METROPOLITAN RAPID TRANSIT COMMISSION

Office of the Executive Director

STAFF REPORT

RAPID TRANSIT NEEDS OF THE NEW YORK-NEW JERSEY METROPOLITAN AREA

DECEMBER 1957

THE STAFF

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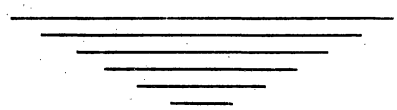
To the Members of the Commission

RAPID TRANSIT NEEDS OF THE NEW YORK–NEW JERSEY METROPOLITAN AREA



DECEMBER 1957

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(created by N. Y. L. 1954, ch. 801; N. J. L. 1954, ch. 44)

Suite 3100
50 Broadway, New York 4, N. Y.
WHitehall 4-4151

December 16, 1957

To: The Members of the Commission

This report is supplementary to the Project Director's Report of May 20, 1957, which was limited to the interstate transit needs between New Jersey and New York City.

It has as its purpose the presentation to the Commission in consolidated form of—

(a) Statistical information on the region and on the regional suburban passenger movements, which has been gathered from many sources.

(b) Summaries and analyses of the studies made by consultants on the rapid transit needs of the Westchester-Fairfield and Long Island Sectors which have been submitted separately from time to time.

The intrastate studies in New York lead to the same basic conclusion as did the interstate studies. There is presently no practical substitute for rail service to meet the travel needs of the 133,000 Westchester and Long Island commuters who enter New York City by railroad each day. Good and ever improving service is essential now and in the future.

The interest of the entire Metropolitan Area in good rail service was well demonstrated by the Project Director. It is just as true for Long Island and Westchester as for New Jersey. It was previously recognized in the provisions of the New York Railroad Redevelopment Corporation Law of 1954 as applied to the Long Island Rail Road.

As to construction of new transit facilities the studies demonstrate only one future need—additional access by rail transit from Long Island to mid-Manhattan across the East River.

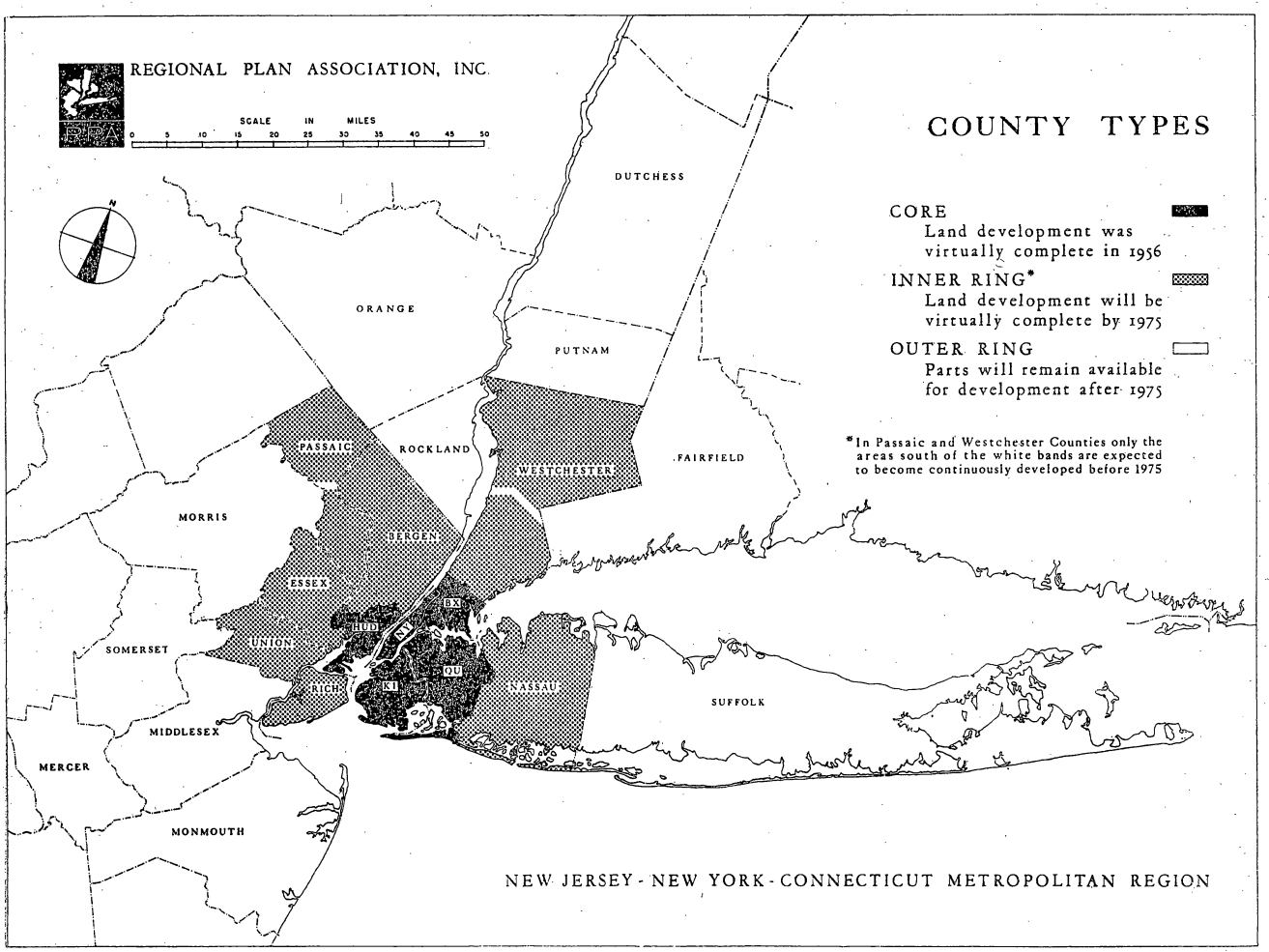
The general programs for rail transit improvements between New York City and the Westchester-Fairfield and Long Island Sectors, as presented herein, are based on the Project Director's trans-Hudson recommendations and as future extensions to them.

The Westchester-Fairfield and Long Island Sectors have the benefits of comprehensive suburban railroad service directly to mid-Manhattan and, in the case of Long Island, to Brooklyn. The Railroad Redevelopment Plan for the Long Island Rail Road provides for rehabilitation of that line and the Plan does not expire until 1966. The problems in those Sectors, therefore, are of lesser public urgency than the trans-Hudson problems.

Respectfully,

FRANK H. SIMON
Executive Director

PART I—GENERAL


REGIONAL PLAN ASSOCIATION, INC.
SCALE IN MILES
0 5 10 15 20 25 30 35 40 45 50
N
COUNTY TYPES
CORE
Land development was virtually complete in 1956
INNER RING*
Land development will be virtually complete by 1975
OUTER RING
Parts will remain available for development after 1975
*In Passaic and Westchester Counties only the areas south of the white bands are expected to become continuously developed before 1975
DUTCHESS
ORANGE
PUTNAM
PASSAIC
ROCKLAND
WESTCHESTER
FAIRFIELD
MORRIS
BERGEN
ESSEX
HUDS
BX
NY
UNION
SOMERSET
RICH
KI
QU
NASSAU
SUFFOLK
MIDDLESEX
MERCER
MONMOUTH
NEW JERSEY - NEW YORK - CONNECTICUT METROPOLITAN REGION

Section I

THE METROPOLITAN REGION

The Metropolitan Region is experiencing a dynamic growth of population and commercial activity and impressive changes in residential and employment characteristics are taking place. Determination of rapid transit needs of the area cannot be made strictly on the basis of past experience or present conditions but must take into consideration what the future may hold.

The Commission employed the Regional Plan Association, Inc. of New York to conduct studies leading to estimates of the distribution of population, the residence of employables, and the distribution of employment opportunities up to 1975 as well as studies of other factors which will affect the demand for mass transportation, such as distribution of commercial and cultural centers, the changing composition of central-core and suburban employment and the powerful social and economic forces which are shaping the future of the area.

The results of that study, as they affect the future trend of commuting, are summarized in this Section.

The Nation and the Region

The New Jersey-New York-Connecticut Metropolitan Region has contained a sizable share of the nation's people and economic activity from earliest days. Whether measured in terms of population, goods processed, buying power or shipping volume, the region's position in the nation has been impressive.

As to the next 20 years, it does not appear likely that this region will continue to increase its population quite as fast as the nation as a whole. Its share of national employment probably will decline slightly.

On the other hand, our region is continuing to develop perhaps more strongly than ever as the pre-eminent administrative, financial and management center of the nation. Indeed it is "head office" for much of the world's business.

Thus, we anticipate continued growth nearly paralleling total U. S. growth, with a gradual shift within the regional economy favoring administrative activities and retail trade and service. This will be balanced by a declining rate of growth in manufacturing activities.

This general regional shift will be especially pronounced in Manhattan, where even a stable level of employment probably will not be maintained in the next two decades. A small though significant employment loss is expected in Manhattan. This will be heaviest in manufacturing and those wholesaling industries requiring the transportation of bulky raw materials or products. Manhattan's decline should be retarded, however, by steady gains in management and financial activities and related services. Since the latter serve industrial enterprises the world over, their growth should continue for many years into the future.

36 million square feet of additional office space will have been constructed in Manhattan between 1947 and the end of 1958. About 80% of these new buildings will be located in the Midtown Area near Grand Central and 59th Street, while 20% will be situated in the Downtown Financial District. They will provide space for 300,000 employees, many of whom will be additions to the present working force.

The projected slight decline in Manhattan's total employment, if it occurs, will not necessarily result in a decline in commutation to Manhattan. Quite the contrary is possible. Commuting to Manhattan actually may increase as the result of a likely increase in the number of Manhattan's upper and middle income employees. These persons may tend to retain their Manhattan jobs while settling in the other boroughs and the suburbs for the sake of the amenities of suburban living.

Indeed, Manhattan's white-collar employment growth (of office and administrative workers) probably will attract even more commuters from the suburban counties than at present. At the same time, the fast growth of blue-collar employment (production workers) in the vast industrial districts and belts beyond Manhattan may bring about a substantial increase in reverse-commutation to these industrial areas from Manhattan's lower-income neighborhoods.

Regional Population Forecast

The Regional Plan Association estimates the 1975 population of the region at 19.1 million, an increase of 3,875,000 from the 1955 population of 15,225,000. Practically all of this increase will take place in the suburbs. The estimates for each county are shown in Table 1 in the Appendix.

During the next twenty years the rate of population growth is expected to be greater in the counties of the region west of the Hudson River than in those to the east.

New York City's future population increase will occur largely in Queens and Richmond. With the construction of the Narrows Bridge and the expansion of employment opportunities in Essex, Union and Middlesex counties it seems evident that Richmond's population may be expected to grow very considerably.

Vacant land resources in the inner suburban counties of New Jersey are limited. The land use survey indicates that only about 160 square miles of vacant land are suitable for residential expansion in Bergen, lower Passaic, Essex, Hudson and Union counties. On the basis of these vacant land reserves and an analysis of density trends, zoning regulations, and trends of population in the older cities, it is reasonable to expect that no more than 825,000 additional persons will reside in the inner ring of counties listed above. As a result, future population growth of the peripheral counties of the western section will be much greater than in the past. By 1975 a total of about one million more persons will be living in Monmouth, Middlesex, Somerset, Morris, Rockland and Orange. During the next twenty years 60 percent of the population growth west of the Hudson River will be in the peripheral counties compared to a 43 percent share between 1940 and 1955.

Employed Labor Force Forecast

In determining transit needs the residence distribution of the employed labor force is of greater importance than total population.

An expansion of the region's employed labor force to a level of 7.7 million in 1975 is forecast. This will be an increase of 1.4 million or 23 percent over the estimated 1955 employed labor force of 6.3 million.

The growth in employed labor force (as distinct from jobs) in each county or group of counties is generally related to the population growth. The employed labor force in the counties west of the Hudson is expected to increase by 795,000 in the twenty year period, from 1,760,000 in 1955 to 2,555,000 in 1975. The bulk of the employed labor force gain (575,000 of 620,000) east of the Hudson will be in the suburban counties. New York City's gain will be a modest 45,000.

The estimates for the next 20 years by counties are shown in Table 1 of the Appendix.

Employment Forecast

The Region

Total employment in the region increased from 5.8 million in 1947 to 6.3 million in 1955, a gain of 463,000 or 8.0 percent. By 1975, employment for the region as a whole is expected to rise to 7.7 million, a 23 percent gain. The annual rate of gain in the next twenty years will be about the same as the rate of gain of the past 8 years. The region's employment as a percentage of the nation will decline from about 9.9 percent in 1955 to about nine percent in 1975.

Population of the New York Metropolitan Region—1955–1975

(Thousands of Persons)

Area	*1955*	*1975*	*Increase* *Persons*	*%*
Core Area	8,695	9,000	305	3.5
Inner Ring	4,140	5,700	1,560	37.7
Outer Ring	2,390	4,400	2,010	84.1
Total	15,225	19,100	3,875	25.5

Counties West of the Hudson River

In view of these recent trends and the locational advantages which favor the west side of the Hudson River in many respects, it appears likely that the westerly shift in job patterns will continue. A sizable growth seems possible in northeastern New Jersey as part of a developing industrial complex stretching from Bergen County all the way south through Trenton, Morrisville, and Philadelphia to Wilmington.

It is expected that the western counties of the region will have about 28.6 percent of the region's total employment in 1975 in contrast to current share of 23.7 percent. Employment in the western counties is expected to increase about 50 percent from 1.5 million workers in 1955 to 2.2 million in 1975.

Counties East of the Hudson River

The eastern section's share of the region's employment is expected to decline from a current figure of 76.3 percent to about 71.4 percent in 1975. The estimated gain of 675,000 workers will produce a total of 5.5 million employees in 1975, 14.0 percent higher than the 1955 level of 4.8 million jobs.

The greater portion of this gain is expected to be concentrated in the suburban counties outside New York City. Employment in the suburban counties east of the Hudson is expected to increase to 1.5 million jobs by 1975, an increase of 585,000 jobs or 62 percent over the 1955 total of 940,000. Although New York City is expected to gain an additional 90,000 jobs by 1975, employment in Manhattan itself is expected to decline by about 240,000 jobs.

Employment forecasts by county are shown in Table 1 in the Appendix.

Prospects for Manhattan in Shopping, Recreational and Cultural Activities

Despite the recent decline in retail sales volume, Manhattan's shopping areas are by no means doomed. The central business district in Manhattan still offers a greater number of retail stores with a larger selection of merchandise by far than the largest of the suburban stores and centers. Hence, Manhattan should retain a unique attraction for both the city and the suburban shopper as well as for an ever-growing number of visitors to the region.

As to the major segment of amusement and cultural activities, there is little possibility that Manhattan's pre-eminence will be challenged by the suburban counties. A distinction must be made, however, between metropolitan and local scales of activity.

In one group are the neighborhood motion picture theatres, the branch libraries, amusement parks, the community playhouses. These probably will become decentralized with the spreading of population throughout the region in a fashion similar to retail trade. Manhattan's prospect for these activities is at best to remain stable while they burgeon in the suburban areas. To the extent that technological advances such as television lower the demand for such establishments as motion picture houses, there may be a further absolute decline in Manhattan in certain cultural and amusement establishments.

With regard to the second group of activities, however, Manhattan will tend to grow as the region as a whole grows. Manhattan has always been the center for the entire region in all the things that require a regionwide hinterland—with the notable exception, perhaps, of outdoor recreation. Virtually all of the region's motion picture distribution activity is concentrated in Manhattan. Museums, the Theatre District, the Metropolitan Opera, the Forty-Second Street Library will retain indefinitely their full importance for the whole region. Indeed, little expansion whatever is to be anticipated for this type of metropolitan service anywhere in the region except in Manhattan.

Section II

METROPOLITAN TRANSPORTATION FACILITIES

Transportation of people within the New York - New Jersey - Connecticut Metropolitan Area is provided by an extensive network of urban rapid transit, suburban railroad lines, bus lines and highway facilities for the private automobile.

Urban Rapid Transit

Urban rapid transit, defined here as a mass transportation system by rail, operating at comparatively high average speeds on exclusive, grade-separated rights-of-way, designed to carry a large number of persons for short distances at maximum efficiency, is confined mainly to the urban core area of the region.

Rapid transit service is provided by—

(1) The subway and elevated lines of the New York City Transit Authority, with 237 miles of route serving the Boroughs of Manhattan, Brooklyn, the Bronx and Queens. The System serves an average of over 4 million passengers daily at a 15¢ fare.

(2) The Staten Island Rapid Transit Railway, a subsidiary of the Baltimore & Ohio Railroad, provides passenger service on the 15-mile route from Tottenville to the ferry terminal at St. George in the Borough of Richmond. Former passenger services on the North Shore and South Beach branches have been abandoned. The passenger line has been leased to the City of New York for a sum equivalent to taxes but is still operated by the owners. It carries an average of 7,000 round-trip passengers daily.

(3) The Newark City Subway, from the Pennsylvania Railroad Station to the city limits in Branch Brook Park, is 4 miles long. The line is leased to Public Service Coordinated Transport and is operated with trolley cars of the "PCC" type. It is adaptable to operation with conventional rapid transit trains. It carries an average of 7,700 round-trip passengers daily.

(4) The Hudson & Manhattan Railroad, connecting the Cities of Jersey City and Hoboken with both downtown New York and midtown New York over 8 miles of route. It provides service from Journal Square to Hudson Terminal, from Hoboken to Hudson Terminal, from Journal Square to 33rd St. and 6th Ave., and from Hoboken to 33rd St. and 6th Ave. It also operates a service between Newark and Journal Square jointly with the Pennsylvania Railroad over tracks owned by the latter. It has two tunnels under the Hudson River—a downtown tunnel from Exchange Place in Jersey City to Hudson Terminal in Manhattan, and an uptown tunnel from Hoboken to Christopher St. in Manhattan.

Its services can be used by passengers from the Lackawanna Railroad and Erie Railroad at Hoboken; by passengers from the Erie Railroad and the Susquehanna Railroad at Erie Station; and by passengers from the Pennsylvania Railroad at both Newark and Exchange Place in Jersey City. In addition, many passengers transfer to the Hudson & Manhattan at Journal Square and Exchange Place from buses serving Jersey City and other Hudson County communities. It carries about 63,000 round-trip passengers daily, of whom 23,000 travel in the peak hour.

The Railroad has been in operation for about 48 years. The size of the tunnels and the sharp curvature of the tracks limit its operations to smaller cars—50′ long and 9′ wide with only 44 seats per car. The physical features of Hudson Terminal limit the length of its trains to a maximum of 8 cars. Because of their larger size, none of the cars now used on the New York City Transit System can be operated on the Hudson & Manhattan. However, IRT Division cars are the same length and width as Hudson & Manhattan cars, so that new cars to be purchased for that Division could be operated on the H&M if built with a change in the roof design.

Most of its 308 cars (254 owned by the Hudson & Manhattan and 54 owned by the Pennsylvania Railroad) are more than 40 years old and are badly worn due to lack of proper repairs. The Hudson & Manhattan is now building 20 new cars for use on its own lines, while 30 new cars are being purchased by the Pennsylvania Railroad for the joint service to Newark.

The Railroad is operated by a Trustee under reorganization pursuant to Chapter X of the Bankruptcy Act. The Company also owns the two large office buildings at Hudson Terminal. The combined railroad and real estate operation results in an annual net income deficit of somewhat over $1,000,000.

On September 21, 1957, the Railroad raised its interstate fares between Hudson County and New York from 20¢ to 25¢ and raised its intrastate fares within New York City from 10¢ to 15¢. The intrastate fare within Hudson County was raised to 12¢ on December 13th, 1957.

For 30 years this Railroad has suffered a severe decline in traffic for many reasons, among which are automobile and bus competition after the opening of the Hudson River vehicular tunnels, the 5-day week, the shorter workday and the fact that its services are becoming less and less attractive. It still operates on the same basis it did 50 years ago. Its traffic has declined from 113 million passengers in 1927 to 37 million passengers in 1956.

Suburban Railroad Service

The regional network of railroads provides suburban services between the central urban areas and suburban communities over 1100 miles of route. A list of railroad facilities is included in Table 2 of the Appendix.

The New Jersey Sector has the largest network of railroads funneling into New York City. Although there are six principal suburban systems with numerous branches in that Sector, only one railroad (the Pennsylvania) offers direct service into Manhattan. Passengers on the other lines must transfer to slow, outmoded railroad ferries, buses, or Hudson & Manhattan trains and then, in half of all cases, make a further transfer to Manhattan transit lines to reach their destinations. Rail passengers in the Westchester and Long Island Sectors, on the other hand, are provided with direct service into the heart of Manhattan. The table below indicates the effect of the Hudson River barrier on the speed of travel from New Jersey into Manhattan as compared with that from the other Sectors:

Speed of Commuter Travel from all Suburbs to Mid-Manhattan—1955

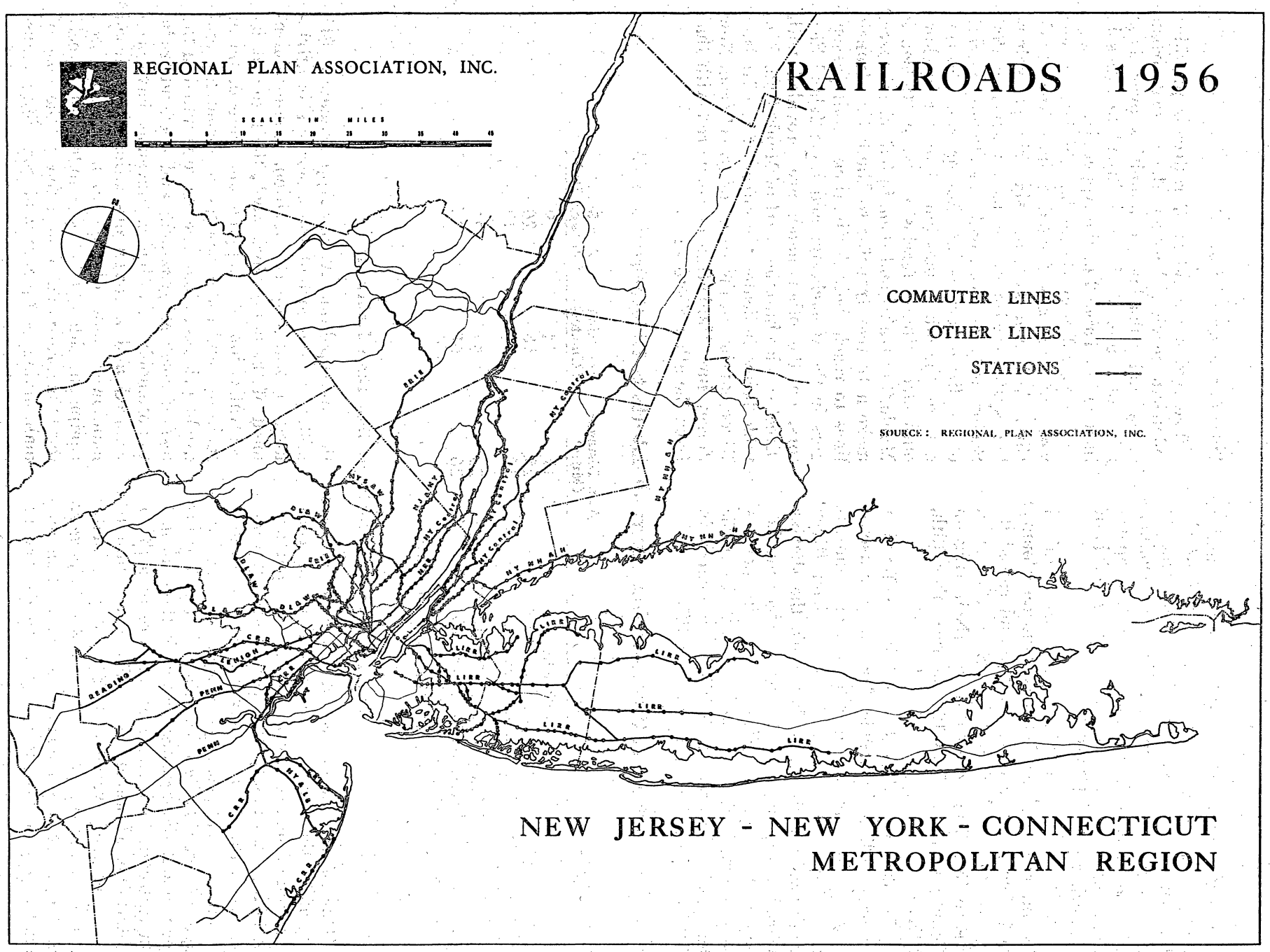
Sector	Avg. Distance (Miles)	Avg. Time (Minutes)	Avg. Speed (Miles per Hr.)
New Jersey (all railroads)	17	54	19
Pennsylvania Railroad	25	58	26
All Other Railroads*	16	54	18
Westchester (all railroads)	23	54	26
Long Island (all railroads)	26	61	26

* Including Hudson & Manhattan.

The Financial Condition of Suburban Railroads

One of the major transit problems of the region is the constant deterioration and contraction of suburban railroad services, particularly in New Jersey, and the very strong probability of further reductions in the near future.

Railroad suburban passenger services are operated at a large loss. There is much argument about the cost accounting methods in use on railroads and actual figures are difficult to determine. However, the staff and consultants have analyzed available statistics and estimate that the out-of-pocket loss, before fixed charges, of those services amounts to $14 million annually to the deficit-incurring railroads serving the Metropolitan Area. Approximately $11 million of the cost of those services is attributed to local property taxation. The establishment of the 5-day work week, the trend to decentralization of shopping and entertainment facilities, and the expansion of ownership and use of private automobiles have resulted in the loss of much off-peak-hour and weekend traffic to automobiles and buses. Revenues have been reduced and a lower utilization of railroad manpower (now idle 60% of a weekday) and equipment (idle during 80% to 90% of a weekday) has resulted. Concurrently, the cost of maintaining equipment and providing trans-


REGIONAL PLAN ASSOCIATION, INC.
SCALE IN MILES
RAILROADS 1956
COMMUTER LINES
OTHER LINES
STATIONS
SOURCE: REGIONAL PLAN ASSOCIATION, INC.
NEW JERSEY - NEW YORK - CONNECTICUT
METROPOLITAN REGION

portation has risen considerably. Even though higher fares and, in some cases, more convenient bus or auto service have diverted many rail passengers to vehicular facilities, public regulatory bodies often have been reluctant to permit railroads to eliminate trains which are no longer patronized. Nevertheless, many reductions in schedules and some abandonments of lines and ferries have occurred, particularly in New Jersey. These changes have resulted in further losses of traffic.

Some examples of the contraction in service are as follows:

1. The ferry services operated by various railroads to 23rd Street have been abandoned.

2. The Christopher Street ferry of the Lackawanna was abandoned in 1956.

3. The passenger services on the Northern and Newark Branches of the Erie and on the New Jersey & New York Railroad have been reduced to commuter-hour trains only. The Lackawanna has a request pending before the Public Utilities Commission of New Jersey for a similar reduction on its Boonton Branch. The railroad has recently been permitted to reduce service on its Montclair and South Orange branches.

4. The New York Central has received permission from the ICC for abandonment of its ferries from Weehawken to both 42nd Street and Cortlandt Street. The abandonment has not been allowed, however, by the courts. The railroad petitioned for complete suspension of passenger service on its West Shore Route (River Division), which was denied, but permission was granted to make a substantial reduction in service.

5. The Susquehanna last year petitioned for complete abandonment of passenger services but amended it to a petition for a substantial reduction of service. A reduction of service was permitted by the Public Utilities Commission on December 10, 1957.

6. Service on several minor branches has been eliminated, such as on the Orange Branch of the Erie, from Wanaque to Greenwood Lake on the Greenwood Lake Division of the Erie, on the Freehold and Newark Branches of the Jersey Central, and others.

It can be expected that the railroad companies will continue to press for further reductions or even complete suspension of their unprofitable suburban operations. Additional revenues from fare increases granted do not seem, in most cases, to balance constantly increasing costs of operation. Some of the statements in recent ICC reports on requests for abandonments indicate that the regulatory agencies are looking, and may well continue to look, more sympathetically to the railroads' petitions.

The alternatives facing the Region are, therefore, on the one hand gradual but accelerating discontinuance of suburban railroad service and all it implies and, on the other hand, assumption by the public of its responsibility to support those railroad services it considers essential by means of tax adjustments, other financial assistance, or, as a last resort, public operation.

Buses provide essentially short-haul service from the closer environs into New York City. New Jersey, however, is the only Sector which has direct suburban bus service into Manhattan. Most New Jersey communities within 20 miles of Manhattan are served by routes operating directly to either the Port Authority Bus Terminal at 8th Avenue and 41st Street or the bus terminals near the Manhattan end of the George Washington Bridge.

Weekday service to about 63,000 persons is provided by twelve bus companies between widely scattered New Jersey communities and the Port Authority Bus Terminal. Almost all of the buses serving this Terminal use the Lincoln Tunnel to cross the Hudson River. A few companies provide express service via the New Jersey Turnpike but most buses operate on toll-free roads. None of these highways has separate lanes for the exclusive use of buses during rush hours. The average distance travelled by commuters on these routes is approximately 13 miles. 95% of all bus commuters live in the counties of Bergen, Hudson, Essex, and Passaic, in decreasing order of volume.

Three principal bus systems serve the 28,000 weekday passengers who travel each way between Bergen, Rockland, and Passaic Counties and the terminals near the Manhattan end of the George Washington Bridge. All of these buses cross the Hudson River via the George

Washington Bridge. 98% of the commuters travelling on these routes live in Bergen County. Their total journey-to-work averages approximately 16 miles. The Port Authority plans to build a consolidated terminal adjacent to the New York plaza of the George Washington Bridge which will take the place of the four small terminals now in that area.

There are also several bus lines which carry 11,000 Westchester County passengers to Bronx subway terminals. A number of bus routes in western Nassau County provide service for 12,000 passengers to subway terminals in Queens.

As the region's growing suburban population settles in areas not directly served by existing rail routes the bus will become an increasingly important means of transit. Aside from providing local services it will have the functions of taking commuters to the nearest railroad station; to stations on any trans-Hudson loop which will be constructed or to existing subway stations; and directly to mid-Manhattan terminals.

Automobiles have become an important means of transportation, both essential and non-essential. The automobile traveler is served by a comprehensive network of highways provided by government at all levels and by various authorities. The highway network, including the bridges and tunnels, is being constantly expanded in an effort to keep up with traffic, although each new facility generates still further traffic by providing additional convenience to motorists. The astounding growth of automobile travel has resulted in serious traffic congestion in the urban centers whose streets were designed long before the automobile age.

At the present time, about 100,000 suburban commuters drive into New York City every weekday. Of this number only 35,000 are destined for the central business districts of Manhattan south of 59th Street, while most of the others drive to the New York City borough nearest their suburban place of residence. Over one-third of New Jersey's 28,000 auto commuters live in Bergen County alone, with the remainder residing in widely scattered areas. It is estimated that 15,000 daily commuters use the George Washington Bridge, 8,000 the Lincoln Tunnel, and 4,000 the Holland Tunnel. Practically all of the 19,000 persons commuting from the Westchester-Fairfield sector live in Westchester County. About half of these commuters in 1956 entered New York City on the Saw Mill River Parkway and 30% entered by way of the Bronx River Parkway, while the remainder entered on the Hutchinson River Parkway and the Boston Post Road in most cases. Almost all of the 52,000 auto commuters from Long Island into New York City live in Nassau County. Approximately 60% of these auto riders utilize the principal parkways and highways in the northern half of the Island.

Both the New York City Department of Traffic and the Port of New York Authority have attempted to alleviate traffic congestion in Manhattan by constructing peripheral parking lots in Queens and New Jersey from which passengers can complete their trips on rail, transit, and bus lines. The Traffic Department proposes to build several Midtown Manhattan parking garages at a cost of $24 million. These facilities, plus the 100,000 existing licensed and private parking spaces south of 59th Street, would be able to accommodate only a tiny fraction of the autos of the 2.5 million persons who work in Manhattan and the 1.5 million shoppers, amusement-seekers, and other visitors who enter the business districts daily.

Section III

REGIONAL TRAFFIC PATTERNS AND TRENDS

About 900,000 persons travel each business day from the suburbs to New York City and back again, of whom 370,000 travel during the commuting hours in the morning and evening. Of the commuters only 27% travel by private automobile, the other 73% using public transit (rail or bus).

The railroads carry only 36% of all daily passengers, but 56% of the commuters and as many as 67% of the passengers during the peak hour.

Mode of Transportation of Weekday Passengers from All Suburbs into New York City—1955

(Thousands of Persons)

Period	Rail*	Bus	Auto	Total
Total Daily	322	120	456	898
Commuters (7-10 a.m.)	208	63	99	370
Non-Commuters	114	57	357	528
Peak-Hour (8-9 a.m.)	136	29	39	204

* Including passengers on railroad ferries and the H&M.

The commuter movement, 41% of the total daily traffic, is critical in that it determines the amount of facilities required to serve the passengers.

There has been a significant shift in the mode of transportation of commuters since 1930. During that period, the number of daily commuters by railroad fell 12% and the one suburban rapid transit line (Hudson & Manhattan Railroad) lost 62% of its commuters while bus and auto commutation rose 326%.

The railroad loss has not been geographically uniform and, in fact, commuting by railroad has increased during the past 25 years in the Westchester and Long Island Sectors while commuting by rail from New Jersey has decreased 50%. The decline in New Jersey is no doubt due in large measure to lack of direct service to mid-Manhattan and the more convenient service offered by buses and automobiles from suburban communities close to New York City. It is also likely that the comparatively inferior service in New Jersey has caused many prospective railroad commuters to settle in the Westchester and Long Island Sectors rather than west of the Hudson.

Commuters into New York City by Mode of Transportation—1930-1955

Mode	(1,000 Persons) 1930	1955	Change (Per Cent)
H&M (local)	48	18	— 62.5
Suburban Railroad*	215	190	— 11.6
Bus and Auto	38	162	+ 326.3
Total	301	370	+ 22.9

* Including Newark passengers via H&M.

NOTE: More detailed data are shown in the Appendix, Table 3.

It is to be expected that commutation to New York City will continue to increase and will be accompanied by an increase of commutation in the reverse direction—from New York City to the growing industrial areas in the suburbs.

Origin of Commuters

The following table shows the suburban origins of commuter traffic to New York City:—

Origins of Daily Commuters—1956

(Thousands of Persons)

	County	Rail	Bus	Auto	Total
Core Area:	Hudson	14	7	3	24
Inner Ring:	Bergen	15	29	10	54
	Passaic	2	3	2	7
	Essex	13	6	3	22
	Union	13	1	1	15
	New Jersey Sector	43	39	16	98
	Westchester	46	9	17	72
	Nassau	62	6	50	118
	Total—Inner Ring	151	54	83	288
Outer Ring:	Rockland	2	1	1	4
	Orange	1	—	1	2
	Morris	4	1	2	7
	Somerset	1	—	—	1
	Middlesex	4	—	—	4
	Monmouth	4	—	1	5
	Mercer	1	—	1	2
	Others	1	—	2	3
	New Jersey Sector	18	2	8	28
	Fairfield	12	—	1	13
	Dutchess & Putnam	1	—	1	2
	Suffolk	12	—	2	14
	Total—Outer Ring	43	2	12	57
Total Region					
New Jersey Sector		75	48	28	151
Westchester Sector		59	9	19	87
Long Island Sector		74	6	52	132
TOTAL REGION		208	63	99	370

A study by the Regional Plan Association (published in RPA Bulletin #77) indicates that since 1930, rail commutation from core area counties and the contiguous portions of inner ring counties showed a decline, whereas in the more distant portions of the inner ring counties and the outer ring counties rail commutation experienced large increases. Loss of core area rail commuters was due to the construction of New York City subways to the vicinity of the City limits and to competition from buses in New Jersey areas. Losses in rail commutation, where they occurred in the inner ring counties were due mostly to bus competition after construction of Hudson River vehicular crossings and to automobile competition after construction of parkways and freeways. The New Jersey buses now transport passengers directly to the bus terminals at 41st Street and at the Manhattan end of the George Washington Bridge where subway service is available. With the New Jersey railroads (except the Pennsyl-

vania) generally terminating their services in downtown Manhattan via ferries, bus service is much more convenient for many passengers with midtown destinations. In fact, over 50% of midtown commuters by transit from New Jersey use buses whereas only a very small portion of downtown commuters use buses. Principal bus competition is limited to Bergen County and nearby portions of Passaic and Essex.

In areas beyond 15-20 miles from mid-Manhattan the railroad is the dominant means of transportation for commuters.

Destination of Commuters

During the morning commuter period, approximately three-fourths of all suburbanites traveling into New York City are destined for the central business district of Manhattan south of 59th Street. This is particularly true of rail commuters, over 90% of whom work in that area. The midtown office, shopping, hotel and theatrical district is now the location of the majority of employment in Manhattan.

Destination of Commuters from All Suburbs into New York City—1955

(Thousands of Persons)

Destination	Rail	Bus	Auto	Total
Grand Total:	208	63	99	370
Manhattan, South of 59th St.	190	48	35	273
Battery-Houston St.	74	6	9	89
Houston-34th St.	39	8	9	56
34th-59th Sts.	77	34	17	128
Remainder of New York City and Beyond	18	15	64	97

The railroad system is the dominant transportation medium. Although buses carry a considerable number of passengers from New Jersey into Manhattan during commuting hours, there is no direct bus service to Manhattan from the Westchester and Long Island Sectors. The peak-hour movement by automobiles into the business district, although increasing, is still the smallest of all means of transportation due to crowded approach highways and the lack of parking space in Manhattan. Automobiles carry a majority of the suburban commuters to the other boroughs of New York City. They also transport most of the non-commuter and weekend traffic to widely dispersed destinations within and beyond the City limits.

More detailed information is contained in Tables 4, 5, 6, 7, and 8 of the Appendix.

PART II—THE INTRASTATE STUDIES

Section IV

THE STATEN ISLAND STUDIES

The Commission retained the consulting engineering firm of Day & Zimmermann, Inc. of Philadelphia to make a study of commutation traffic from Staten Island via the ferries and to study the feasibility of providing rapid transit to Staten Island via the proposed Narrows Bridge. The results of their study and our staff analysis were published in the Commission's Interim Report dated January 31, 1957 (Appendix B, pp. 23-34). The published analysis concluded that it had not been demonstrated that there is a need to provide rail rapid transit across the Narrows Bridge in preference to other means of mass transit such as buses, even in the foreseeable future.

At present there are only 29,000 passengers daily from Staten Island to Manhattan. Of these riders, 19,000 travel during the commuting hours of 7-10 A.M. and 10,000 travel in the peak hour.

It is conceivable, however, that Staten Island may develop to the extent that the existing ferry service may prove to be inadequate or an unbearable financial burden on the City of New York, and that provision of rapid transit service from the Island to Manhattan will be desirable. Our consultant for the trans-Hudson studies, Mr. DeLeuw, was requested to make a limited study of an alternate route via Bayonne and Jersey City and crossing the Hudson via either the Hudson & Manhattan or a new bi-state transit loop tunnel.

Mr. DeLeuw's investigations concluded that the most feasible means of providing future direct rail transit service to Staten Island would be use of the Jersey Central Railroad tracks through Bayonne and the construction of a tunnel from Constable Hook in Bayonne to St. George on Staten Island, where it would connect with the Staten Island Rapid Transit Railway. This would involve a capital cost of at least $30 million, exclusive of cars. An alternate would be to terminate the rail transit line at the Jersey Central's 8th Street Station in Bayonne and to provide adequate bus service from Staten Island points to that terminal via the Bayonne Bridge.

The Project Director has concluded that no such plan should be considered until commuter traffic from Staten Island to Manhattan doubled, at least, and unless the City of New York were prepared to suspend the ferry service from St. George to Manhattan.

The study indicates that direct rail transit from Staten Island to Manhattan via the Bayonne Peninsula would offer the fastest and most convenient service of all possible alternates. It is this route which should receive consideration when traffic reaches the level to warrant provision of rail transit. Until that time a bus service across the Narrows Bridge to the subway terminals in Brooklyn and the existing ferry service would be adequate. If an express highway should be built connecting the Bayonne Bridge with Jersey City it would be possible to operate direct express buses from Staten Island points to a rapid transit station in Jersey City on the proposed loop system. This would offer fast service and would be adequate so long as the number of commuters remained moderate.

Section V

THE LONG ISLAND STUDIES

On March 15, 1956 the Commission retained the consulting engineering firm of Day & Zimmermann, Inc. to conduct a study of the characteristics of commuter travel from the Long Island Sector to the other sectors of the metropolitan area. They were also assigned a study of the feasibility of certain proposals for the improvement of rapid transit in the sector.

The consultants submitted their reports on December 27, 1956 and January 31, 1957 and the results were used as a basis for staff studies of the rapid transit needs of the sector.

For the purposes of the study it was assumed that the Long Island Sector consists of Nassau and Suffolk Counties and that the rapid transit needs of Brooklyn and Queens would be considered by the Advisory Committee on Transit Extensions appointed by Mayor Wagner. However, as the two main rapid transit routes in Queens (to Flushing and to Jamaica) are used to a considerable extent by passengers from western Nassau County, and since any rapid transit extensions in eastern Queens would affect passengers from western Nassau County, it was not found possible or desirable to exclude from the study all consideration of eastern Queens.

In the course of the study the staff gathered information from the Long Island Rail Road, the New York State Department of Public Works, the New York City Department of Traffic, the New York City Transit Authority and the Nassau County Department of Transportation.

The Traffic Pattern

The volume and origins and destinations of commuters into New York City, as reported by the consultants, are summarized below and are presented in more detail in Tables 4 and 8 in the Appendix.

Weekday Passenger Traffic from Long Island Sector into New York City—1956

(Thousands of Persons)

Time Period	*Rail*	*Bus*	*Auto*	*Total*
Total Daily	105	12	211	328
Commuters (7-10 a.m.)	74	6	52	132
Peak Hour (8-9 a.m.)	39	3	22	64

Origin of Commuters from Long Island Sector into New York City—1956

County of Origin	*Rail*	*Bus*	*Auto*	*Total*
Nassau	62	6	49	117
Suffolk	12	—	3	15
TOTAL	74	6	52	132

Destination of Commuters from Long Island Sector into New York City—1956

Destination	*Rail*	*Bus*	*Auto*	*Total*
Manhattan	65	2	19	86
Brooklyn	6	2	7	15
Queens	3	2	23	28
Bronx	—	—	2	2
Westchester	—	—	1	1
New Jersey	—	—	1	1
TOTAL	74	6	52	132

Rapid Transit Needs of the Long Island Sector

The investigations in the Long Island Sector reveal certain needs as to rail transit during the next 20 years. In considering these needs the staff recognizes the existence of two rail transit systems (the New York City Transit System and the Long Island Rail Road) which overlap but which have different characteristics, and has attempted to assign to each the function it can best perform in the general public interest.

A. *Inter-Sector Traffic*

Commuter traffic between Long Island and other suburban sectors of the metropolitan region is too small and too scattered to warrant consideration of providing direct rail service from Long Island to those areas. The following table indicates the estimated number of rail and auto commuters from this sector to all destinations outside of Manhattan, Brooklyn, and Queens:

Destination	Number of Commuters		
	Rail	Auto	Total
Bronx	98	1,591	1,689
Westchester	4	580	584
New Jersey	362	538	900
TOTAL	464	2,709	3,173

Rail passengers traveling from Long Island to New Jersey may now transfer between trains of the Long Island Rail Road and the Pennsylvania Railroad at Pennsylvania Station in Manhattan and, with slightly less convenience, to the Hudson and Manhattan. Auto passengers between those sectors may now use existing East River and Hudson River crossings, and will have the Narrows Bridge available in the future. Auto passengers from Long Island to the Bronx and Westchester are now served by the Bronx-Whitestone Bridge, which will be augmented by the proposed Throggs Neck Bridge.

B. *Increased Demand for Transit Services*

If present development trends continue, the Long Island Rail Road can expect a small net growth of commuter traffic in the next 20 years estimated at about 5,000 daily commuters. Railroad commutation should decline from Queens and western Nassau County but should show a greater increase from eastern Nassau and Suffolk Counties. The commuter-period capacity of the Railroad must be sufficient to adequately accommodate the increased traffic.

The center of the commuter-generating area is moving farther from Manhattan and Brooklyn. Commuters should be provided with more comfortable and faster service to compensate for the longer distance traveled if the railroad service is to continue as a useful segment of the transportation system.

There are at present over 4,000 standees on the railroad during the morning commuter hours. The capacity of the Long Island Rail Road during the peak commutation periods, therefore, should be increased to provide 9,000 additional seats.

The continued development of northeastern Queens and the northern portion of western Nassau will cause a continuing increase of traffic on the already crowded Flushing and Queens Blvd. subway lines. These subway lines may also attract a share of those Queens and western Nassau commuters who will no longer use the Long Island Rail Road.

The primary transit need of the Sector is for increased passenger-carrying capacity during peak periods on both the Long Island Rail Road and the New York City Transit System. The East River tunnels and facilities for the Long Island Rail Road at Pennsylvania Station, and the East River tunnels of the Transit System constitute physical bottlenecks which limit any expansion of service. A new East River rail crossing is essential to Long Island transit improvements.

New East River tunnels for the Long Island Rail Road would require expanded station facilities in Manhattan, at large expense, for the additional trains and would provide very little in the way of improved service. Such tunnels, of course, would give no relief to the subway lines. As in the case of the trans-Hudson problem, it would be preferable that new crossings of the East River be in the form of rapid transit rather than suburban railroad tunnels.

The New York City Transit Authority has planned a transit line from the proposed 2nd Av. Subway across the East River from 76th St. to Astoria, Woodside, and beyond. The 2nd Av. project, however, has been deferred, at least for the present. An alternate crossing of the East River would be construction of a branch from a bi-state transit loop from New Jersey. Such a branch could be built through Astoria and Woodside or on a more southerly route intersecting the Long Island Rail Road in Long Island City. In the latter case, some Long Island Rail Road trains could transfer their passengers to the loop trains and terminate their runs in Long Island City. This would release capacity in the East River tunnels and in Pennsylvania Station for more railroad trains from Nassau and Suffolk Counties.

C. *Better and Faster Rail Service*

Since the average length of ride of Long Island Rail Road commuters will continue to increase, commuters should be provided with faster schedules in order to keep the time of the daily journey-to-work within tolerable limits. At present, the origins of commuters to Manhattan, in point of distance from Pennsylvania Station, are as follows:

ORIGIN OF LONG ISLAND COMMUTERS TO MANHATTAN

	Rail		Auto			
Distance	*Number*	*%*	*Number*	*%*	*Total*	*%*
15-20 miles	26,191	71.1	10,648	28.9	36,839	50.29
20-30 miles	24,081	88.6	3,105	11.4	27,186	37.11
30-40 miles	7,253	95.8	316	4.2	7,569	10.33
40-50 miles	1,174	100.0	0	0	1,174	1.60
Over 50 miles	473	96.9	15	3.1	488	.67
TOTAL	59,172	80.8	14,084	19.2	73,256	100.00

To accomplish the aim of faster service the Long Island Rail Road should be assigned the function of serving only Nassau and Suffolk commuters. It should eventually be relieved of the function of serving commuters from Queens. They should be served by the New York City Transit System. This would allow the elimination of all Long Island Rail Road stops within New York City, except for transfer of trains, transfer to the subway lines, and the important destination stations in Queens.

Efforts should also be made to consolidate closely-spaced railroad stations in Nassau and Suffolk. At present the average distance between stations is ¾ of a mile. With the spread of residential communities away from existing railroad stations, and with the growth of use of autos and buses to reach the stations, it is no longer necessary to maintain stations so closely spaced as formerly. The consultant's survey indicated that 47% of the railroad passengers use automobiles to reach their stations and 13% use buses.

D. *Increased Parking Facilities*

The great increase in the use of the private automobile in recent years, and the concurrent residential development of Nassau and Suffolk Counties in areas not adjacent to railroad stations have caused the private automobile to become an important adjunct to commuting by railroad. The private automobile has also become an important means of reaching New York City subway lines for passengers originating in eastern Queens and western Nassau County. Proper facilities for parking of automobiles at both railroad stations and outlying subway terminals are now a definite rapid transit need of the area. They might be an important factor in attracting to the railroad some of the commuters who now drive their automobiles to destinations in New York City.

1. Parking at Long Island Rail Road Stations

The consultant's survey of commuters indicated that 46.8% of the Long Island Rail Road passengers use automobiles as a supplemental means of transportation. Although many of the rail passengers are driven to the stations by others, 51.9% park their automobiles at the railroad stations. Of all rail commuters who also use automobiles, 41% park in regular parking lots while 10.9% park in the streets. This indicates that parking facilities may be inadequate.

This has been recognized by both the Long Island Rail Road and by municipal governments in Nassau County at the village, town and county level. Considerable progress has been made, particularly in the larger commuting areas, to provide adequate parking for railroad commuters. At the present time, the Long Island Rail Road, in conjunction with the municipalities, is making a strenuous effort to obtain additional parking facilities at all of its

suburban stations in Nassau County and at those Suffolk County stations where the volume of commutation justifies action. The current railroad program has been made effective at 29 locations and is being negotiated in at least 21 other locations. To date, the plan has produced a net increase of 55% in the amount of parking places at or near stations. The plan revolves around the leasing of railroad-owned land to the local community for public parking purposes at a rental of $1.00 annually, with the local community responsible for paving, marking, and patrolling the area. In many cases the community has added property of its own to provide larger areas than were available formerly. In some cases the parking lots have been equipped with meters by the communities so that the cost is borne by the motorist rather than all local taxpayers. In some cases, the railroad property dedicated to parking has been removed from the tax rolls, resulting in a tax saving to the railroad.

This program of railroad-community cooperation is commendable and effective. It sets an example for similar cooperative action throughout the rest of the metropolitan area.

2. Parking at Outlying Subway Terminals

The consultant's survey of commuters by automobile indicates that during the two-hour peak period 91% use the subway system as an additional means of transportation. The survey failed to develop the locations where these passengers transfer to subway lines, but it is known that a large number transfer at Flushing, Sunnyside, and Jamaica. It would be to the advantage of the City to have such transfers made as close to the outlying terminals as possible to minimize the use of city streets by automobile commuters.

Large parking lots are operated by the New York City Department of Traffic adjacent to subway stations in the Flushing and Sunnyside areas but there are no public commuter parking facilities in Jamaica or at Brooklyn transit terminals. The off-street parking program of the Department of Traffic, as submitted with the 1956-1957 capital budget, included only two large parking lots which might be considered as peripheral parking lots for Long Island commuters—one at Horace Harding Blvd. and Queens Blvd. and another at Pitkin and Grant Aves. in Brooklyn. The program includes a multi-purpose parking lot, known as Jamaica North, but this lot is not very convenient to the subway terminals.

Although the Flushing parking facilities appear to be adequate for the present, there is definite need for better parking facilities at subway terminals in the Jamaica area. Any subway extensions to be constructed in eastern Queens should be provided with adequate parking facilities at the terminals and at other appropriate stations.

E. *Summary*

Basically, the suburban rapid transit plan for the Long Island Sector should consist of:

(1) Adequate rapid transit lines of the New York City Transit System extending to the vicinity of the city line to serve passengers from all of Queens. The rapid transit lines should be served by "feeder" bus service from areas in Queens not adjacent to the lines. Outlying rapid transit terminals should be provided with adequate public commuter parking lots to accommodate those passengers who reach the terminals by private automobiles.

(2) A modern, fast, comfortable suburban service by the Long Island Rail Road to serve passengers from Nassau and Suffolk Counties. The railroad should not be relied upon to provide local service to passengers originating within Queens and Brooklyn. The railroad should provide a seat for every passenger and faster service so that over-all travel time of the journey-to-work should be limited to a *maximum* of 75-90 minutes. There should be good "feeder" bus services to stations from communities not adjacent to the railroad. Stations should be provided with adequate parking facilities for commuters who must drive to the railroad.

A Program for Meeting the Needs

Basic to providing additional transit service to the Long Island Sector is the provision of additional train capacity across the East River. The proposed subway tunnels from 76th St. to Astoria (in connection with the Second Av. Trunk Line Plan) provide the key to the solution. The Astoria extension has been proposed to run to the Long Island Rail Road at Wood-

side and thence along the Long Island Rail Road to Rego Park and a connection to the subway line to the Rockaways. The cost of the branch from mid-Manhattan to Woodside has been estimated at $110 million.

There appears to be no immediate prospect for construction of that line. An alternate plan would be to make use of the bi-state transit loop from New Jersey proposed in the interstate study. A branch could be constructed under Madison Avenue from 59th St. to 76th St. and then to Astoria and Woodside along the route described above, or else by more southerly tunnels to Long Island City.

The Port Washington Branch of the Long Island Rail Road serves Queens east of Flushing and operates for only 5 miles into Nassau County through Great Neck and Manhasset to Port Washington. It does not serve those areas on Long Island from which the future growth of rail commutation traffic is anticipated. If this line were incorporated into the New York City Subway System or into the bi-state loop by a connection at Woodside or Long Island City, sufficient Pennsylvania Station train capacity would be released to provide up to 9,600 additional seats in the peak hour on the other railroad lines from Nassau and Suffolk. This line would, as well, provide direct rapid transit service to the area east of Flushing. Total capital cost, including all new cars, has been estimated by the consultants at $47 million.

Methods of Effectuating the Improvements

Rapid Transit Extensions

If the City of New York constructs the subway extension across the East River to Woodside, the purchase and re-equipment of the Port Washington Branch of the Long Island Rail Road for integration into the City Transit System should be made jointly by the City of New York and Nassau County. Operation of the line would most logically be by the New York City Transit Authority. On the other hand, if the bi-state loop from New Jersey should be extended to Queens and the Port Washington Branch integrated into it, the purchase and re-equipment of that line would be by the proposed metropolitan rapid transit district.

Long Island Rail Road Improvements

As a Redevelopment Corporation until 1966, the Long Island Rail Road will be fully capable financially to carry out the rehabilitation program which has been specified for it. At the expiration of the Redevelopment Plan it is anticipated that the Long Island Rail Road will be a modern, efficient railroad property. However, in 1963, the present tax concessions will expire, and in 1966 the railroad will again be required to pay full interest on its bonded indebtedness. If conditions at that time are such that there is any threat to the continued maintenance of modern, adequate railroad service it might be desirable for the proposed metropolitan district to be expanded to include Nassau and Suffolk Counties. The District could then negotiate with the railroad for the maintenance of adequate service.

The formulas proposed by Dr. Miller and the Project Director in the interstate study for representation on the Council of the District and for apportionment of possible deficits are based on the full valuation of taxable property, population, and the origins of daily passengers on public transit into New York City. The basic data for the application of those formulas to the Long Island Sector are as follows:

County	Full Value of Taxable Property (Millions)	1955 Population (Thousands)	Estimated 1975 Population (Thousands)	Transit Passengers to New York City
New York	$9,318	1,875	1,825	—
Queens	5,955	1,750	1,900	—
Nassau	5,201	975	1,400	98,000
Suffolk	2,064	445	845	19,000

Section VI

THE WESTCHESTER-FAIRFIELD STUDIES

The Commission retained the consulting engineering firm of Ford, Bacon and Davis, Inc. of New York to conduct a study of the characteristics of commuter travel from the Westchester-Fairfield Sector to the other sectors of the metropolitan area. The study was made to assist in the determination of the extent of the transit needs, if any, and of the transit improvements that may be required in the Westchester-Fairfield Sector. The consultants submitted their report on September 17, 1956 and the results of the study were coordinated with staff studies of the problems of the railroads in the Sector.

It was not the intent of the staff studies to investigate operating or maintenance problems such as the on-time performance of the commuter railroads, the adequacy of maintenance practices, cleanliness of cars, adequacy of facilities at Grand Central Terminal, transfer of terminal locations, etc., which are wholly management functions under the supervisory control of public agencies such as the Public Service Commission of the State of New York and the Public Utilities Commission of the State of Connecticut. In this study, the staff concentrated on the broader questions of how to provide adequate suburban rail service between the sector and the other parts of the metropolitan area.

The volumes, origins and destinations of commuters have been consolidated with similar information from the other sectors and presented elsewhere in this report and in Tables 3, 4, 5 & 7 of the Appendix.

Rapid Transit Needs

The consultants' study and the staff studies lead to the following conclusions as to the transit needs of the Sector:

1. Commuter movement to sections of the metropolitan area other than the Bronx and Manhattan is too small and too diffused to warrant consideration of providing direct rail facilities between Westchester and the other suburban sectors.

The following table summarizes the indicated number of rail and auto commuters in the Sector whose destinations presently are outside the Bronx and Manhattan:

	Number of Commuters		
Destination	*Rail*	*Auto*	*Total*
Kings County	761	2,052	2,813
Long Island	—	202	202
New Jersey	30	625	655
Other New York State Points	16	—	16
	807	2,879	3,686

2. The construction of an additional rail mass transportation system of the subway type, to serve any major portion of Westchester Sector commuter travel would not be used by any large number of persons who now commute either by rail or by private automobile.

3. The service provided by the suburban railroads must be made more attractive in comparison with private automobile transportation. To accomplish this the suburban railroads must provide:—

a. Faster service.

b. Seats for all passengers.

c. Cars with a modern standard of comfort, including air-conditioning and proper lighting.

d. Better parking facilities at suburban railroad stations.

A Program for Meeting the Needs

1. *Faster Service*

Characteristics of commuter travel from the Westchester Sector are similar to those found in the Long Island Sector in that the average length of ride of railroad commuters has been increasing and will continue to increase in the future. As the distance of the daily journey-to-work increases, the total travel time will increase beyond desirable limits. Therefore suburban railroad commuting service must be speeded up if the railroads are to continue to attract a proper share of the total commutation traffic.

At present, the origins of commuters, in point of distance from mid-Manhattan, are as follows:

Miles From Midtown	*Rail Commuters*	*Auto Commuters*	*Total*
0-25	38,771	15,715	54,486
25-45	18,084	2,157	20,241
45-60	1,209	193	1,402
TOTAL	58,064	18,065	76,129

Some measure of faster service could be obtained if the railroads provided cars with better acceleration and speed, if stations were consolidated resulting in fewer station stops, and if certain other operational improvements were instituted. However, the major factor in this situation is the slow operation of trains within New York City itself.

Investigations indicate that there is a serious "bottle-neck" causing slowing up of trains in the area between Woodlawn Junction, near the New York City Line, and Grand Central Terminal. From Mott Haven Junction to Grand Central Terminal the slow speed of operation is caused by the large number of trains to be accommodated, which requires that signals be placed at short intervals. This short spacing of signals results in reduced maximum allowable speeds which are determined by the braking ability of trains between successive signals. There is no practical way of increasing speed of operation in this section without increasing the number of tracks between Mott Haven Junction and Grand Central Terminal, which would be prohibitively expensive.

From Mott Haven Junction to Woodlawn Junction, the speed of express trains is reduced because many of them must operate on the same tracks as local trains which make several station stops in the Bronx. The service provided at all of these Bronx stations is in the nature of intracity rapid transit service which should be designed for moving a large volume of passengers for short distances with minimum comfort and maximum economy of operation. The suburban railroad services are not so designed. They should not be required to perform this intracity transit service which, if needed, should be maintained by the City of New York through the New York City Transit Authority. Each of the Bronx stations on the Harlem Division is in close proximity to existing stations on the lines of the New York City Transit Authority. If the operation of these local trains were abandoned, the New Haven Railroad and the Harlem Division of the New York Central Railroad could considerably speed up the operation of their suburban trains through the Bronx with a consequent benefit to the commuters. Capacity would be made available for the operation of future additional trains to accommodate the expected growth of commutation traffic.

The elimination of these local station stops was the first recommendation of the Public Utilities Commission of Connecticut in their report to the Governor, dated February 15, 1956, covering the results of their investigation of the operations of the New Haven Railroad.

North of Mott Haven Junction on the Hudson Division of the New York Central Railroad the same conditions of local train interference with express train movements do not exist. Most stations on the Division are not conveniently located with respect to existing lines of the New York City Transit System. The local service on the Hudson Division should be maintained unless traffic at individual stations declines to a point where service is no longer a public necessity.

2. *Adequate Seating Capacity*

At the present time both the New York Central and the New Haven Railroads generally provide seats for all passengers and no standee problem exists. The Ford, Bacon & Davis re-

port indicates, however, that commutation by rail from the Westchester Sector will continue to increase and that these railroads must be able to absorb at least 5,700 additional commuters by 1965 and an additional 3,900 commuters from 1965 to 1975. From a staff review of past trends and forecasts for the future it is estimated that these additional commuters will be divided between the New York Central and New Haven Railroads as follows:—

	Additional Commuters	
	1956-1965	*1965-1975*
New York Central Railroad	3,500	2,400
New Haven Railroad	2,200	1,500
TOTAL	5,700	3,900

To accommodate these additional commuters, the railroads will have to increase their fleets of cars accordingly. Considering modern commuter cars with a seating capacity of 128 persons, the increase in car ownership should be as follows:—

	1956-1965		*1965-1975*	
	No.	*Approx. Cost*	*No.*	*Approx. Cost*
New York Central Railroad	27	$4,050,000	19	$2,850,000
New Haven Railroad	17	$2,975,000	12	$2,100,000

If the New York Central should eliminate Bronx local trains on the Harlem Division, as discussed in the preceding Section, the number of cars required would be reduced accordingly and the need for increased car ownership would be as follows:—

	1956-1965		*1965-1975*	
	No.	*Approx. Cost*	*No.*	*Approx. Cost*
New York Central Railroad	6	$ 900,000	19	$2,850,000
New Haven Railroad	17	$2,975,000	12	$2,100,000

3. *Modernization of Cars*

One important method of maintaining and improving the usefulness of the suburban railroads is to provide transportation in comfortable, modern cars equipped with air-conditioning and adequate lighting. Both of the railroads operating in the Westchester Sector have a number of old cars which do not meet present-day standards and which should be replaced. In addition to providing modern standards of comfort, a car modernization program would result in a reduction of car maintenance and operating costs.

The electric car fleet of the New York Central Railroad now consists of 355 cars, 100 of which were purchased in 1950 and are modern in all respects. The remaining 255 cars range in age from 29 to 50 years and, though still serviceable, are not considered to be up to modern standards and are comparatively expensive to operate and maintain. Their average seating capacity is 89, compared to a seating capacity of 130 in the modern cars. These 255 older electric cars should be replaced by new cars of a type similar to those proposed by the Project Director for the New Jersey suburban railroads except that they must be equipped for electric operation. To make a replacement on a seat-for-seat basis would require the purchase of 177 new cars at a total cost of approximately $26,550,000.

The cars used in suburban locomotive-hauled trains are drawn from the New York Central's pool of coaches. All cars operated in this service are air-conditioned and it is not considered necessary to undertake a replacement program for them at this time.

The New Haven Railroad operates a fleet of 204 electric cars in the New York suburban area of which 100 are modern cars purchased in 1953. The remaining cars, with a seating capacity of 120, are not up to modern standards and should be replaced with cars similar to those suggested for the New York Central but modified for the different electrification system on the New Haven. Replacement on a seat-for-seat basis would require purchase of 98 cars at an approximate cost of $17,150,000.

None of the coaches operated by the New Haven in locomotive-hauled trains in the New York suburban area exceeds 27 years of age and all are air-conditioned. It is not considered necessary to undertake a replacement program for them at this time.

Assuming that these car purchases would be financed by a 20-year bond issue at 4% interest with annual sinking fund payments, the annual financing cost would amount to $1,954,000 for the New York Central and $1,262,000 for the New Haven. It is estimated that the new cars will result in annual savings in operating costs of $714,000 on the New York Central and $215,000 on the New Haven, resulting in a net annual cost of the modernization program of $1,240,000 for the New York Central and $1,047,000 for the New Haven.

(Other methods of financing, such as a 10-year conditional sales agreement or an issue of equipment trust certificates, would increase the annual payments for the first 10 years but eliminate them thereafter.)

These car purchases could be made over a period of three or four years.

4. *Parking Facilities at Railroad Stations*

With the increased use of private automobiles and with large population increases in areas not adjacent to existing railroad lines, the provision of adequate parking facilities at suburban railroad stations is to the best interests of both the railroad companies and the communities in which the stations are located. Lacking adequate parking facilities, some potential railroad customers will prefer to use their automobiles for commutation rather than the railroads.

The consultants' report indicated that 58% of railroad commuters use personal automobiles to reach the station and, of those, 81% park during the day. However, only 65% of the parked cars park in station parking areas, 24% use other private or municipal parking areas and 11% park on the public streets in the vicinity of the railroad stations. There is a deficiency in railroad station parking facilities at most stations on the New York Central Railroad. Though many of New Haven Railroad stations have adequate parking facilities, some, particularly those stations closest to New York City and in the larger communities in Connecticut, need to increase parking area capacities.

There are many possible arrangements for improving parking facilities and the railroads have already used some of them. Some parking areas are leased by the railroads to private operators; some are leased to municipalities; some are operated by the railroads and some are owned and operated by the municipalities. Some parking facilities are provided free of charge and at others there is a charge varying from 5¢ per hour to $10 per month. The railroads and the local municipalities should cooperate in developing adequate parking facilities adjacent to suburban railroad stations to the benefit of each. Such a program would not impose any financial burden on either the railroad or the municipality, as nominal parking charges would return sufficient revenue to make the parking areas self-supporting.

In his report to the Commission on May 20, 1957, the Project Director recommended that a new bi-state district be prepared to assist in financing station and parking field improvements on the New Jersey railroads. The staff does not consider that similar assistance is required in the Westchester Sector and that the railroads and local communities can jointly solve this problem. In fact, the Westchester County Department of Planning, in its report of November 1957 on the subject of station parking facilities, concluded that 2,000 additional spaces are required at stations in the County and that "the problem must be regarded as a municipal one (including action by local parking authorities)."

Methods of Effectuating the Improvements

The improvements recommended for the New York suburban lines of the New York Central and New Haven Railroads would require early capital outlays for new cars in amounts as follows:

New York Central Railroad	$27,450,000
New Haven Railroad	20,125,000
TOTAL	$47,575,000

On the basis of the financing methods discussed herein, and after the possible operating savings are effective, the average net annual cost to the railroads would approximate:

New York Central Railroad	$1,306,000
New Haven Railroad	1,266,000
TOTAL	$2,572,000

The staff considered the various available methods of financing the improvement program.

1. *By Railroad Financing*

The ideal way to effectuate the modernization program would be for the railroads involved to carry out the program with their own financing under private enterprise. To have any incentive at all to carry out such a program, the railroads would have to earn sufficient revenues to pay for the net cost of the program as well as to pay their other operating costs. The staff has made some investigations into the financial results of the operations of the New York Area suburban services on the New York Central and New Haven Railroads to determine the feasibility of this method.

New York Central

Taking into account the estimated results of the commutation fare increase and other fare increases recently granted to the New York Central Railroad but not the November 1957 wage increase, it is estimated that present suburban operations should result in an annual profit of $259,000, provided that the full increase in revenues will be attained with no diversion of traffic. This small profit falls far short of the annual requirements of the modernization program and provides only a meager return on the investment allocated to the suburban services (approximately $60,000,000). There seems to be no reason to believe that this situation will improve. In the most recent proceedings before the Public Service Commission in the matter of the fare increase requested by the New York Central Railroad, the Public Service Commission granted an increase which barely covered the cost of the services and made no provision for return on the investment on the theory that "it has been generally recognized for many years that railroad passenger business, as presently conducted, is not and cannot be operated at a profit".

During the same commutation fare case before the Public Service Commission, the New York Central Railroad presented evidence that its Putnam Division handled a very light traffic, that the line is in close proximity to its Hudson and Harlem Divisions, that passenger operations on the line are conducted at a large loss, and requested an unreasonably large increase in fares or, as an alternative, permission to suspend all passenger service on the line. The Commission did not grant either of these requests but allowed the railroad to reduce the amount of the service on the Division. If the railroad were allowed to suspend the remaining service on the Putnam Division an additional saving of $684,000 annually could be effected.

Although it may be expected that the New York Central Railroad will continue to provide adequate suburban service at the present levels of revenues and expenses and with meager return on the existing investment, it cannot be expected to enter into a modernization program unless it can be assured that it will be allowed to earn additional revenues at least sufficient to cover the interest and amortization charges involved in the modernization program. Even such an assurance will only provide the very minimum incentive to make improvements.

New Haven Railroad

On the New Haven Railroad, after giving effect to a 22% fare increase effective in Au-

gust 1956, it is estimated that the New York Area commutation service results in a net loss of approximately $1,750,000 a year. This estimate, which is based on information obtained from the New Haven Railroad, is on a fully allocated cost basis. The estimated deficit would, no doubt, be much lower if computed on an "avoidable cost" basis after a proper cost study, and without inclusion of the main line all the way to New Haven and the Pittsfield Branch as far as Danbury, both lines of which are considered by the New Haven to be in the New York suburban area. The deficit shown above covers commutation service only. No provision has been made to include either the revenues or costs of providing the non-commuter service within the New York suburban area. With this condition of deficit operation existing, the New Haven Railroad will have no incentive to put into effect any car modernization program.

2. *Fare Increases*

To obtain the needed revenues to finance the modernization program a modest increase in fares would be sufficient on the New York Central Railroad, but a large increase, approaching 35%, would be required on the New Haven Railroad. Substantial fare increases, however, may cause a diversion of commuters from rail service to the use of private automobiles and would tend to defeat the purpose of the program, which is to improve the competitive position of the rail service and thereby help alleviate problems of traffic congestion and parking.

3. *Tax Concessions*

The taxes charged on railroad properties, as allocated to New York suburban services, are particularly burdensome to the railroads and are an important reason for the current high level of suburban fares. The real estate taxes are in the amounts as follows:

	New York Central	*New Haven**
Manhattan and the Bronx	$3,477,000	$1,595,000
Westchester County	752,000	403,000

* No real estate tax on railroad operating properties is levied in Connecticut. The State assesses a tax on gross revenues and distributes it to local municipalities. The amount of such tax assessed on New York area commutation revenues within Connecticut is approximately $66,000.

Partial or full tax concessions on the railroad commuter service to assure the continuation of services which are considered to be necessary in the best interests of the community has several precedents in this area. The New York City Transit System is tax exempt. The Redevelopment Plan for the Long Island Rail Road included a tax reduction for a period of nine years in an amount of approximately 50%. The recent lease arrangement between the City of New York and the Staten Island Rapid Transit Railway had the effect of a full tax concession by the City to that railway.

In considering using a regional tax reduction as a method of fostering a modernization program, the staff was faced with the facts that—(1)—75% of the tax is collected by New York City, and its share of any tax concessions would be disproportionate to benefits received from the provision of the rail service, and—(2)—Fairfield County, Connecticut, which provides a major source of commuter traffic and obtains a large share of the benefits of commuter service, does not apply any real estate tax on railroad operating properties, so that it would be extremely difficult, if not impossible, to arrive at an equitable plan for tax concessions. The City of New York should, however, review its assessment for special franchise tax purposes of the railroad lines within the city to assure that the assessment is established at a level that will foster the continuation of a healthy commutation service, which is in the best public interests of the City, rather than at a level that will obtain for the City the maximum tax return from the railroads.

4. *Railroad Redevelopment Corporation Plan*

The application of a Railroad Redevelopment Corporation Plan, as established by New York State Law, to the Long Island Rail Road has been eminently successful. However, both the New York Central and the New Haven Railroads do not have the same characteristics of traffic and the geographical area served as does the Long Island Rail Road. The latter is completely within the State of New York and has a preponderance of suburban passenger traffic. The Railroad Redevelopment Corporation Plan cannot be applied to all lines of these larger railroads, and it would be difficult indeed to

devise a method of applying the Redevelopment Corporation Plan to the suburban services alone, which are only a small portion of the railroads' total services.

5. *Control of Services by a metropolitan district*

With the methods of substantially increased fares, sizable tax concessions, and the application of a Redevelopment Corporation Plan all presenting obstacles of varying degree, it appears that the most feasible method of obtaining the desired improvements in the Westchester Sector would be for a metropolitan district to acquire from the railroads control of the New York suburban services and to have operation of those services either by the district or by the railroads acting as operating agents for the district under contract. This is the plan proposed by the Project Director for the New Jersey railroads.

The amount of the deficits that would have to be apportioned among the constituent counties would, of course, be dependent upon the outcome of the negotiations between the district and the railroads involved and the rate of fares to be charged. On the New York Central Railroad the deficit, which includes the average annual cost of the car modernization program, would amount to approximately $1,047,000. If the district should determine to suspend service on the Putnam Division, these deficits would be reduced by approximately $684,000 annually and would amount to $363,000.

On the New Haven Railroad it is conceivable that the district would acquire control of only the multiple-unit services operated between New York and Stamford and on the New Canaan Branch. It might also acquire control of commuting services on the remaining portion of the main line within Fairfield County but might not acquire control of any service on the Pittsfield Branch or any main line service beyond the limits of Fairfield County. In this event, the present commutation deficit now reported as amounting to $1,750,000 might well be reduced to $1,300,000 or less. If New Haven commutation fares were raised to the level now charged on the New York Central the deficit would be further reduced by $860,000 to $440,000. (Such an increase was granted November 1, 1957.)

With these adjustments the total amount to be apportioned among the constituent counties of the district would be approximately $1,706,000.

The deficits shown above are presented merely as an indication of possible magnitude. The actual results would depend finally on the results of negotiations between the district and the railroads, the rate of fare charged, and possible revisions in taxing policies.

To incorporate the Westchester Sector into the metropolitan district recommended by the Project Director for the New Jersey Sector would require that the district be tri-state in character, including Connecticut, rather than being bi-state.

The formulas proposed by Dr. Miller, and concurred in by the Project Director, for the determination of representation on the council of the district and for apportionment of possible deficits are based on the full valuation of taxable property, population, and the number of originating transit passengers to New York City. The information for the application of those formulas to the Westchester-Fairfield Sector is as follows:

County	*Full Value of Taxable Property (Millions)*	*1955 Population (Thousands)*	*Estimated 1975 Population (Thousands)*	*Transit Passengers into N. Y. C.*
New York	$9,318	1,875	1,825	—
Westchester	3,574	735	1,000	86,000
Fairfield	2,826*	555	800	18,000

* *Estimated*

Section VII

THE NEW JERSEY STUDIES

The Commission, on April 26, 1956, retained the consulting firm of Wm. Wyer & Co. of East Orange, N. J., to conduct a general review and study of the various economic and geographic characteristics of Northeastern New Jersey, to conduct a review of previous transit studies in New Jersey and to provide expert advice to the Commission as to which areas within the State of New Jersey have requirements for intrastate transportation sufficient to merit study by the Commission. A report was submitted on July 13, 1956.

Mr. Wyer recommended that the Commission consider intrastate rapid transit studies, to be carried out in connection with interstate studies, in the following areas:

1. Hudson and Bergen Counties

The study would cover the heavily populated and densely developed area from Bayonne on the south through Jersey City, Hoboken, Union City, Weehawken, West New York, Guttenberg and North Bergen into the southern part of Bergen County. It would be directly related to services based on the Jersey Central, West Shore, and the Northern Branch of the Erie Railroad, and also the north-south leg of any bi-state loop system or any Staten Island line that might be recommended in the interstate studies.

2. Newark Area

Any intrastate study in this area should include consideration of means of connecting the existing railroad lines more directly to the major employment centers of the area.

Mr. Wyer also recommended consideration of studies of the following independent intrastate rapid transit proposals in the Elizabeth-Newark-Paterson area:

(a) A Newark-Paterson route based on the Newark City Subway.

(b) An alternate Newark-Paterson route along the west bank of the Passaic River.

(c) Facilities for better distribution of passengers within Newark, including a subway under Broad Street, service to the heavy employment centers east and south of Newark, and connections with existing east-west rail lines.

(d) A rapid transit line from Newark westward into Irvington, Maplewood and Union to provide better transportation for workers into the Newark area and to provide access to interstate transit lines.

Upon review of Mr. Wyer's report, the Commission concluded that any intrastate transit studies within New Jersey had best be deferred until the completion of the interstate studies then underway. Intrastate transit must, of necessity, be closely coordinated with interstate transit and, in fact, some of the necessary local intrastate services might well be provided by any of the interstate improvements to be recommended.

APPENDIX

Table 1

Population, Labor Force, and Employment of New York Metropolitan Region, 1955—1975

(Thousands of Persons)

County	Population 1955	Population 1975	Resident Labor Force 1955	Resident Labor Force 1975	Employment 1955	Employment 1975
REGION:	15,225	19,100	6,275	7,700	6,275	7,700
NEW YORK CITY:	8,050	8,400	3,380	3,430	3,840	3,930
Bronx	1,490	1,500	610	600	230	280
Kings	2,725	2,675	1,095	1,055	665	740
New York	1,875	1,825	860	790	2,520	2,280
Queens	1,750	1,900	735	800	390	530
Richmond	210	500	80	185	35	100
ENVIRONS:	7,175	10,700	2,900	4,270	2,435	3,770
New Jersey:	4,005	5,825	1,660	2,365	1,415	2,100
Bergen	655	1,100	270	445	200	400
Essex	950	1,100	400	455	365	415
Hudson	645	600	275	250	245	270
Middlesex	335	700	140	280	115	235
Monmouth	280	600	95	220	70	135
Morris	200	400	75	160	55	120
Passaic	375	460	170	200	150	165
Somerset	115	225	45	85	35	60
Union	450	640	190	270	180	300
New York:	2,615	4,075	1,005	1,590	785	1,350
Dutchess-Putnam	190	320	70	125	60	115
Nassau	975	1,400	375	550	295	475
Orange	170	260	60	95	50	85
Rockland	100	250	35	95	30	60
Suffolk	445	845	155	310	110	265
Westchester	735	1,000	310	415	240	350
Connecticut:						
Fairfield	555	800	230	315	235	320

Source: Regional Plan Association.

Table 2

The Suburban Railroad Network

Railroad	From	To	Miles	Daily Commuters To Manhattan (Each Way)
NEW JERSEY SECTOR				
West Shore (N. Y. C.)	Weehawken	W. Haverstraw	34	4,500
Susquehanna	Jersey City	Butler	38	2,000
Erie				14,200
No. Branch	Jersey City	Nyack, N. Y.	29	900
N. J. & N. Y.	Jersey City	Spring Valley, N. Y.	32	1,700
Main Line	Jersey City	Port Jervis	87	8,100
Greenwood Lake Div.	Jersey City	Wanaque	32	2,600
Caldwell Br.	Great Notch	Essex Fells	6	200
Newark Br.	Jersey City	Paterson	20	700
Lackawanna				18,600
Morris & Essex Div.	Hoboken	Dover	39	12,900
Montclair Br.	Roseville	Montclair	4	2,800
Gladstone Br.	Summit	Gladstone	22	1,000
Boonton Br.	Hoboken	Dover	39	1,900
Jersey Central				10,500
Main Line	Jersey City	Raritan	37	8,400
Newark Br.	Elizabethport	Newark	7	—
Sound Shore Br.	Elizabeth	Chrome	6	17
N. Y. & Long Branch	Elizabethport	Bay Head Jct.	49	1,800
Seashore Br.	Matawan	Highlands	14	400
Pennsylvania				15,700
Main Line	New York	Trenton	58	12,700
N. Y. & Long Branch	Rahway	Bay Head Jct.	46	3,000
Princeton Br.	Princeton	Princeton Jct.	3	—
Jersey City Br.	Jersey City	Newark	6	—

Table 2 (Continued)

Railroad	From	To	Miles	Daily Commuters To Manhattan (Each Way)
WESTCHESTER SECTOR				
N. Y. Central				34,200
Hudson Div.	Grand Central	Peekskill	41	9,400
Harlem Div.	Grand Central	Brewster	52	23,700
Putnam Div.	Sedgwick Ave.	Brewster	53	1,100
New Haven				23,900
Main Line	Grand Central	New Haven	72	
New Canaan Br.	Stamford	New Canaan	7	
Danbury Br.	Norwalk	Danbury	24	
LONG ISLAND SECTOR				
Long Island RR				65,000
Main Line	New York	Greenport	96	
Oyster Bay Br.	Mineola	Oyster Bay	14	
Pt. Jefferson Br.	Hicksville	Pt. Jefferson	32	
Hempstead Br.	Floral Park	Hempstead	5	
Montauk Div.	Jamaica	Montauk	107	
W. Hempstead Br.	Valley Stream	W. Hempstead	5	
Far Rockaway Br.	Valley Stream	Far Rockaway	5	
Long Beach Br.	Valley Stream	Long Beach	7	
Old Southern	Jamaica	Valley Stream	7	
Atlantic Ave. Line	Brooklyn	Jamaica	9	
Pt. Washington Br.	L. I. City	Pt. Washington	16	

Table 3

Commuters to New York City by Sector and Mode of Transportation, 1930-55

(Thousands of Persons)

Sector	Mode	1930	1940	1950	1955
New Jersey:	Railroad*	111	72	78	57
	Local H & M	48	31	28	18
	Auto & Bus	20	46	65	76
	Total	179	149	171	151
Westchester:	Railroad	56	42	59	59
	Auto & Bus	6	8	10	28
	Total	62	50	69	87
Long Island:	Railroad	48	48	75	74
	Auto & Bus	12	17	28	58
	Total	60	65	103	132
All Sectors:	Railroad *	215	162	212	190
	Local H & M	48	31	28	18
	Auto & Bus	38	71	103	162
	Total	301	264	343	370

* Including Newark passengers via H & M

Sources: Regional Plan Association (1930-1950); Charles E. De Leuw, Ford, Bacon & Davis, Day & Zimmermann (1955)

Table 4

Destination of Weekday Passenger Traffic From All Suburbs Into New York City,* 1955

(Thousands of Persons)

Destination	New Jersey	Westchester	Long Island	Total
Total Daily:	383	187	328	898
Manhattan	263	126	129	518
Battery-Houston St.	68	24	37	129
Houston-34th Sts.	57	17	33	107
34th-59th Sts.	96	69	47	212
North of 59th St.	41	16	12	69
Brooklyn	35	12	48	95
Queens	25	—	130	155
Long Island	11	2	—	13
Bronx	25	34	12	71
Westchester	24	—	5	29
New Jersey	—	5	5	10
All Others	—	8	—	8
Commuters (7-10 A.M.), Total:	151	87	132	370
Manhattan	135	68	86	289
Battery-Houston St.	47	14	28	89
Houston-34th Sts.	27	9	21	57
34th-59th Sts.	54	39	34	127
North of 59th St.	8	6	4	18
Brooklyn	6	3	15	24
Queens	3	—	28	31
Long Island	1	—	—	1
Bronx	3	12	2	17
Westchester	3	—	1	4
New Jersey	—	1	1	2
All Others	—	3	—	3
Peak-Hour, Total:	89	51	64	204
Manhattan	82	43	43	168
Battery-Houston St.	33	9	14	56
Houston-34th Sts.	16	6	11	33
34th-59th Sts.	30	25	17	72
North of 59th St.	4	3	2	9
Brooklyn	2	2	7	11
Queens	1	—	12	13
Long Island	—	—	—	—
Bronx	2	4	1	7
Westchester	1	—	—	1
New Jersey	—	1	—	1
All Others	—	1	—	1

* Excluding traffic from New Jersey into Staten Island.

Note: Numbers do not always add up to indicated totals because of rounding.

Table 5

Destination of Weekday Passenger Traffic From All Suburbs Into New York City* by Mode of Transportation, 1955

(Thousands of Persons)

Destination	Rail	Bus	Auto	Total
Total Daily:	322	120	456	898
Manhattan	282	90	146	518
Battery-Houston St.	94	12	23	129
Houston-34th Sts.	62	17	29	107
34th-59th Sts.	114	47	51	212
North of 59th St.	12	15	43	69
Brooklyn	20	9	66	95
Queens	9	8	137	155
Long Island	1	—	11	13
Bronx	3	13	56	71
Westchester	1	—	28	29
New Jersey	1	—	9	10
All Others	4	—	4	8
Commuters (7-10 A.M.), Total:	208	63	99	370
Manhattan	195	51	43	289
Battery-Houston St.	74	6	9	89
Houston-34th Sts.	39	8	9	57
34th-59th Sts.	77	34	17	127
North of 59th St.	5	4	10	18
Brooklyn	8	3	12	24
Queens	3	3	25	31
Long Island	—	—	1	1
Bronx	—	5	12	17
Westchester	—	—	4	4
New Jersey	—	—	2	2
All Others	2	—	1	3
Peak-Hour, Total:	136	29	39	204
Manhattan	127	24	17	168
Battery-Houston St.	49	2	4	56
Houston-34th Sts.	25	4	3	33
34th-59th Sts.	50	16	6	72
North of 59th St.	3	2	4	9
Brooklyn	5	2	5	11
Queens	2	2	11	13
Long Island	—	—	—	—
Bronx	—	2	4	7
Westchester	—	—	1	1
New Jersey	—	—	1	1
All Others	1	—	—	1

* Excluding traffic from New Jersey into Staten Island.

Note: Numbers do not always add up to indicated totals because of rounding.

Table 6

Destination of Weekday Passenger Traffic from New Jersey Into New York City, 1955

(Thousands of Persons)

Destination	Rail	Bus	Auto	Total
Total Daily:	128	91	164	383
Manhattan	113	79	71	263
Battery-Houston St.	49	11	9	68
Houston-34th Sts.	27	16	14	57
34th-59th Sts.	31	41	24	96
North of 59th St.	6	12	24	41
Brooklyn	7	5	23	35
Queens	4	4	17	25
Long Island	1	—	9	11
Bronx	2	3	21	25
Westchester	1	—	23	24
Commuters (7-10 A.M.), Total:	75	48	28	151
Manhattan	73	45	16	135
Battery-Houston St.	39	5	3	47
Houston-34th Sts.	15	8	4	27
34th-59th Sts.	18	30	6	54
North of 59th St.	1	2	4	8
Brooklyn	1	1	3	6
Queens	—	1	2	3
Long Island	—	—	1	1
Bronx	—	—	3	3
Westchester	—	—	3	3
Peak-Hour, Total:	57	22	10	89
Manhattan	55	21	6	82
Battery-Houston St.	29	2	1	33
Houston-34th Sts.	11	4	1	16
34th-59th Sts.	14	14	2	30
North of 59th St.	1	1	2	4
Brooklyn	1	1	1	2
Queens	—	1	1	1
Long Island	—	—	—	—
Bronx	—	—	1	2
Westchester	—	—	1	1

Note: Numbers do not always add up to indicated totals because of rounding.
Sources: Charles E. De Leuw, Port of New York Authority.

Table 7

Destination of Weekday Passenger Traffic From Westchester Into New York City, 1955

(Thousands of Persons)

Destination	Rail	Bus	Auto	Total
Total Daily:	89	17	81	187
Manhattan	83	7	36	126
Battery-Houston St.	17	—	6	24
Houston-34th Sts.	11	1	6	17
34th-59th Sts.	53	3	13	69
North of 59th St.	2	3	11	16
Brooklyn	1	—	11	12
Long Island	—	—	2	2
Bronx	1	10	23	34
New Jersey	—	—	5	5
All Others	4	—	4	8
Commuters (7-10 A.M.), Total:	59	9	19	87
Manhattan	56	4	8	68
Battery-Houston St.	12	—	2	14
Houston-34th Sts.	7	—	1	9
34th-59th Sts.	35	2	3	39
North of 59th St.	2	2	3	6
Brooklyn	1	—	2	3
Long Island	—	—	—	—
Bronx	—	5	7	12
New Jersey	—	—	1	1
All Others	2	—	1	3
Peak-Hour, Total:	40	4	7	51
Manhattan	38	2	3	43
Battery-Houston St.	8	—	1	9
Houston-34th Sts.	5	—	—	6
34th-59th Sts.	23	1	1	25
North of 59th St.	1	1	1	3
Brooklyn	1	—	1	2
Long Island	—	—	—	—
Bronx	—	2	2	4
New Jersey	—	—	1	1
All Others	1	—	—	1

Note: Numbers do not always add up to indicated totals because of rounding.
Source: Ford, Bacon & Davis.

Table 8

Destination of Weekday Passenger Traffic from Long Island Into New York City, 1955

(Thousands of Persons)

Destination	Rail	Bus	Auto	Total
Total Daily	105	12	211	328
Manhattan	86	4	39	129
Battery-Houston St.	28	1	8	37
Houston-34th Sts.	24	—	9	33
34th-59th Sts.	30	3	14	47
North of 59th St.	4	—	8	12
Brooklyn	12	4	32	48
Queens	5	4	120	130
Bronx	—	—	12	12
Westchester	—	—	5	5
New Jersey	1	—	4	5
Commuters (7-10 A.M.), Total:	74	6	52	132
Manhattan	65	2	19	86
Battery-Houston St.	23	1	4	28
Houston-34th Sts.	17	—	4	21
34th-59th Sts.	24	2	8	34
North of 59th St.	2	—	3	4
Brooklyn	6	2	7	15
Queens	3	2	23	28
Bronx	—	—	2	2
Westchester	—	—	1	1
New Jersey	—	—	1	1
Peak-Hour, Total:	39	3	22	64
Manhattan	34	1	8	43
Battery-Houston St.	12	—	2	14
Houston-34th Sts.	9	—	2	11
34th-59th Sts.	13	1	3	17
North of 59th St.	1	—	1	2
Brooklyn	3	1	3	7
Queens	2	1	10	12
Bronx	—	—	1	1
Westchester	—	—	—	—
New Jersey	—	—	—	—

Note: Numbers do not always add up to indicated totals because of rounding.
Source: Day & Zimmermann.

Table 9

Suburban Population Increases by 1975 Within Existing Rail Travel Time Zones To Mid-Manhattan*

Sector and County	30-45 Minutes	45-60 Minutes	60-75 Minutes	75-90 Minutes	Totals
All Sectors:	65	437	1,025	1,061	2,588
New Jersey:	40	347	675	560	1,622
Bergen	55	155	140	105	455
Essex	5	35	54	41	135
Hudson	–40	–5	—	—	–45
Middlesex	—	100	227	51	378
Monmouth	—	—	22	119	141
Morris	—	—	20	128	148
Passaic	—	2	68	10	80
Somerset	—	—	15	50	65
Union	20	60	99	6	185
Rockland	—	—	30	50	80
Westchester:	5	20	130	205	360
Westchester	5	20	80	105	210
Fairfield	—	—	50	100	150
Long Island:	20	70	220	296	606
Nassau	20	70	200	50	340
Suffolk	—	—	20	246	266

* 6th Ave. and 40th St.

Sources: Regional Plan Assoc., Metropolitan Rapid Transit Survey.

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