# FINAL REPORT

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## of the

# South Jersey Transit Commission

to the

### SENATE AND GENERAL ASSEMBLY

of

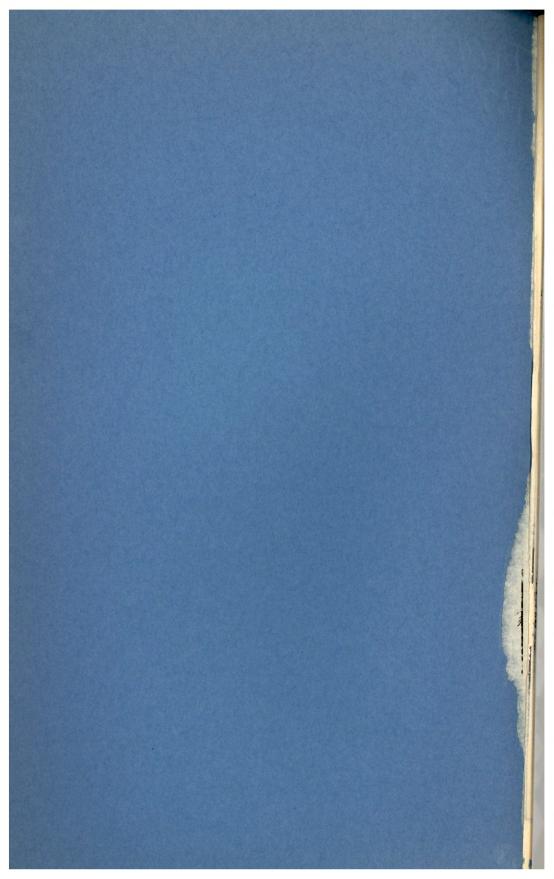
#### THE STATE OF NEW JERSEY

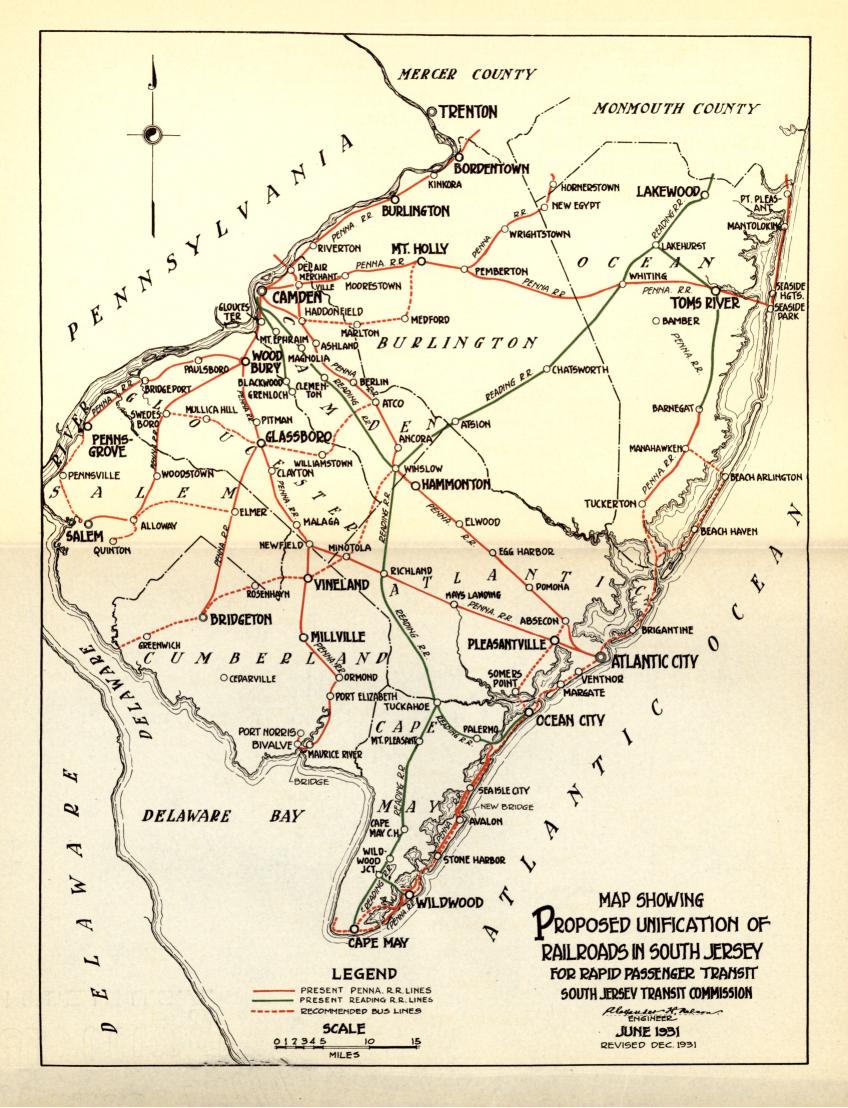
1933



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### THE STATE OF NEW JERSEY

1933



Office: Guarantee Trust Building, Atlantic City, N. J.

# Commission

JAMES V. MORAN, Chairman Camden County

ENOCH L. JOHNSON Atlantic County

ERNEST H. RIGG

\*KILLAM E. BENNETT Burlington County

HENRY H. FITHIAN

Cumberland County

GUSTAVUS W. BERGNER Cape May County

**Gloucester** County

CLIFFORD M. ELWELL Ocean County

DAMON G. HUMPHREYS Salem County

ALEXANDER H. NELSON, Engineer Atlantic City, N. J.

\*Deceased September 18, 1933.

#### TO THE SENATE AND GENERAL ASSEMBLY OF THE STATE OF NEW JERSEY:

The South Jersey Transit Commission was appointed under the provisions of Chapter 251 of the Laws of 1929, "To study and report upon the best plan, or plans, to be followed in providing a comprehensive scheme of rapid passenger transit between the several communities of the Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Ocean and Salem, as well as between such communities and the City of Philadelphia." By Chapter 256 of the Laws of 1932, the Commission was continued until July 1, 1933.

On October 2, 1929, the Commission completed its organization and it submitted a preliminary report to the Legislature of New Jersey on January 15, 1930. This report proposed, among other things, a rapid transit line to connect the Camden railroad terminals, or a joint terminal, running through a terminal for busses and proceeding, by the Delaware River Bridge, to Philadelphia and a suitable connection with the rapid transit system. This was the original description of the first definitely planned rapid transit line between Philadelphia and Camden, which was developed into the Transit Commission's "Step No. 1," as described in the Commission's report of January 21, 1931, and will be referred to later in this report.

The Transit Commission recognized that its first efforts should be exerted in connection with the rapid transit over the Delaware River and it is interesting to note that this has developed as a greater problem than the consolidation of the railroads in the South Jersey area, which latter result has been entirely accomplished while the former problem, although having all essential developments, including financing, arranged, is not yet physically accomplished.

This report will handle the two problems under separate headings and, as directed by statute, will embody such recommendations as the Commission believes to be appropriate and important.

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#### Rapid Transit Between Philadelphia and Camden

During 1930 much effort was exerted in the collection of records and other data essential to the determination of the correct plan for rapid transit over the Delaware River, and in harmonizing the railroads and other transportation agencies to the developing of a comprehensive plan. The effort to interest the City of Philadelphia in the improvement was based on the theory that development of South Jersey would be matched by growth of bank deposits and general business in Philadelphia, as the result of intercity rapid transit.

Philadelphia transit officials came to recognize that the proposed connection of Philadelphia's subway system with Camden would be a real asset to Philadelphia and "The only profitable, city rapid transit unit now in existence or contemplation."

It was agreed that the proposed rapid transit line was essentially an extension of the existing, or planned, traffic facilities in the City of Philadelphia, and many conferences were necessary in harmonizing the views of our Commission and the transit authorities of Philadelphia, which latter urged connecting the proposed rapid transit line with the 8th Street Subway then under construction. For a considerable time the Transit Commission urged a two-track subway under Arch and Filbert Streets to be operated by the railroads and to be built as a four-track subway so as to include, later on, tracks that would eventually operate through the under-river tunnel proposed in the Transit Commission's "Step No. 2." This plan was impossible of realization because of our inability to interest the railroads in the operation of a suburban or local transportation system, even though it would later on become a branch, or feeder, for express operation. The final agreement of all parties at interest comprehended connecting the rapid transit line with the 8th Street Subway, as proposed by the Philadelphia transit authorities.

On December 18, 1930, the working committee of a general conference committee, previously appointed by Governor Morgan F. Larson, filed its report with the Governor and recommended, among other things, the construction and operation of a high-speed, rail transit line across the Delaware River Bridge. The filing of this report was the initial act in a series of energetic

activities which provided a reorganization of the Delaware River Bridge Joint Commission with all the necessary powers and authority to accomplish, among other things, "Step No. 1" of the South Jersey Transit Commission's recommendations. The enabling statutes, enacted by the legislatures of Pennsylvania and New Jersey, were based upon bills previously prepared and submitted to the two legislatures by the Legal Department of the Delaware River Bridge Joint Commission. The Transit Commission's reports of January 21, 1931, and March 2, 1932, record all these developments in detail.

A transportation committee was promptly appointed by the new Delaware River Joint Commission to confer with representatives of the Philadelphia Rapid Transit Company and the Public Service Coordinated Transport, which conferences resulted in the appointment of a subcommittee, representing the three interests, to make a survey of travel between Camden and Philadelphia for the purpose of furnishing a basis for estimating the revenue to be obtained for the proposed high-speed transit line between Philadelphia and Camden. On September 30, 1931, this subcommittee filed a highly comprehensive and interesting report, which enabled the Delaware River Joint Commission to compute the dependable revenue for the proposed rapid transit line and so formulate a plan for complete reimbursement to the two Commonwealths and the City of Philadelphia, in connection with the original financing of the bridge.

The unfavorable bond market which existed then, and has continued since, has operated to delay offering to the investing public even sufficient bonds to finance construction of the proposed rapid transit line. There has been continuous effort made to arrange for the financing of the construction of the rapid transit line by funds to be borrowed from the Federal Government, and this has been practically accomplished.

The Commonwealths and the City of Philadelphia have been reimbursed by issuing bonds to them, which may be disposed of as they may determine.

During this season of delay in accomplishing the financing of the project there developed an attitude, on the part of the City Council of Philadelphia, that was not in accord with the previous disposition of that governing body toward the rapid transit line, and various organizations in Camden County, probably as the result of not thoroughly comprehending the project in all of its details, have shown their antagonism, occasionally with unjustifiable accusations and unreasonable censure. The Delaware River Joint Commission commissioned its Chief Engineer, Ralph Modjeski, to prepare a report, with preliminary plans, for a highspeed, rail transit line. This report was filed with the Transportation Committee of the Commission on November 16, 1932, and, after many hearings and open discussions, the report was adopted by the Commission on January 20, 1933.

Upon the continuation of adverse criticism by certain Camden County organizations and on appeal to him, Governor A. Harry Moore appointed a Commission of three prominent and disinterested engineers of New Jersey "To examine into the controversy concerning the proper use of the facilities of the Camden-Philadelphia Bridge and the use of those facilities for rapid transit service." The members of this Commission were Philander Betts, C. E., associated with the Public Utility Commission of New Jersey; Louis Focht, C. E., associated with the N. J. State Board of Taxes and Assessments, and C. F. Bedwell, C. E., Construction Engineer of the N. J. State Highway The report of this Engineers' Commission, filed Commission. under date of April 20, 1933, stated that the plans of the Delaware River Joint Commission, prepared for the Commission by its Chief Engineer and amplifying "Step No. 1" as heretofore proposed by the South Jersey Transit Commission, "Provide the best solution for both Camden itself and the prompt and regular delivery of suburban passengers to the subway, and thence to their destinations, in Philadelphia." The report also reassures the public as follows: "The location of the subway, in accordance with the plans of the Delaware River Joint Commission, in no way interferes with the further extension of the subway over any or all of the eight existing railroad lines which may be reached from the point of divergence, a short distance east of the Broadway Station in Camden." The report further states "The matter of long distance, heavy railroad service cannot be solved by the operation of heavy trains over the bridge, but by the eventual construction of a tunnel under the river, through which trains may

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run to and from the Pennsylvania and Reading Railroad Stations in Philadelphia."

Insofar as any activities have been reported, all adverse criticism of, and opposition to, the rapid transit line as designed has disappeared, and there seems now no particular obstacle to accomplishment of modern rapid transit between Philadelphia and Camden, which will be essentially an extension of the Philadelphia Rapid Transit System to a union railroad station in Camden, beyond which extensions into the Camden suburban area, and further, may be readily arranged for as need for such develops.

Definite and general progress in a return toward normal business conditions have taken care of the financial problem and there has been awakened, in Philadelphia, an interest that recently was latent, and has operated to delay completion of preliminaries that are essential to actual commencement of the improvement. The project has now been developed to the point where the preparation of specifications and contract drawings is in active progress.

#### Consolidation of Railroads

Competitive activities of the West Jersey and Seashore and the Atlantic City Railroad Companies terminated with the signing of their consolidation agreement on November 23, 1932, which consolidation was promptly approved by the Public Utility Commission of New Jersey. On a favorable report from the Utility Commission under date of April 11, 1933, based on public hearings in the State of New Jersey, and after its own hearing in Washington, D. C., the Interstate Commerce Commission approved of the consolidation on June 10, 1933.

Thus terminated a competition which, although formerly beneficial to the South Jersey area through pioneering activities on the part of the railroads and in certain other ways, was always a wasteful duplication of capital investment and operating expenditure. With the possible exception of certain municipalities between Camden and Winslow Junction, through which length the railroads are never more than two and one-half miles apart but which municipalities were directly served, generally, by but one of the railroads, the duplication was disadvantageous.

A more evenly distributed operating schedule of trains, reduction in fares, better terminal stations and service, together with the elimination of many grade crossings, are some of the advantages to be gained from the consolidation. Busses, airplanes and private automobiles furnish all the competition that may be needed to insure full consideration of the rights of the traveling public to proper service.

We expect such coordination of transit facilities as will very greatly improve transportation advantages in the entire South Jersey area. Busses have acquired a very definite place in the general scheme of transportation and one of distinct importance. but their true value and real advantage to the traveling public lie in comparatively short runs and as feeders to the high speed service of railroads, which guarantee safety, ease and comfort that are not possible in motorbus transportation, particularly in long distance runs. Low cost and flexibility of operation, frequent service, convenient pick up and discharge, and novelty or varietv have developed the popularity of the busses and will continue them as an essential transportation facility. To them is due, to a considerable extent, appreciation of the traveling public for the awakening of the railroads to their responsibilities to progress along lines that have been overlooked in their efforts to provide for increasing overhead and operating expenses, taxation and, occasionally, over-capitalization and other conditions operating to impose unreasonable costs on the traveling public.

Because of existing conditions, financial and otherwise, the only feasible plan for consolidation of the railroads was one under which the Atlantic City Railroad maintains and conducts the operations of the unified Atlantic City Railroad and West Jersey and Seashore Railroads. This was accomplished by the Pennsylvania Railroad (parent company of the W. J. & S. S. R. R.) assigning to the Atlantic City Railroad its lease on the West Jersey and Seashore Railroad property; by the Reading Railroad (parent company of the Atlantic City Railroad) transferring to the Pennsylvania Railroad two-thirds of the outstanding stock, both common and preferred, of the Atlantic City Railroad Company, practically all of which stock being owned by the Reading Railroad Company; by each parent company cancelling certain obligations, as set forth in the agreement, and by joint guarantee of payments coming due under the assigned lease, above referred to.

The Delaware River Railroad and Bridge Company is not included in the consolidation, also the Philadelphia and Camden Ferry and the Delaware River Ferry are omitted.

The existing West Jersey and Seashore line between Sea Isle City and Stone Harbor is abandoned, which eliminates the existing Townsends Inlet Bridge. There is considerable adverse criticism to this, particularly by residents and property owners in the area affected. The consolidated company promises adequate service by busses from Stone Harbor and, if necessary, by maintaining existing tracks between Avalon and Stone Harbor, with a bridge spanning the thoroughfare at the latter.

Certain suggested improvements, which either directly or indirectly involve the Central Railroad of New Jersey, have not been effected but, with the control and operation of the road becoming more immediately a Reading Railroad activity, there are favorable prospects for the near future. These improvements are in the Toms River area of Ocean County and the Maurice River area of Cumberland County. The former involves operation of Central Railroad of New Jersey tracks, between Lakehurst and Barnegat via Toms River, by the Tuckerton Railroad, and the abandoning of the present tracks of the latter company between Whitings and Barnegat. This will be to the advantage of the interested municipalities, as well as the railroads themselves.

The other project, which is located in the area adjacent to Maurice River in Cumberland County, at the mouth of which river are located the State's principal fishing and oyster industries, is also bidding for improved transit facilities.

At the present time the West Jersey and Seashore Railroad terminates at Morris River Station and the Central Railroad of New Jersey terminates at Bivalve, which terminals are separated by the river and are directly opposite to each other. The Transit Commission report of March 2, 1932, suggested a combination railway and highway bridge at this point and the abandonment of the Central Railroad of New Jersey tracks between Bridgeton and Port Norris, which latter point would then become the terminal of the West Jersey and Seashore Railroad. A local suggestion is that the West Jersey and Seashore Railroad should directly connect with the Central Railroad of New Jersey tracks at, or near, Irving Avenue Station in Bridgeton, and abandon all other stations in that municipality. Under this plan the West Jersey and Seashore Railroad would operate a loop starting and terminating at Glassboro and crossing the Maurice River on the proposed bridge between Bivalve and Morris River Station.

Although the physical plan of the consolidation, as developed to date, does not exactly agree with the ideal plan submitted by the Transit Commission, in several ways already indicated, yet it goes a long way toward relief and we are sure that the recognized alertness and the developed ability of the officials of the consolidated company are a guarantee that desirable improvements and advantageous additions will at least keep pace with growing needs. The Transit Commission's long study and consequent familiarity with transit conditions in the South Jersey area, particularly the needs that the various municipalities have long felt for better transit advantages, permit our registering in this report certain revisions and extensions of the existing facilities which, we respectfully submit, should have careful consideration and, at least in the case of several of them, prompt action. We recognize that sometimes there are operating conditions, not apparent to an outside observer, which render impossible plans that otherwise seem ideal, but we earnestly urge the belief that there is still need for pioneering activities on the part of railroads in development that will return enormous dividends. An outstanding example of this principle was the almost unprecedented development which occurred in Western Long Island as the result of Pennsylvania Railroad under-river tunnel from the new terminal station in New York to the island area.

Another example is the Delaware Railroad and Bridge Company property (the Delair Bridge), which not only has proved an altogether advantageous investment for its owners but which is responsible, in a big way, for the enormous development of Atlantic City during the period commencing at the completion of the bridge.

We believe that an under-river tunnel between Philadelphia and Camden, which is the Transit Commission's "Step No. 2," and which has been described in some detail by previous reports, would work a wonderful development in the entire South Jersey area and, if this facility can be hastened through an investment by the State of New Jersey on a long-term, low return basis, as a subsidy in the construction of it, we are confident that the return, in the way of taxes derived by counties, municipalities and the State itself from development and increased real estate valuations, would abundantly reimburse the Commonwealth.

Provision has been made in the reorganization of the Delaware River Joint Commission, (Chapter 200 of the Laws of Pennsylvania, approved June 12, 1931, and Chapter 391 of the Laws of New Jersey, approved June 30, 1931) for cooperation of the Commission in promoting such an improvement.

#### Recommendations

Since recorded history began transportation has been a primary consideration and, slowly at first but gradually, the speed of transportation has grown in importance. As speed increased, safety and cost came in for consideration and, finally, comfort and ease demanded attention. In order that any transportation facility, at the present time, may be readily sold it must provide all of the above mentioned qualities in about the order stated.

For many years after the discovery of steam as a motive power, locomotives were rapidly developed, the economic limit in traction being reached many years ago through inability to provide additional grate area. Increased speed for present standard trains involves greatly added cost of construction and maintenance of tracks, and the supports of same. Reducing the weight of equipment, while maintaining grate areas, will yield increased train speed but resulting vibration, along with wear and tear on the locomotive mechanism, offers great difficulties.

The development of hydro-electric power plants and modern steam operated power plants close to the sources of fuel supply, together with great improvement in high-voltage power transmission, now offer electric current at a cost that bids fair to eliminate steam as the motive power for practically all railroads having frequent train operation

The internal combustion engine has developed many transportation facilities, including automobiles, airplanes, floating carriers and others, and it is now establishing itself as a source of power for railroad passenger train operation. At the present stage of development, the Diesel, two-cycle engine, with a directly connected generator and operating through special motors, is the preferred plan. Such a unit power plant, installed in a three-car train of greatly reduced weight and particularly designed to minimize air resistance, promises high speed and low cost of operation. There is a distinct field for this character of equipment in sections of the country where water power is absent and there are no convenient sources of fuel supply.

Near Berlin, Germany, in 1903, an electrically driven car, weighing 100 tons and carrying observers, maintained a speed of 126 miles per hour on ninety-two pound rails supported by ballasted, wooden ties. The demonstration satisfied the observers as to the safety of a railroad train running at a speed of 125 miles per hour, as indicated in their report. This was thirty years ago.

The highest average speed now being used in the United States, on any regular run between stations, is 60 miles per hour, as disclosed by current schedules. This means a maximum speed of about 65 miles per hour, over limited distances where favorable conditions of track exist. In other words, our best locomotive equipment gives a speed, under favorable conditions, of about 52% of the maximum, safe speed that was demonstrated 30 years ago.

1. This brings us to our first recommendation—a considerable increase in the speed of trains.

The natural and most certain method for the railroads to pursue in winning back business from the busses, which are limited in their speed on the highways, is to offer, say, a twenty-five percentum reduction in the present running time of trains between important points, without increased fare. If, in the accomplishment of increased speed, a reduction in fare and an increased frequency of train operation can be offered, the bus situation, insofar as it is a menace to the railroads, will be under control. We do not believe that it is practical, with the present permanent population in the South Jersey area, to increase the frequency of trains unless the speed can be increased and the operating cost reduced; we submit that electric power and lighter weight, stream-line trains will solve the problem. We recommend standard electrification of tracks to Atlantic City and the operation of through trains, south of Winslow Junction, at increased speed, by self-contained, electric-power plants, or otherwise, until such time as complete electrification in the South Jersey area may be accomplished.

2. We recommend certain revisions and extensions of the present physical consolidation plan as follows:

- A. The construction of a railroad and highway bridge, at the cost of the railroads and the State Highway Department of New Jersey, to span Townsends Inlet. This will give Seven-Mile-Beach, on which are located Avalon and Stone Harbor and which is generally conceded to be the best bathing beach on the New Jersey coast, a direct and favorable railroad connection with Philadelphia which, in all probability, will promptly develop the beach at least up to the popularity of the next adjacent beach to the South, on which are located Anglesea and the Wildwood municipalities. The bridge will also furnish a missing link in the Coastal Highway, so that, with the construction of State Highway Route S4A between Tuckerton and Brigantine and a branch of this route to Beach Haven, there will be a continuous coastal highway from Barnegat City to Hereford Inlet. The bridging of this latter inlet, which presents no particular difficulty, and the extension of the highway from Wildwood Crest to a connection with State Highway Route 4 near Cape May, will complete the entire Coastal Highway except a bridge at Barnegat Inlet and a short strip of road on Island Beach between the Inlet and Seaside Park.
- B. Abandoning the use of Tuckerton Railroad tracks from Whitings to Barnegat in favor of the tracks of the Cen-

tral Railroad of New Jersey from Lakehurst to Barnegat via Toms River. The purpose of this revision is to give improved service to Toms River and to relieve the present unprofitable operation between Whitings and Barnegat.

C. A bridge, similar in general character to the bridge proposed for Townsends Inlet, to span the Maurice River between Morris River Station and Bivalve. We recognize the possibility of transferring all docks to the Easterly side of the river, also the objection by navigating interests to such a bridge, which will result in increased cost because of the elevation at which the bridge will be constructed to meet government requirements; but we submit that improvement to the fishing industry is entitled to consideration by the consolidated railroad and that improvement to the Delaware Bay shore area of Cumberland County, which will result from an improved highway from Salem to State Highway Route 49 near Delmont, is full justification for an investment in the bridge by the State Highway Department.

3. The section composed of Salem, Cumberland and Gloucester Counties presents a considerable problem and this Commission is duty bound to recommend a plan by which the inhabitants of that area may have the advantage of better transportation facilities than at present exist there. The transportation of passengers is a fairly constant activity while the transportation of freight, because of the agricultural character of the area, is much more seasonal.

Because Woodbury is a natural center from which present railroad lines radiate, except that the line which terminates at Bridgeton coincides with the Millville line between Woodbury and Glassboro, we have studied the possibilities of continuing rapid transit service, which now terminates at Broadway Station in Camden, over the present electrified tracks of the consolidated railroad to a supplement terminal at Woodbury. This does not mean that all rapid transit trains should continue through Broadway and we realize that it involves operating complications, at Broadway, of a nature to which we have heretofore referred in this report that might make the plan difficult, or even impossible, of realization. Such a plan, under favorable operation, would give the principal municipalities in the aforesaid district an advantage of not less than fifteen minutes in entering or leaving the shopping and business districts of Philadelphia.

4. Familiarity with the situation existing in our own area, together with our observation in neighboring states and a general knowledge of the traffic needs of the country as a whole, forces upon us the recognition of a condition that is even now a national problem in connection with our traffic policy, and which constitutes an economic burden of no small importance. An unequal distribution of transit facilities and improper appreciation of their relative values need to be corrected.

Our legislative activities have written into our statute books an abundance of laws, and we have appointed authorities that are charged with regulating different phases of the problem, but coordination of the work of these separate agencies is needed and this requires careful study by experts of highly developed judicial ability, broad comprehension and unquestioned fairness.

There is definite need, in a proper traffic scheme and policy, for all of our present transportation facilities, and the problem is to place each in its proper relative position in the securing of an ultimate balance that will operate for the greatest good of the greatest number. We recommend that an exhaustive study of conditions and a compilation of existing reports, especially in areas where the traffic problem is acute, be made for the purpose of accomplishing rational coordination of transportation facilities.

We are witnessing conditions that, through promotion of what is really subsidized transportation over our improved highways and waterways, are tending to force the railroads to operate at lower rates. By assessing user-taxes or otherwise, eventually the subsidy will be withdrawn, which will put each facility on a basis of making rates that comprehend all items properly entering into the cost of the transportation furnished; in other words, a passenger or shipper will pay the actual and total cost of the transportation of himself or his goods, by whatever facility he may select for the transportation. 5. The frontispiece of this report shows what has been accomplished in the unification of the railroads, together with certain additions and corrections, described elsewhere in this report, that we believe should be included in the consolidation. We realize that at least two of these suggestions—the bridges over Townsends Inlet and Morris River for joint use of railroad and highway traffic—are expensive and difficult of accomplishment by reason of the various interests concerned, but we believe that both are essential to "A comprehensive scheme of rapid passenger transit between the several communities of South Jersey," and we therefore urge their accomplishment.

#### Conclusion

It is interesting to note that the South Jersey Transit Commission's organization was of almost even date with the occurrence of the memorable crash in the New York stock market that precipitated our country into the world's worst financial and industrial depression. This development imposed conditions that made the Commission's operations much more difficult, and considerably delayed our progress. We believe that any lack of cooperation, or any show of actual opposition to our activities, has resulted from insufficient comprehension of the transit situation in its entirety, or from a misunderstanding of the Commission's method of approaching its objective.

We are glad to record our appreciation of the helpful aid of ex-Governor Larson and Governor Moore, as well as of many others in high authority, to whom we have appealed. Officials of the several railroads, with whom we have come in frequent contact, have been uniformly obliging and responsive to our efforts.

Consolidation of the railroads is already demonstrating its direct benefits to South Jersey and, given reasonable time to acquire planned terminal facilities, accomplish operation of trains over determined routes, and develop general operating efficiency along all lines, the consolidated railroad will supply much of advantage that has been denied us in recent years.

The intercity rapid transit line, which will connect with the consolidated railroad and the busses in Camden and will be in

operation by the time the consolidated railroad has accomplished efficiency of operation, will bring to us an opportunity for development which, we confidently believe, will be taken advantage of in such manner as will give to South Jersey a highly desirable metropolitan suburban district, an unusually prosperous agricultural section and an all-year seashore resort area that, for health restoring qualities and general attractiveness, will be without peer, or comparable rival, in the entire world.

#### Respectfully submitted,

#### SOUTH JERSEY TRANSIT COMMISSION,

JAMES V. MORAN, Chairman ENOCH L. JOHNSON GUSTAVUS W. BERGNER ERNEST H. RIGG KILLAM E. BENNETT\* HENRY H. FITHIAN CLIFFORD M. ELWELL DAMON G. HUMPHREYS ALEXANDER H. NELSON, Engineer

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\*Deceased September 18, 1933.

OCTOBER 10, 1933

#### SUMMARIZED EXPENSE ACCOUNT

#### From January 1, 1932

#### To July 1, 1933

Salaries-Engineering \$5,900.00	
Secretaria1 1,000.00	
\$6	6,900.00
Office Supplies and Services	169.49
Reports to Legislature	330.80
Tel. and Tel. and Postage	204.44
Chauffeur and Automobile	69.74
Commissioners' Traveling Expenses	363.40
Engineer's Traveling Expenses	312.95
Blue Printing	10.40

\$8,361.22

