special field surveys.

Beginning with the assignment of thirty men in the first week, this force has been built up to about 600 men.

The men have been used on field and office studies in collecting, compiling and analyzing records which will prove of value to the Port Authority and other public agencies, and which could not otherwise have been collected because of the expense involved.

Among the projects upon which the Emergency Works Bureau force has been engaged are:

(1) Traffic counts to ascertain directional flow of traffic, street capacity, etc.
(2) Counts of commuter passenger traffic at important terminals in the Metropolitan Area.
(3) Records of the geographic distribution of steamship cargoes handled on the Brooklyn, Manhattan, and New Jersey waterfronts.

Other projects of similar character will be pursued during the early part of 1932.

Improvement of Facilities and Services

Private and public agencies in the port of New York, other than the Port Authority, completed extensive construction work and added new equipment during 1931.

City of New York

Appropriations totaling nearly $13,000,000 were made by the City of New York during the year 1931 for construction work on nine steamship piers on the Hudson, East River and Brooklyn waterfronts. Initial contracts have been awarded on all of these projects.

On the Hudson River waterfront work has been started on the construction of three of the five piers planned to accommodate the new superliners in the section between West 48th and West 52nd Streets. These piers will be 1,100 feet long and 125 feet wide with slip widths of 400 feet between. They will be designated as new piers 88, 90 and 92.

Progress was made during 1931 on several other piers under construction on the Hudson River waterfront. Work is advancing on the substructure of Pier 25, foot of North Moore Street, 900 feet long by 125 feet wide, which will

be leased to the Eastern Steamship Company for coastwise service. Construction of the substructure of Pier 32 at the foot of Canal Street is almost completed. This pier is 1,019 feet long by 125 feet wide. Upon it will be erected a two-story shed completely equipped for the handling of modern passenger vessels. It will be used, upon completion, by the North German Lloyd Steamship Company.

Very satisfactory progress has been made in the construction of Pier 34 located at the foot of Spring Street. This pier is approximately 1,024 feet long by 160 feet wide. It is built directly over the Holland Tunnel. During the construction period the Port Authority cooperated with the City of New York to prevent damage to the Tunnel. The pier and its shed will be completed during 1932 and will be occupied by the Clyde-Mallory Line coastwise service.

The initial contracts have been awarded for the construction of Pier 45, located at the foot of West 10th Street. This pier will be 900 feet long by 100 feet wide and will be leased to the Italian Lines for use by the ships of the Cosulich, Lloyd Sabaudo and Navigazione Generale Italiana.

On the East River waterfront initial contracts have been let for demolition of the old piers 9 and 10 preliminary to building new pier 9 at the foot of Old Slip. The new pier, which is to be 650 feet by 140 feet, will be leased to the Munson Steamship Company for the accommodation of their New York-West Indies service.

On the Brooklyn waterfront old pier 6, New York Dock Company, is under reconstruction by the Board of Transportation of the City of New York. The Board of Transportation took over this pier in connection with the Cranberry Street Rapid Transit Tunnel construction. The new pier will be 532 feet long by 125 feet wide.

Other Pier Improvements

In addition to the construction program of the City of New York, progress has been made during 1931 on projects financed by private capital. Piers 15 and 16 East River, owned by the City of New York and under lease to

the Atlantic, Gulf and West Indies Steamship Company, have been extended and improved by the lessee. Both piers have been extended 50 feet giving a total length of 600 feet. New sheds have been erected on Pier 16 and on the bulkhead.

The Erie Railroad Company completed construction of Pier D, Weehawken, early in 1931, which is now being used by the Bernstein Line for the handling of unboxed automobiles to Continental Europe. This pier is 832 feet long by 101 feet wide and has a three story superstructure equipped with special shipside elevators for handling automobiles.

The Erie Railroad has also under construction Pier 8, Jersey City. This pier is 1,050 feet long and 70 feet wide and is served by railroad tracks. The pier will be covered with a three-story shed to be used for storage and handling westbound lighterage freight.

Pier 15, Hoboken, which was damaged by fire early in 1930, is being reconditioned by the Lamport & Holt Line.

Railroad Terminals

During 1931 excavation and foundation work was started by the New York Central Railroad for its Spring Street Freight Terminal, part of the West Side improvement program, which includes the electrification and grade separation of trackage. The Spring Street Terminal, located between Washington and West streets, will cost approximately $12,000,000.

Foundation work for the New York Central's new yard at 30th Street in connection with the West Side improvement project is also in progress. Construction has also been started on a new cold storage plant to be located at the south side of West 14th Street, east of 10th Avenue.

Early in 1931 the Pennsylvania Railroad opened an additional bulkhead pier station at the foot of Desbrosses Street for the receipt and delivery of carload and less-than-carload freight.

The Lehigh Valley Railroad opened new yard and station facilities for handling carload and less-than-carload freight in the old 27th Street yard in connection with the erection of the Starrett-Lehigh Building at that point.

New Equipment

New electric crane equipment has been installed by the Delaware, Lackawanna & Western Railroad at Pier 3, Hoboken, and by the Lehigh Valley Railroad at Poinier Street yard, Newark, and at Grand Street, Jersey City. New Diesel-electric locomotives have been put in operation by the New York Central Railroad on the West Side freight line.

SECTION I—DEVELOPMENT AND PROTECTION OF THE PORT

Part 2—Port Protection

Boston Differential Case, I. C. C. Docket 23327

As noted in the Tenth Annual Report, the City of Boston and the Boston Port Authority, by complaint filed in April 1930, requested the Interstate Commerce Commission to prescribe differentially lower rates to Boston in place of present parity of rates with New York, and to order publication of separately established rates and charges for terminal services, such as lighterage, carfloatage, motor-truck service to off-track stations, etc. The Port Authority intervened in opposition to the Boston complaint and participated at hearings in Boston, New York City, and in Brooklyn. Briefs opposing the Boston complaint were filed.

The Port Authority took the position that the Boston complaint was opposed by the business interests of New England; that nothing in Boston's geographical and transportation situation justified lower rates than the rates via the Port of New York; that the complaint was simply an opportunist attempt to take advantage of the lighterage complaint filed by the State of New Jersey; and that the complaint was based on unsound principles and was contrary to law. The Port Authority will continue to participate in these proceedings until the matter is determined.

Lumber Loading Charges at Newark, I. C. C. Docket 24254

The 1930 Annual Report mentioned the Port Authority's activity in seeking a removal of the discrimination against the Port of New York, particularly at Port Newark, in the matter of absorbing lumber loading costs. The

carriers absorb such costs at the competing ports of Philadelphia, Baltimore, and Wilmington but fail to do so at Port Newark.

In February the City of Newark and the Newark Chamber of Commerce, together with several lumber dealers, filed a complaint against the Pennsylvania Railroad bringing the matter formally to the attention of the Interstate Commerce Commission. The Port Authority intervened and supported this complaint. In September the Interstate Commerce Commission examiner recommended the removal of the discrimination. The Examiner's report completely sustains the contentions of the applicants and the Port Authority. It is anticipated the Commission will uphold the examiner's report and remove the discrimination.

Carriers Application for Increased Rates, Ex Parte 103

In connection with the application of the carriers to the Interstate Commerce Commission for permission to make a horizontal fifteen per cent increase in freight rates, the Port Authority took part in order to protect the interests of the Port of New York. No opinion with respect to the necessity for, nor the measure of, the proposed increase was expressed but the Commission was requested to make no changes in the present port differentials should a general increase be granted. The Commission's decision to permit a limited increase protects the port differentials. The permitted increase is based on a flat charge instead of a percentage of the old rate and therefore puts the Port of New York at no further disadvantage in relation to competitive ports enjoying differentials.

Class Rates Within New York State, P. S. C. Docket 5294

A general revision of the intrastate class rates in New York State was proposed by the carriers as an outgrowth of the decision of the Interstate Commerce Commission in Eastern Class Rates Investigation, I. C. C. Docket 15,879. On November 21, 1931, the Public Service Commission of the State of New York handed down a decision, substan-

tially upholding the views of the Port Authority. At the hearings before the Commission, the Port Authority contended that rates from New Rochelle, Mt. Vernon and stations on the New Haven Railroad in the easterly part of the Bronx to destinations north and west of Greendale, New York, should be the same as the rates from Manhattan and other sections of the Port District. The Commission's decision upholding this contention will help industries and shippers in the Bronx and strengthen the unity of the port from a rate standpoint.

Export Steamship Rates, U. S. S. B. Docket 72

The Atlantic Refining Company of Philadelphia has filed a complaint against various steamship lines sailing to African ports alleging discrimination against Philadelphia shippers and in favor of shippers through the Port of New York in the movement of petroleum products. The case has been set for hearings before United States Shipping Board on January 13, 1932. The Port Authority intervened in this case in order to clarify the interpretation of the Shipping Act relating to prejudice and discrimination and to protect shippers through the Port of New York from the necessity of subsidizing special and exceptional service to out-port shippers.

Miscellaneous Investigations

Import, Export and Intercoastal Rates

On September 18, 1931, the Trunk Line Association, New England Trunk Line Association, and the Central Freight Association lines held a joint hearing at Buffalo at which proposed export, import and intercoastal rates between North Atlantic ports and the middle west were considered. The Port Authority was represented at the hearing and supported the carriers' proposals. These proposed rates will preserve the differential relationship between the North Atlantic ports which has existed for many years and which the Porth Authority is making every effort to keep from being widened to the advantage of competing ports. The carriers have filed with the Interstate

Commerce Commission, application for authority to make some departures from the long and short haul provision as contained in Section 4 of the Interstate Commerce Act, in order that the rates proposed at the Buffalo hearing might be established. The Port Authority urged the granting of such authority. In December the Interstate Commerce Commission granted the authority and the carriers have filed tariffs effective January 3, 1932.

Export, Import and Intercoastal Rates between Albany and the Middle West

On November 21, 1931, the Trunk Line Association held a public hearing on a proposal to extend the Baltimore port differentials on export and import traffic to similar traffic at Albany. At the hearing, the Port Authority opposed in principle the extension of port differentials and favored in principle the equalization of all ports, adding however, that if the differential basis of rate making is to be continued, Albany is entitled to equality with Baltimore.

Lighterage of L C L Eastbound Freight

On November 21, 1931, the Trunk Line Association held a public hearing on a proposal to amend New York lighterage tariffs revising the eastbound arrangement, under which LCL freight with carload freight eastbound is lightered without charge, by the establishment of a charge of 3½c per hundred pounds on such LCL eastbound freight. Protest was entered on behalf of the Port Authority against the establishment of this proposed charge, on the ground that it would unjustifiably increase cost of handling freight in the Port of New York. The proposal was unanimously opposed by all shippers present at the hearing and it is believed that the proposal will not be adopted.

Proposed Increase in Heavy Lift Charges

In December 1931, the New England Freight Association proposed to establish a rule providing for extra charges at New York Harbor for handling heavy articles weighing over three tons. The charges proposed by the New Haven exceeded those assessed by the Trunk Line Railroads at

New York and the Port Authority therefore protested against the establishment of the proposed regulation unless and until the charges proposed were amended to conform with present charges assessed by the Trunk Lines operating in New York Harbor. There is no apparent reason for charging New England shippers more than other shippers to do business in the Port of New York.

Custom House Bonds

In September, 1931, the Treasury Department announced that surety bonds filed in connection with the importation of merchandise at the Port of New York would be cumulative and after a sufficient number of entries had been made to equal the amount of the bond as originally filed, individual bonds would have to be filed on subsequent entries. This procedure would add materially to the cost of imported goods through the Port of New York. The matter was investigated in cooperation with several trade interests and as a result of a protest the effective date was indefinitely postponed.

George Washington Bridge as seen from New York shore south of bridge

SECTION II—CONSTRUCTION

Part 1—Bridges

George Washington Bridge

Further substantial progress was made during the past year in the construction of the George Washington Bridge, with the result that it was possible to open the structure to vehicular and pedestrian traffic at 5 A. M. on Sunday, October 25, 1931. The date of opening—marking the conclusion of almost exactly four and one-half years work—was approximately eight months in advance of the date which had been anticipated when construction was commenced in 1927. All of the construction work has not yet been completed, but the remaining work can be done without interruption of traffic.

The main structure of this bridge is of the wire-cable suspension type with a main span 3500 feet in length, a suspended side span 610 feet in length on the New Jersey side, and a suspended side span 650 feet in length on the New York side. The steel towers which support the cables rise to a height of approximately 600 feet above the river. The four cables are each 36 inches in diameter and each composed of 26,474 parallel wires. The bridge has been constructed with a single deck, paved with two separate roadways for vehicular traffic, each 28 feet 9 inches wide between curbs, and two sidewalks approximately 10 feet wide. The roadway capacity of the bridge can be increased in the future by additional paving on this deck to provide up to eight lanes of vehicular traffic. Furthermore, the bridge has been designed for the construction in the future of a second deck, which is to be located below the existing deck and is intended for use by rapid transit passenger railway traffic. The clear height for shipping will be 215 feet at mid-span after the lower deck has been constructed.

The approaches to the bridge have been designed with a view to distribute traffic to a sufficient number of highways on each side to avoid congestion, to avoid roadway

crossings at the same grade and, so far as possible, left turns against traffic. On the New York side the approach provides roadways to street level in the vicinity of Fort Washington Avenue, roadway connections from this point to Riverside Drive, and connection by vehicular tunnel with Amsterdam Avenue and Washington Bridge over the Harlem River. On the New Jersey side direct connections are provided with the principal highways. All vehicular toll collections are made on the New Jersey side.

At the beginning of the year, erection of the floor steel for the main bridge had been practically completed, and the final members were put in place January 26, 1931. Construction work had already been started in 1930 on the main portion of the New York approach, the vehicular tunnel in West 178th Street, and the Riverside Drive connections of the New York approach. Excavation for the New Jersey approach had been completed during 1930.

A contract for the paving and completion of the New Jersey Approach was awarded in January, 1931; a contract for the paving, railings and other construction necessary for completion of the main bridge was awarded in March, 1931; a contract for electrical equipment was awarded in June, 1931; and contracts for the construction of the toll buildings and for flood light towers for the toll areas were awarded in July and September, 1931. These contracts provided for completion of principal construction on the bridge structure and approaches. Contracts were made in June, 1931, for construction of the field office and the necessary mechanical equipment in it; in July, 1931, for alterations to an apartment house in New York in conjunction with the Riverside Drive connections; and in August, 1931, for final painting of the structural steel towers. Practically all of the work under these contracts, as well as under contracts awarded previously, has been completed. Wrapping of the cables with wire was begun in July 1931, after the paving had been put in place. The wrapping and final painting of the cables were completed in October, and the footbridges were removed prior to the opening of the bridge to traffic.