PERSONS AND VEHICLES ENTERING MANHATTAN SOUTH OF 61st STREET 1924-1948

REGIONAL PLAN BULLETIN OCTOBER 1949 NUMBER 74

THE movement of persons into lower Manhattan during a typical business day increased from 3,271,000 in 1940* to 3,765,000 in 1948.

This is disclosed by a study based upon the traffic data provided through cooperation of the Port of New York Authority, various New York City agencies—Police, Public Works, Board of Transportation, Triborough Bridge and Tunnel Authority, private bus lines and railroads.

Through the assistance of all these agencies it has been possible to collect and compile statistics of all passenger movements in vehicles on surface streets as well as in subways and on railroads and ferries into lower Manhattan (south of 61st Street) on a typical business day in 1948.

Together with similar statistics compiled previously by the Regional Plan Association for typical business days in 1924, 1932 and 1940, it is possible to continue the study of significant trends.

PASSENGER AND VEHICLE MOVEMENTS IN 1948

Daily Movements

Based on sample counts taken by the several cooperating agencies in April, May and July, 1948, it is estimated that a total of 3,765,000 persons and 382,000 autos, buses and trucks entered lower Manhattan (south of 61st Street) on a 24-hour typical business day in 1948.

Where From

The largest movement of passengers into lower Manhattan, 1,628,000 and the largest proportion or 43 per cent, was from upper Manhattan, Bronx, Westchester and beyond. Included in the movement from this sector were about 13,000 passenger movements from New Jersey across the George Washington Bridge. The next largest movement to lower Manhattan, 1,151,000 or 31 per cent, was from Long Island via Brooklyn, while the third largest group, 612,000 or 16 per cent, was from Long Island via Queens.

A LOT OF MOTOR VEHICLES

The motor vehicles entering Manhattan south of 61st Street during a typical day in 1948, if placed in one parking field, would cover an area of approximately 2630 acres. This is equivalent to the ground floor area of all private property in Manhattan south of 52nd Street †

The fourth group, 333,000 persons or 9 per cent, was from New Jersey. The smallest group, about 41,000 persons or 1 per cent, was from Staten Island. It is estimated that another 1,000 came from Staten Island into Manhattan via Bayonne but are included in the New Jersey sector.

TABLE 1.
PASSENGER MOVEMENTS INTO LOWER MANHATTAN ON A TYPICAL BUSINESS DAY IN 1948

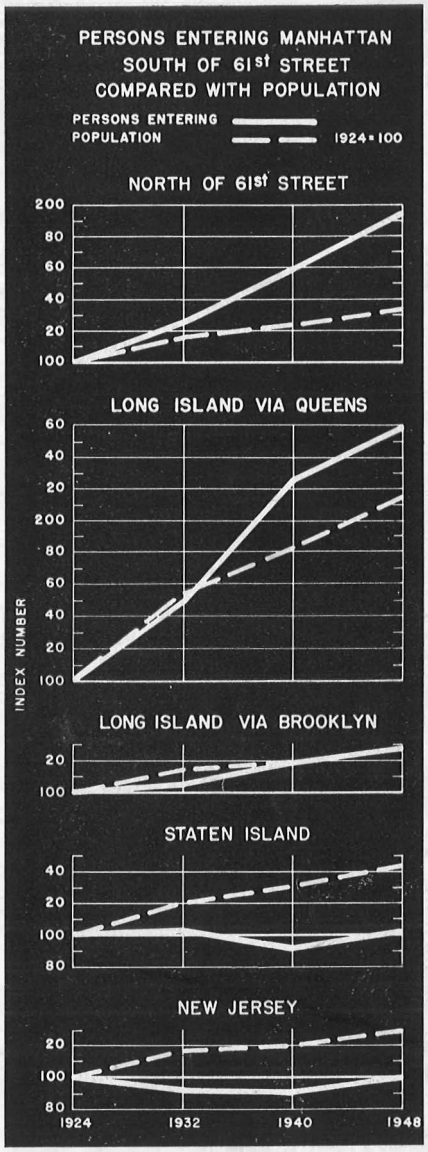
From:	Persons	Per Cent
Upper Manhattan, Bronx, Westchester and beyond	1,628,000	43
Long Island via Brooklyn	1,151,000	31
via Queens	612,000	16
New Jersey	333,000	9
Staten Island	41,000	1
All Sectors	3,765,000	100

How Passengers Entered

By far the largest passenger movements into lower Manhattan, 2,389,000 persons, and greatest proportion, 64 per cent, was by rapid transit. The movement via the Hudson and Manhattan Tubes, considered as a rapid transit system, was about 100,000 while that via the New York City Rapid Transit System was about 2,290,000 people.

Incidentally, it appears that about 70 per cent of the New York City Rapid Transit Subway System fares collected in the entire city were from passengers that originated outside of

*Note 1. †Note 2. (Page 5)



NOTE

In the chart above and the chart on page 6, the areas included in determining population and motor vehicle registration trends for each sector are as follows:

North of 61st Street—Manhattan north of 61st Street, the Bronx, Westchester and Fairfield Counties.

Long Island via Queens—Queens, Nassau and Suffolk Counties.

Long Island via Brooklyn—Brooklyn.

Staten Island—Staten Island.

New Jersey—Bergen, Passaic, Hudson, Essex, Morris, Union, Somerset, Middlesex and Monmouth Counties.

lower Manhattan and who were destined for or passed through, and then returned from or through, lower Manhattan.

The next largest passenger movement, 626,000 persons or 17 per cent, was by auto. Buses and trolleys handled 8 per cent and railroads 7 per cent. Truck drivers and helpers accounted for 3 per cent. One per cent came in by ferries as pedestrians or non-railroad passengers.

Vehicles that moved on the surface streets—autos, buses, trucks and trolleys—accounted for about 1,045,000 passenger movements. It is significant that autos brought in 626,000 persons, about twice as many as buses and trolleys (314,000) and more than twice as many as all the railroads (283,000).

TABLE 2.
PASSENGER MOVEMENTS INTO LOWER MANHATTAN VIA DIFFERENT MODES OF TRANSPORTATION ON A TYPICAL BUSINESS DAY IN 1948

Via:	Persons	Per Cent
Rapid Transit	2,389,000	64
Autos	626,000	17
Buses and Trolleys	314,000	8
Railroads	283,000	7
Trucks	105,000	3
Ferries (a)	48,000	1
All Modes of Travel	3,765,000	100

(a) as pedestrians or non-railroad passengers.

Variations by Sector

Within New York City, rapid transit subways are available and are the fastest means of reaching Manhattan (with the exception of the relatively small areas served by railroad). Consequently, about 84 per cent of the persons entering via Brooklyn, 61 per cent of those via Queens and 58 per cent via upper Manhattan, used rapid transit to enter lower Manhattan.

Passenger movements from New Jersey, on the other hand, were divided about equally among steam railroads, H & M Tubes and interstate buses, depending upon the availability and relative convenience of each of these three modes of travel.

Staten Island residents are almost wholly dependent upon the St. George-Whitehall Street Ferry, although about 3 per cent of those from Staten Island did come in by auto and bus via the Bayonne Bridge and the Holland or Lincoln Tunnels.

Some 1,045,000 persons came to lower Manhattan in surface vehicles —autos, buses, trolleys and trucks. About 16 per cent of those from Long Island, 36 per cent of those from upper Manhattan, Bronx and Westchester and about 42 per cent from New Jersey used surface vehicles to reach Manhattan.

Persons in Motor Vehicles

The 1,021,000 passenger movements into lower Manhattan in motor vehicles were made in 382,000 bus, auto and truck trips. Buses carried on an average about 29 persons, autos about 2, and trucks 1.6. (There were, in addition, about 24,000 passengers in trolleys).

TABLE 3.
PASSENGER MOVEMENTS INTO LOWER MANHATTAN IN MOTOR VEHICLES ON A TYPICAL BUSINESS DAY IN 1948

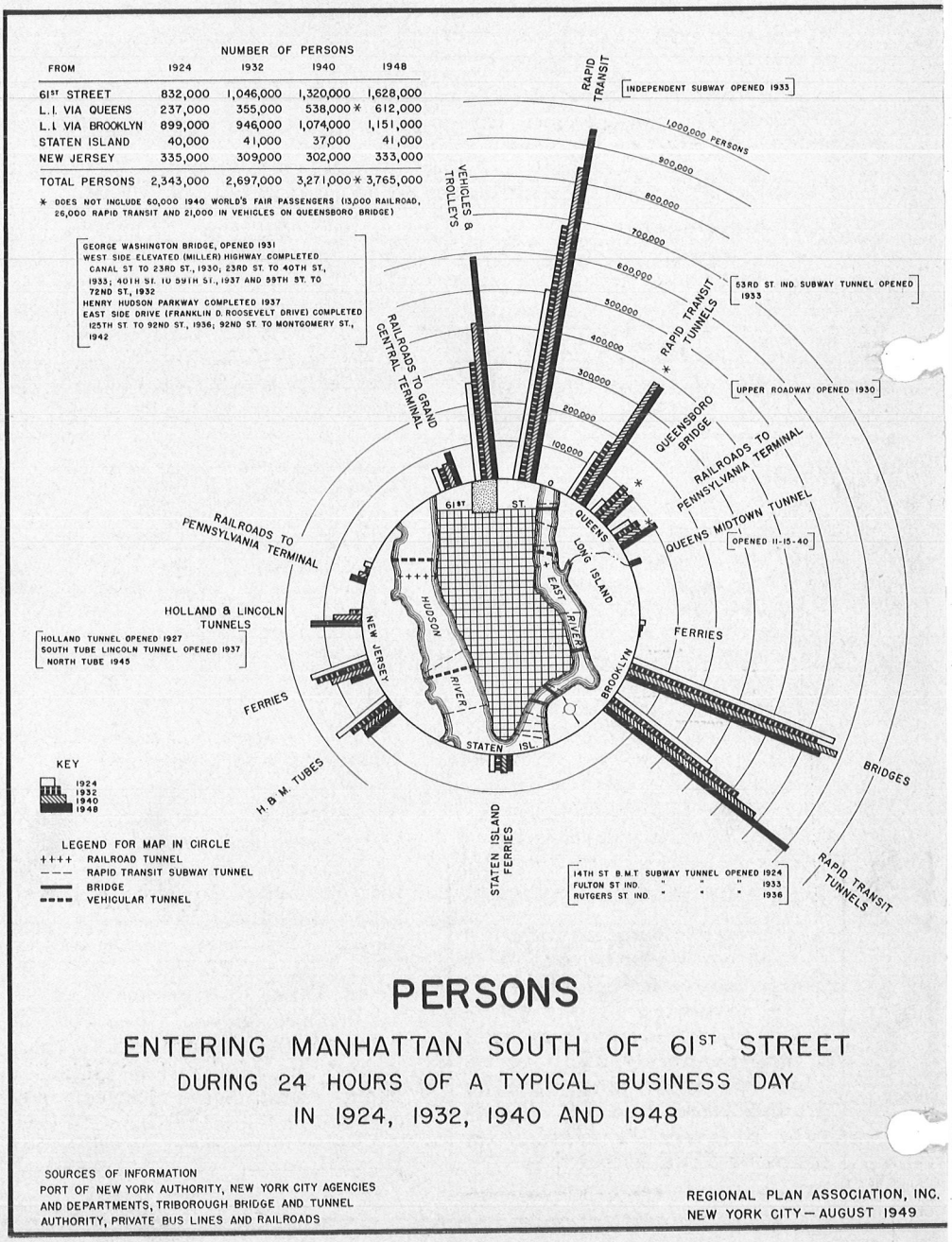
	Persons	Vehicles	Persons Per Vehicle
Buses	290,000	10,000	29.0
Autos	626,000	304,300	2.1
Trucks	105,000	67,700	1.6
All Motor Vehicles	1,021,000	382,000	2.7

Where Motor Vehicles Came From

About 53 per cent of the motor

TABLE 4.
MOTOR VEHICLE MOVEMENTS INTO LOWER MANHATTAN ON A TYPICAL BUSINESS DAY IN 1948

From:	Total	Per Cent
Upper Manhattan, Bronx, Westchester and beyond	202,700	53
Long Island		
via Brooklyn	79,300	21
via Queens	55,700	14
New Jersey	42,900	11
Staten Island	1,400	1
All Sectors	382,000	100



PERSONS

ENTERING MANHATTAN SOUTH OF 61ST STREET

DURING 24 HOURS OF A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

SOURCES OF INFORMATION
PORT OF NEW YORK AUTHORITY, NEW YORK CITY AGENCIES AND DEPARTMENTS, TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY, PRIVATE BUS LINES AND RAILROADS

REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY—AUGUST 1949

Table 8

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL DAY IN 1948

From	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Rapid Transit	Via Railroads	As Pedestrians	Via All Modes
Upper Manhattan, Bronx and Westchester via:									
Miller Highway	79 000			79,000					79,000
7 Avenues 11th-6th	105,000	78,000	13,000	196,000		590,000		(a)	786,000
7 Avenues 5th-1st	125,000	124,000	17,000	266,000		356,000	93,000	(a)	715,000
F.D. Roosevelt Drive	48,000			48,000					48,000
Total	357,000	202,000	30,000	589,000		946,000	93,000	(a)	1,628,000
Long Island									
Brooklyn via:									
Manhattan Bridge	64,000	1,000	18,000	83,000		248,000		(a)	331,000
Williamsburg Bridge	18,000		25,000	43,000	12,000	118,000		(a)	173,000
Brooklyn Bridge	34,000	(a)		34,000	9,000			(a)	43,000
Rapid Transit Tunnels						604,000			604,000
Total	116,000	1,000	43,000	160,000	21,000	970,000		(a)	1,151,000
Queens via:									
Queensboro Bridge	65,000	23,000	12,000	100,000	3,000			(a)	103,000
Queens-Midtown Tunnel	27,000	(a)	3,000	30,000					30,000
Rapid Transit & RR Tunnels						372,000	107,000		479,000
Total	92,000	23,000	15.000	130,000	3,000	372,000	107,000		612,000
New Jersey via:									
Holland Tunnel	33,000	7,000	8,000	48,000					48,000
Lincoln Tunnel	21,000	57,000	5,000	83,000					83,000
7 Ferries	5,000		3,000	8,000			41,000	10,000	59,000
Railroad Tunnels						101,000	42,000		143,000
Total	59,000	64,000	16,000	139,000		101,000	83,000	10,000	333,000
Staten Island via:									
St. George-Whitehall Street Ferry	2,000		1,000	3,000				38,000	41,000
All Sectors	626,000	290,000	105,000	1,021,000	24,000	2,389,000	283,000	48,000	3,765,000

(a) negligible

Table 9

MOTOR VEHICLE MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL DAY IN 1948

From	Autos	Buses	Trucks	Motor Vehicles	Trolleys
Upper Manhattan, Bronx and Westchester via:					
Miller Highway	38,200			38,200	
7 Avenues 11th-6th	50,200	2,600	10,700	63,500	
7 Avenues 5th-1st	59,900	3,900	13,900	77,700	
F. D. Roosevelt Drive	23,300			23,300	
Total	171,600	6,500	24,600	202,700	
Long Island					
Brooklyn via:					
Manhattan Bridge	32,000	100	8,800	40,900	
Williamsburg Bridge	9,000		12,500	21,500	600
Brooklyn Bridge	16,900	(a)		16,900	500
Total	57,900	100	21,300	79,300	1,100
Queens via:					
Queensboro Bridge	32,400	900	6,600	39,900	100
Queens-Midtown Tunnel	14,100	(a)	1,700	15,800	
Total	46,500	900	8,300	55,700	100
New Jersey via:					
Holland Tunnel	14,000	300	6,700	21,000	
Lincoln Tunnel	10,200	2,200	3,900	16,300	
7 Ferries	3,000		2,600	5,600	
Total	27,200	2,500	13,200	42,900	
All Sectors	304,300	10,000	67,700	382,000	
Staten Island via:					
St. George-Whitehall Street Ferry	1,100		300	1,400	1,200

(a) negligible

Queens—The movements of persons from Long Island via Queens has since 1932 increased at a slightly greater rate than has the area's population. This reflects the great dependence of those areas on Manhattan for employment. One point of interest is the lack of any increase in passenger movement by rapid transit between 1940 and 1948. Rail and vehicle traffic have accommodated the 1940-1948 increase.

North of 61st Street—It is from upper Manhattan, Bronx, Westchester and beyond (including traffic across the George Washington Bridge) that we see the most noticeable gain in persons entering lower Manhattan when compared with population growth in that sector. A population increase of about 34 per cent has been accompanied by a 96 per cent gain from 1924 to 1948 in persons entering lower Manhattan. Autos, buses, railroads and rapid transit have all shared in carrying this large increase in passenger movements.

Staten Island—Due to distance and difficulty of transportation the number of persons entering from Staten Island is small and uninfluenced by the population growth of that Borough.

A comparison of trends in vehicular movements from each sector with the trends in total motor vehicles registered in each sector discloses no uniform relationships. Two factors—availability of alternative modes of transportation and capacity of the points of vehicular access to lower Manhattan—exert strong influence.

Only from the New Jersey and the Queens-Long Island sectors do we find the increase in motor vehicles entering lower Manhattan proportionately greater than the increase in motor vehicles registered in the same sector.

In New Jersey this is due to both the above mentioned factors being conducive to vehicular travel—rail travel relatively less convenient and expanded capacities of vehicular crossings.

NOTE 1

It should be noted that the comparability of data for the Long Island via Queens sector is affected by travel of visitors to and from the New York World's Fair in 1940. This resulted in an estimated 60,000 passenger movements into lower Manhattan daily across the East River returning from the World's Fair via several modes of travel distributed as follows:

Via Railroad	13,000
Via Rapid Transit	26,000
Via Auto and Truck	16,000
Via Bus and Trolley	5,000
Via All Modes of Travel	60,000

The auto and bus passengers were carried in approximately 8,000 vehicles.

In this bulletin, these 60,000 World's Fair visitors were excluded from the 1940 statistics on passenger movements as were also the 8,000 vehicles, in order to permit valid comparisons with 1924, 1932 and 1948 traffic statistics.

Thus, the total 1940 passenger and vehicle movements in this bulletin are less than those in the "Traffic and Parking Study"—December, 1942, where no deductions were made for World's Fair traffic.

NOTE 2

The passenger and vehicle movements referred to in this bulletin include movements through lower Manhattan and movements of lower Manhattan residents returning from daily activities outside the area. The through movements, moreover, may be included twice; once when they represent the movements in from the origin sector in the morning and again returning through the lower Manhattan area from the morning's destination sectors, in the afternoon.

The data does not include the persons and vehicles that are in lower Manhattan (south of 61st Street) at the beginning of the day and whose activity is confined to the area.

TABLE 5.

EIGHT-YEAR CHANGES IN PERSONS ENTERING LOWER MANHATTAN ON A TYPICAL BUSINESS DAY

From:	1924-32	1932-40	1940-1948
	Numerical Changes		
Upper Manhattan, Bronx, Westchester and beyond	+214,000	+274,000	+308,000
Long Island via Brooklyn	+ 47,000	+128,000	+ 77,000
Long Island via Queens	+118,000	+183,000	+ 74,000
New Jersey	− 26,000	− 7,000	+ 31,000
Staten Island	+ 1,000	− 4,000	+ 4,000
All Sectors	+354,000	+574,000	+494,000
	Percentage Changes		
Upper Manhattan, Bronx, Westchester and beyond	+25.7	+26.2	+23.3
Long Island via Brooklyn	+ 5.2	+13.5	+ 7.2
Long Island via Queens	+49.8	+51.5	+13.8
New Jersey	− 7.8	− 2.3	+10.3
Staten Island	+ 2.5	− 9.8	+10.8
All Sectors	+15.1	+21.3	+15.1

passengers between 1940 and 1948 was more than twice as large as that in the previous eight-year period, 1932 to 1940. However, there were some declines in the bus and trolley passenger movements across the East River.

Rapid transit passengers accounted for the largest numerical increase (220,000) in the last eight-year interval, although this increase was only about half that of the 1932-1940 period.

Automobile and truck passenger movements from all sectors expanded from 1940 to 1948 by 112,000 persons, an amount slightly greater than the increase of the 1932-1940 period, but only 60 per cent of the gain during the first eight-year period, 1924-1932. The expansion in the last eight years is to be accounted for largely by automobile passengers from upper Manhattan, Bronx and Westchester and to some extent, by persons from New Jersey. The number from the other two sectors declined.

Pedestrians via ferries have declined consistently throughout the 24-year period, 1924-1948. The declines in ferry passenger movements into Manhattan from New Jersey may be accounted for by the shift from ferries to another mode of travel. In earlier years, these persons arrived at Hudson River ferries by local New Jersey trolleys and buses. Over the years, they switched to interstate buses that brought them into Mid-Manhattan.

Trends in Motor Vehicle Movements

In 1948, 30,800 more autos, buses and trucks entered lower Manhattan daily than in 1940. The 9 per cent increase over 1940 was much less than the 33 per cent increase in the same period in the passengers carried by these vehicles. This difference can be attributed largely to increase in use of buses.

Between 1940 and 1948 the increases in vehicles entering were much less, both numerically and percentage-wise, than in two previous eight-year periods. Half of the 1940-1948 increase in vehicles came from Long Island via Queens, better than one-third from upper Manhattan, Bronx, Westchester and beyond, and about one-fourth from the New Jersey sector. Brooklyn was the only sector that showed a decline.

From each of the sectors, with the exception of Queens-Long Island, and Staten Island, the numerical and percentage increases from 1940 to 1948 were less than the two previous eight-year periods. The largest increase occurred in the eight-year interval between 1924 and 1932.

PASSENGER MOVEMENTS & POPULATION TRENDS

New Jersey—A glance at the accompanying charts shows that the total of passengers entering directly from New Jersey has changed little over the 24-year period, while total population has increased 29 per cent. During the period since 1940, New Jersey has had approximately 44 per cent of the metropolitan region's population growth, but contributed only 6 per cent of the increase in passenger movements to lower Manhattan.

Brooklyn—On the other hand, persons entering from Brooklyn have increased in fairly close proportion to the increased population in that Borough from 1924 to 1948.

TABLE 6.

EIGHT-YEAR CHANGES IN PASSENGER MOVEMENTS INTO LOWER MANHATTAN FROM ALL SECTORS ON A TYPICAL BUSINESS DAY

Mode of Travel	1924-32	1932-40	1940-48
	Numerical Changes		
Rapid Transit	+221,000	+417,000	+220,000
Bus and Trolley	− 33,000	+ 81,000	+105,000
Railroad	− 1,000	− 10,000	+ 77,000
Autos and Trucks	+185,000	+103,000	+112,000
Pedestrians	− 18,000	− 17,000	− 20,000
All modes of travel	+354,000	+574,000	+494,000
	Percentage Changes		
Rapid Transit	+14.4	+23.8	+10.1
Bus and Trolley	−20.6	+63.3	+50.2
Railroad	− 0.5	− 4.6	+37.4
Autos and Trucks	+55.8	+20.0	+18.1
Pedestrians	−17.5	−20.0	−29.4
All modes of travel	+15.1	+21.3	+15.1

TABLE 7.

EIGHT-YEAR CHANGES IN MOTOR VEHICLE MOVEMENTS INTO LOWER MANHATTAN ON A TYPICAL BUSINESS DAY

From:	1924-32	1932-40	1940-48
Upper Manhattan, Bronx, Westchester and beyond	+27,700	+42,100	+11,100
Long Island via Brooklyn	+22,100	+14,900	− 4,700
Long Island via Queens	+28,400	− 6,800	+16,100
New Jersey	+14,500	+ 8,300	+ 8,200
Staten Island	+ 200	− 200	+ 100
All Sectors	+92,900	+58,300	+30,800
		Percentage Change	
Upper Manhattan, Bronx, Westchester and beyond	+ 22.7	+28.2	+ 5.8
Long Island via Brooklyn	+ 47.0	+21.6	− 5.6
Long Island via Queens	+157.8	−14.7	+40.7
New Jersey	+121.8	+31.4	+23.6
Staten Island	+ 5.4	−13.3	+ 7.7
All Sectors	+ 46.4	+19.9	+ 8.8

vehicle movements were from upper Manhattan, Bronx, Westchester and beyond across 61st Street via all Manhattan Avenues; 21 per cent were from Brooklyn and 14 per cent from Queens via the four East River Bridges and one vehicular tunnel, 11 per cent from New Jersey via the two trans-Hudson vehicular tunnels and seven ferries, and less than 1 per cent from Staten Island via the St. George-Whitehall Street Ferry.

Use of Gateways and Arteries

The Miller (West Side) Highway and the Franklin D. Roosevelt Drive (East River Drive) together handled 30 per cent of the 203,000 vehicles from upper Manhattan, Bronx, Westchester and beyond (and from North Jersey), while the 14 Manhattan avenues handled 70 per cent. The two expressways each accommodated three times as many vehicles as were accommodated on a typical avenue.

The Queensboro and Manhattan Bridges handled about 40,000 vehicles apiece—more traffic than any other gateway to lower Manhattan, almost twice as many as the Holland Tunnel. Almost as many vehicles (about 16,000) used the Queens-Midtown Tunnel as the Lincoln Tunnel to enter Manhattan.

EIGHT-YEAR CHANGES IN PASSENGER AND VEHICLE MOVEMENTS (1924-1948)

Trends in Passenger Movements

Similar complete data on the persons and vehicles that entered lower Manhattan (below 61st Street) were compiled for a typical business day in 1940, 1932 and in 1924. Let us now examine the changes that have taken place in the travel into lower Manhattan from that of 8, 16 and 24 years ago. (For allowances for World's Fair traffic in 1940, see Note 1.)

About 494,000 more persons (or 15 per cent) entered lower Manhattan in 1948 than in 1940. This compared with an increase of 574,000 persons or 21 per cent in the previous eight-year span from 1932 to 1940 and an increase of 354,000 persons or 15 per cent in the eight-year period 1924 to 1932.

Trends by Sectors

Between 1940 and 1948 increases in passenger movements from all sectors were noted. The largest increase (23 per cent) was in the movements from upper Manhattan, Bronx, Westchester and beyond. The smallest increase (7 per cent) was from Long Island via Brooklyn.

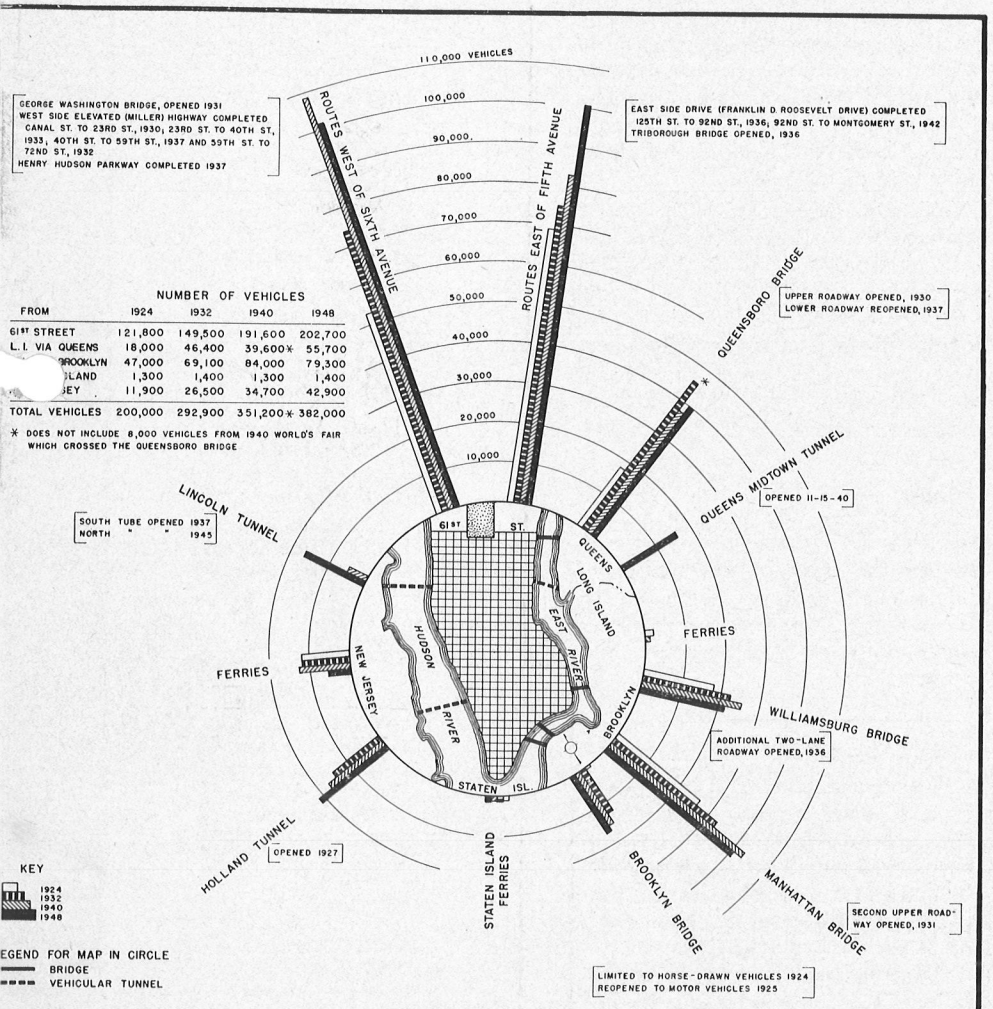
The next largest percentage increase (14 per cent) was from Long Island via Queens. In the eight-year interval between 1940 and 1948, passenger movements from New Jersey increased by 10 per cent in contrast with the decrease in the two previous eight-year periods (1924-1932 and 1932-1940). The numerical increase between 1940 and 1948 was only slightly less than the decrease between 1924 and 1940, thus bringing the 1948 level almost back to the 1924 level.

Trends by Modes of Travel

Between 1940 and 1948, there were 77,000 or 37 per cent more railroad passenger movements into lower Manhattan, although between 1932 and 1940 there was a slight decline.

There were 105,000 or 50 per cent more bus and trolley passenger movements in 1948 than in 1940. About 70,000 of this gain is accounted for by passengers from upper Manhattan and the Bronx where buses replaced outmoded trolley cars and brought increased usage of buses. Another 40,000 of the gain is accounted for by expansion in interstate bus passenger movements from New Jersey via the Lincoln and Holland Tunnels, resulting from more convenient and direct access to Mid-Manhattan.

The expansion in New Jersey bus



NUMBER OF VEHICLES

FROM	1924	1932	1940	1948
61ST STREET	121,800	149,500	191,600	202,700
L.I. VIA QUEENS	18,000	46,400	39,600*	55,700
BROOKLYN	47,000	69,100	84,000	79,300
ISLAND	1,300	1,400	1,300	1,400
SEY	11,900	26,500	34,700	42,900
TOTAL VEHICLES	200,000	292,900	351,200*	382,000

* DOES NOT INCLUDE 8,000 VEHICLES FROM 1940 WORLD'S FAIR WHICH CROSSED THE QUEENSBORO BRIDGE

VEHICLES

ENTERING MANHATTAN SOUTH OF 61ST STREET

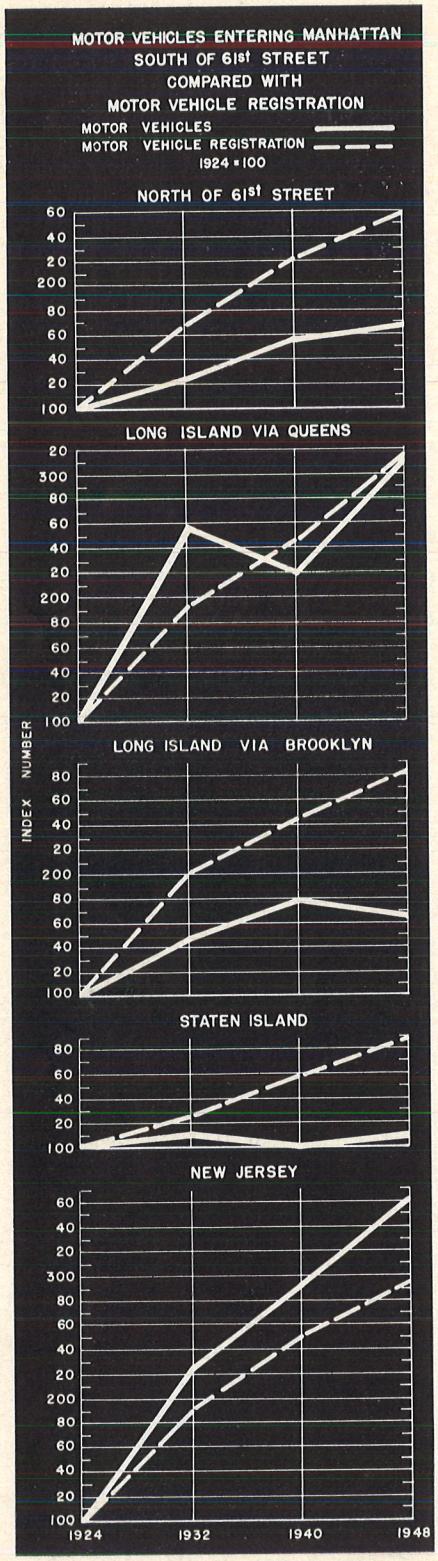
DURING 24 HOURS OF A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

SOURCES OF INFORMATION
PORT OF NEW YORK AUTHORITY, NEW YORK CITY AGENCIES AND DEPARTMENTS, TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY, PRIVATE BUS LINES AND RAILROADS

REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY—AUGUST 1949

VEHICULAR MOVEMENTS & VEHICLE REGISTRATION

The Holland and Lincoln Tunnels were really responsible for opening up traffic between lower Manhattan and the great industrial concentration just across the Hudson River, which were previously accessible to vehicles only by means of ferries. As a result, traffic to and from this sector has produced the grestest rate of gain for the entire 1924-1948 period.



See Note under chart, page 1

From Queens and beyond, on Long Island, motor vehicles entering lower Manhattan increased slightly more rapidly than did motor vehicle registrations in the area during the last eight-year period. The opening of the Queens-Midtown Tunnel and the upper roadway on the Queensboro Bridge has influenced the amount of traffic via Queens.

Motor vehicles entering from Staten Island are relatively few and the trend is uninfluenced by the trend of motor vehicle registration in that Borough.

From the area north of 61st Street the increase in motor vehicles entering lower Manhattan is far below the increase in motor vehicle registration in that area, and the rate of increase of vehicles entering during the 1940-1948 period is substantially less than in the 1932-1940 period, while those entering from New Jersey continue at a high rate of increase.

Vehicular traffic from Long Island via Brooklyn to lower Manhattan has declined slightly during the last eight-year period, due probably to some traffic having been diverted to the Queens Midtown Tunnel. There was no change in capacity of the Brooklyn, Manhattan and Williamsburg Bridges during the 1940-1948 period.

Since 1940, the only change in vehicular access from north of 61st Street has been the opening of the East River Drive, which obviously relates to the increase in number of vehicles entering lower Manhattan on the East Side, while the number of vehicles entering on the West Side decreased.

MORE DATA AVAILABLE

The collection of 1948 data from cooperating agencies, the preparation of all tabulations and much of the anaylsis of data is a contribution of the Planning Bureau of the Port of New York Authority.

Due to limitations of space it has not been possible to include in this Bulletin a considerable amount of detailed data and analyses relative to the movement of people and vehicles into lower Manhattan. The Port of New York Authority has agreed to make these data available to interested persons and agencies, upon written request.

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SUPPLEMENT TO

REGIONAL PLAN ASSOCIATION BULLETIN NO.74

PERSONS AND VEHICLES ENTERING MANHATTAN SOUTH OF 61st STREET 1924, 1932, 1940 AND 1948

THE PORT OF NEW YORK AUTHORITY
DEPARTMENT OF PORT DEVELOPMENT
P L A N N I N G B U R E A U
December 1949

TABLE OF CONTENTS

SUPPLEMENT TO
REGIONAL PLAN ASSOCIATION BULLETIN NO. 74

Introduction

The detailed data and charts presented in this report supplement the Regional Plan Association's Bulletin No. 74, "Persons and Vehicles Entering Manhattan South of 61st Street, 1924-1948". Because of space limitations, it was not possible to include the underlying data in the Regional Plan Bulletin. However, in all cases the data in this supplement, like those in the Bulletin, represent passenger and vehicular movements into lower Manhattan, south of 61st Street, on a typical 24-hour day in each of four years, 1924, 1932, 1940 and 1948.

Map - 1948 Passenger Movements

The map, showing 1948 passenger movements into lower Manhattan from each sector of the New York Metropolitan District, is similar to the map on page 2 of the Bulletin except that this one segregates passenger movements by modes of travel - by rapid transit, by motor vehicles, by railroad and as ferry pedestrians - rather than by gateways.

Chart - Passenger Movements and Population

The chart in this supplement shows the trend of persons entering Manhattan, south of 61st Street, by three modes of travel compared with the trend of population. Again, as in the first chart in the Bulletin, the areas included in determining population trends for each sector are as follows:

Sector	Area Included
North of 61st Street	Manhattan north of 61st Street, Bronx, Westchester and Fairfield Counties
Long Island via Queens	Queens, Nassau and Suffolk Counties
Long Island via Brooklyn	Brooklyn
Staten Island	Staten Island
New Jersey	Bergen, Passaic, Hudson, Essex, Morris, Union, Somerset, Middlesex and Monmouth Counties

Tables 1 - 13

The statistics in Tables 1 - 13 were rounded and adjusted so that the total would equal the sum of its parts.

Sources of 1948 Data

Through the courtesy of a number of New York City agencies and private organizations, passenger and vehicular data for 1948 were assembled by the Planning Bureau of the Port of New York Authority. These cooperating agencies together with their main contributions are listed below:

Public Agencies:

NYC Board of Transportation	Rapid Transit passengers
NYC Police Department	Vehicular movements and passenger loadings on Manhattan avenues
NYC Department of Public Works	Vehicular counts on East River bridges
NYC Department of Marine & Aviation	Vehicular and passenger movements on Staten Island ferries
Triborough Bridge & Tunnel Authority	Vehicular movements and passenger car loadings at Queens Midtown Tunnel
The Port of New York Authority	Vehicular movements and passenger car loadings at the Holland and Lincoln Tunnels; passenger car loadings at the Hudson River ferries:

Privately Operated Bus Companies:

Public Service Transportation Company of New Jersey	Bus loadings at Holland and Lincoln Tunnels
Fifth Avenue Coach Co. Manhattan and Queens Bus Corp. Queensborough Bridge Railway Co. Steinway Omnibus Co.	Bus loadings at Queensborough Bridge

Railroads:

New York, New Haven & Hartford RR New York Central RR Long Island RR Hudson & Manhattan Transit Co. New York, Susquehanna & Western RR Lehigh Valley RR Baltimore & Ohio RR	Railroad passengers
Pennsylvania RR Central RR of New Jersey New York Central-West Shore Div. Delaware, Lackawanna & Western RR Erie RR	Railroad passengers Ferry pedestrians Ferry vehicular movements

Data on Subway Passenger Movements

For the purpose of this study, the Board of Transportation made a special count of all persons that entered lower Manhattan by the New York City rapid transit system. This count was made for the eight hours from 7 am to 3 pm on April 6, 7 and 8, 1948, at all subway stations which serve as gateways to the lower Manhattan area. This City agency also made available for this study, a special tabulation of hourly fare collections, segregated by boroughs and four zones in Manhattan, covering the 24-hour period of March 24, 1948. From these statistics, an estimate of persons that entered lower Manhattan via the New York City subway system for a 24-hour period, was arrived at as follows:

1.	Fare collections outside lower Manhattan, 6 am - 3 pm See Note (a)	2 365 477
2.	A special count of subway riders who entered lower Manhattan, 7 am - 3 pm at all gateways	1 628 425
3.	Persons who did not enter lower Manhattan, 7 am - 3 pm Item (1) - Item (2)	737 052
4.	Persons who did not enter lower Manhattan in the 24 hours See Note (b)	1 474 104
5.	Total 24-hour fare collection outside lower Manhattan	3 761 833
6.	Total that entered lower Manhattan during 24 hours Item (5) - Item (4)	2 287 729

Note (a): Extra hour from 6 am to 7 am was allowed for riders to arrive from station where fare is collected to the gateway into lower Manhattan.

Note (b): On the basis of available statistics, this is assumed to be twice the 8-hour movement, 7 am - 3 pm.

The same type of computation was carried out separately for each borough and then each borough's traffic was apportioned to the different subway lines according to their 8-hour distribution pattern.

Data on Railroad Passenger Movements

The railroads that operate into and out of New York City regularly report to the Port Authority, monthly totals of terminal passengers as well as of local ferry pedestrians. Railroad passenger movements into New York City on a typical business day were obtained by dividing the passengers for the month of April by 1/54 (1/27 x 1/2). Based on previous studies of railroad travel on weekdays, April was usually an average month: 1/27th was a typical business day,

Data on Subway Passenger Movements

For the purpose of this study, the Board of Transportation made a special count of all persons that entered Lower Manhattan by the New York City rapid transit system. This count was made for the eight hours from 7 am to 3 pm on April 6, 7 and 8, 1948, at all subway stations which serve as gateways to the Lower Manhattan area. This City agency also made available for this study, a special tabulation of hourly fare collections, segregated by boroughs and zones in Manhattan, covering the 24-hour period of March 24, 1948. From these statistics, an estimate of persons that entered Lower Manhattan via the New York City subway system for a 24-hour period, was arrived at as follows:

1.	Fare collections outside Lower Manhattan, 6 am - 3 pm See Note (a)	2 365 477
2.	A special count of subway riders who entered Lower Manhattan, 7 am - 3 pm at all gateways	1 628 429
3.	Persons who did not enter Lower Manhattan, 7 am - 3 pm Item (1) - Item (2)	737 048
4.	Persons who did not enter Lower Manhattan in the 24 hours See Note (b)	1 474 104
5.	Total 24-hour fare collection outside Lower Manhattan	3 761 833
6.	Total that entered Lower Manhattan during 24 hours Item (5) - Item (4)	2 287 729

Note (a): Extra hour from 6 am to 7 am was allowed for riders to arrive from station where fare is collected to the gateway into Lower Manhattan.

Note (b): On the basis of available statistics, this is assumed to be twice the 8-hour movement, 7 am - 3 pm.

The same type of computation was carried out separately for each borough and then each borough's traffic was apportioned to the different subway lines according to their 8-hour distribution patterns.

Data on Railroad Passenger Movements

The railroads that operate into and out of New York City regularly report to the Port Authority, monthly totals of terminal passengers as well as of local ferry pedestrians. Railroad passenger movements into New York City on a typical business day were obtained by dividing the passengers for the month of April by 1.54 (1.27 x 1.2). Based on previous studies of railroad travel on weekdays, April was usually an average month: 1/27th was a typical business day,

and the 1/2 converts two-way movements into inbound movements. Therefore, the railroad statistics for April were adjusted to allow for a typical business day and for inbound traffic only.

Hudson and Manhattan Railroad passengers (including local rapid transit as well as steam railroad passengers) on a typical business day were arrived at in the same manner.

Data on Passengers in Motor Vehicles

The number of passengers in autos, buses and trucks were obtained by applying appropriate "loading factors" (number of passengers per auto, bus or truck) to the number of autos or bus or truck movements. The loading factors were obtained from special counts made by several of the cooperating agencies. The Police Department made a sample count of passengers in autos, trucks and franchise buses on Manhattan avenues; private bus lines operating from Queens made available loading factors (determined on July 14, 1948, specifically for the needs of this study); the Public Service Transportation Company clocked buses and bus passengers at the Holland Tunnel on May 5, 1948, and at the Lincoln Tunnel on May 7, 1948. The Triborough Bridge and Tunnel Authority clocked vehicles and passengers in vehicles at the queens-Midtown Tunnel for ten minutes of each hour on July 14, 1948. Port Authority personnel made sample clockings also on July 14, 1948, at all the Hudson River crossings.

Data on Vehicular Movements

The Police Department made a count specifically for this study of vehicular traffic on all Manhattan avenues and on the Miller Highway (West Side Highway) and the Franklin D. Roosevelt Drive (East River Drive). The clockings were made for a twelve-hour period from 7 am to 7 pm on April 19-22, 1948. These counts were then raised to 24-hour totals using the "step-up" factors "borrowed" from hourly counts on the East River bridges.

Vehicular traffic data for the East River bridges were made available through the cooperation of the Department of Public Works which made a special vehicular count on these crossings on July 14, 1948.

The Department of Marine and Aviation makes available to the Port Authority, reports of daily vehicular traffic via the St. George-Whitehall Street Ferry. An average Wednesday in April was deemed to represent a typical business day.

A special clocking was made by the Triborough Bridge and Tunnel Authority on July 14, 1948, of the vehicular movements through the Queens-Midtown Tunnel, segregated by types.

Daily reports are available on the number of vehicles that enter New York from New Jersey via the Port Authority's Holland and Lincoln Tunnels and the several trans-Hudson ferries from Port Authority records and from the data furnished the Port Authority regularly by the ferry operators. An average Wednesday in April was taken to represent a typical business day. However, to determine the breakdown among autos, buses and trucks for trans-Hudson ferry vehicular traffic, a special count was made by the Port Authority at these ferries on April 27-28, 1948.

Source of 1924, 1932 and 1940 Data

The data for the years 1924, 1932 and 1940, were assembled by the Regional Plan Association and previously published in summary form in their "Traffic and Parking Study" (December 1942). The original working papers were made available by the Regional Plan Association to the Port Authority's Planning Bureau and additional estimates were made, where possible, by the Planning Bureau, to show more detailed breakdowns comparable to those available in 1948.

The Planning Bureau also made a further adjustment in the 1940 Regional Plan data to exclude traffic from Queens attributable to the 1940 New York World's Fair season, in order to make the changes between each census year more comparable.

Estimated 1940 Queens Traffic Attributable to World's Fair

Passenger movements into lower Manhattan from Queens appeared to be unusually high in 1940 in relation to the overall trend. A part of this could be attributed to World's Fair travel and estimates were made to eliminate such movements.

In 1939, 6.6% of Queens rapid transit fare collections were at World's Fair stations. This percentage was assumed for 1940 and applied to the number of persons that entered lower Manhattan from Queens by rapid transit to arrive at an estimate of World's Fair travelers on a typical day in 1940, via this mode of travel.

The 1939-1940 abnormal peak in railroad and vehicular passengers was used to estimate the World's Fair passenger traffic into lower Manhattan via the Long Island Railroad and over the Queensborough Bridge, respectively. A "straight line" interpolation of the average daily Long Island Railroad passengers into Pennsylvania Station was made between 1938 and 1941 to estimate normal traffic. The difference between the recorded count and the estimated normal traffic was attributed to the World's Fair.

Vehicular passengers attributable to the World's Fair were estimated in the same manner, using the annual sample day counts made by the Department of Public Works.

The above procedure resulted in an estimate that 60 000 persons that entered lower Manhattan from Queens on a typical day, were attributable to World's Fair travel, segregated according to the following modes of transportation:

Railroad	13 000
Rapid Transit	26 000
Bus	5 000
Auto	16 000
Total	60 000

The passengers in motor vehicles traveled in about 200 buses and 7800 autos.

Limitations in Data

As will be noted from the above discussion, in some instances, the figures recorded are necessarily partial day countsthat had to expanded to 24-hour totals. Since in such cases there were no expansion factors available, such factors were "borrowed" from facilities for which hourly patterns were available. It was, therefore, deemed unwise to apply generally to all other facilities, the seasonal patterns from the few facilities where they were available. Consequently, no seasonal adjustment whatever were made. Most of the counts, however, were made by the cooperating agencies on days considered to be as close to a typical business day as possible.

All Hudson and Manhattan Railroad passengers have been treated as rapid transit passengers although some are in reality railroad passengers who use the Hudson and Manhattan as an extension of their respective railroads. They were all considered as rapid transit passengers on the theory that they actually entered the lower Manhattan area by that mode of travel. On the same principle, some passengers from Long Island or Westchester who travel by railroad to convenient subway stations and then continue to lower Manhattan by subway, are considered to be rapid transit passengers although the major portion of their trip is by railroad.

Passenger and vehicle movements have been indicated as being into lower Manhattan although it is known that movements through lower Manhattan are included. For example, persons living in Brooklyn and working in New Jersey would pass through the lower Manhattan area to get from their origin to destination points. These through movements are, moreover, included twice; once when they represent the movements in from the origin sector in the morning, and again into lower Manhattan from the morning's destination sectors, in the afternoon.

Another portion of passenger movements actually entering lower Manhattan during the course of a 24-hour period, represent the residents of lower Manhattan who work, shop and do business outside of lower Manhattan and who return sometime during the day. They are not distinguished from the non-residents of lower Manhattan who come into the area to work, shop, do business, etc.

The Planning Bureau developed an estimate of these through and resident passenger movements. This estimate resulted in a net passenger movement of about 3 000 000 non-residents of lower Manhattan who entered the area for a definite purpose out of the total of 3 765 000 persons reported in the Regional Plan Association's Bulletin No. 74, as entering lower Manhattan.

Errata in Bulletin No. 74

1. Table 7 in Bulletin 74: Percentage change in Staten Island Vehicular Movements from 1924-32 should read + 15.4, not + 5.4. (See Table 3 in this Supplement)

2. Table 9 in Bulletin 74: Trolley movements for All Sectors total 1200, and none attributable to Staten Island. Staten Island vehicular traffic figures should be shown separately above "All Sectors"; they are included under "All Sectors". (See Table 10 in this Supplement)

Limitations in Data

As will be noted from the above discussion, in some instances, the figures recorded are necessarily partial day counts that had to expanded to 24-hour totals. Since in such cases there were no expansion factors available, such factors were "borrowed" from facilities for which hourly patterns were available. It was, therefore, deemed unwise to apply generally to all other facilities, the seasonal patterns from the few facilities where they were available. Consequently, no seasonal adjustment whatever were made. Most of the counts, however, were made by the cooperating agencies on days considered to be as close to a typical business day as possible.

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Passenger and vehicle movements have been indicated as being into lower Manhattan although it is known that movements through lower Manhattan are included. For example, persons living in Brooklyn and working in New Jersey would pass through the lower Manhattan area to get from their origin to destination points. These through movements are, moreover, included twice: once when they represent trip movements in from the origin sector in the morning, and again into lower Manhattan from the morning's destination sectors, in the afternoon.

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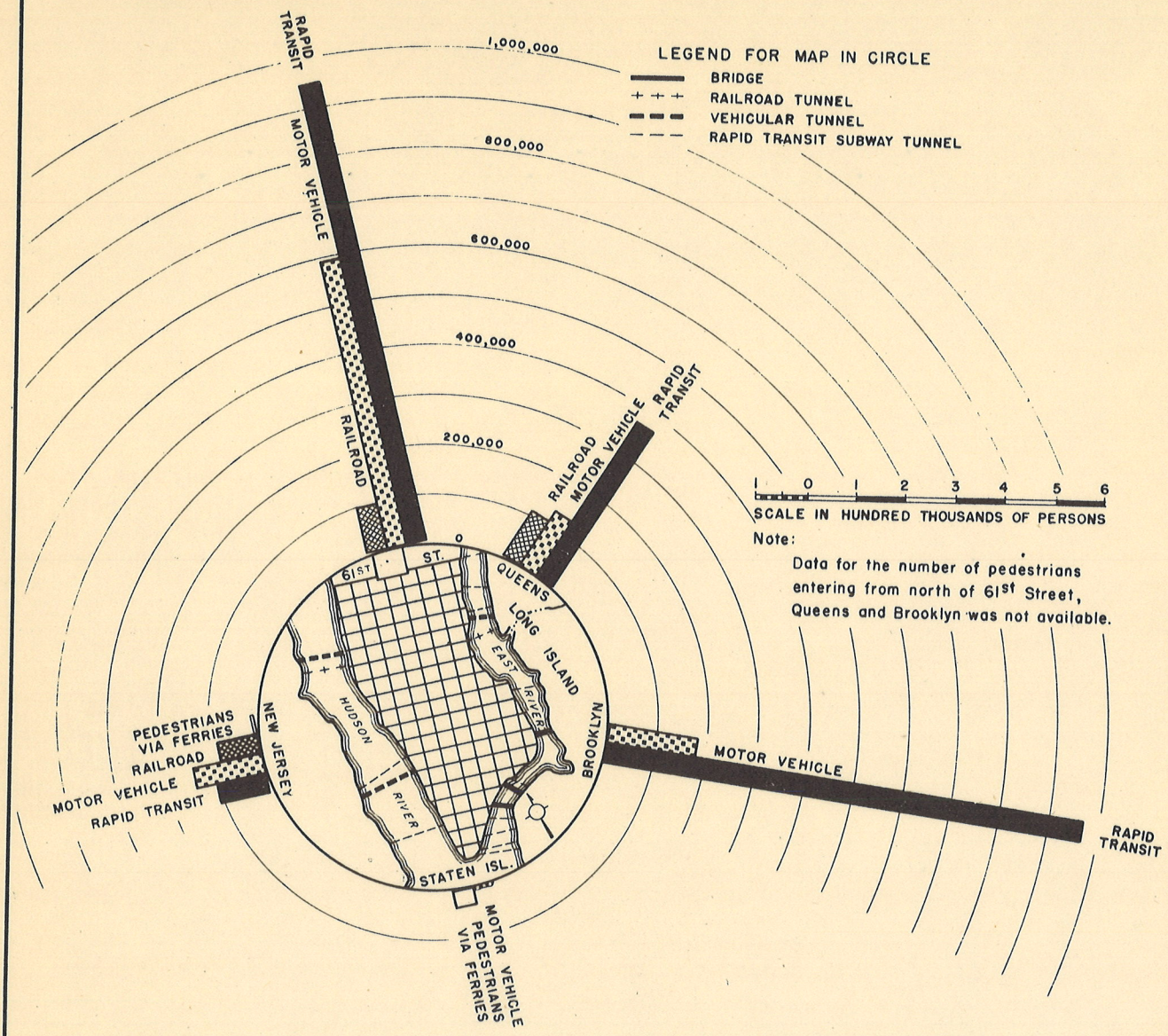

PERSONS ENTERING LOWER MANHATTAN FROM FIVE SECTORS BY MODES OF TRAVEL DURING 24 HOURS OF A TYPICAL BUSINESS DAY 1948

SOURCES OF INFORMATION:
PORT OF NEW YORK AUTHORITY, NEW YORK CITY AGENCIES AND DEPARTMENTS, TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY, PRIVATE BUS LINES AND RAILROADS.

REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY – NOVEMBER 1949

PERSONS ENTERING LOWER MANHATTAN FROM FIVE SECTORS BY MODES OF TRAVEL DURING 24 HOURS OF A TYPICAL BUSINESS DAY 1948

SOURCES OF INFORMATION:
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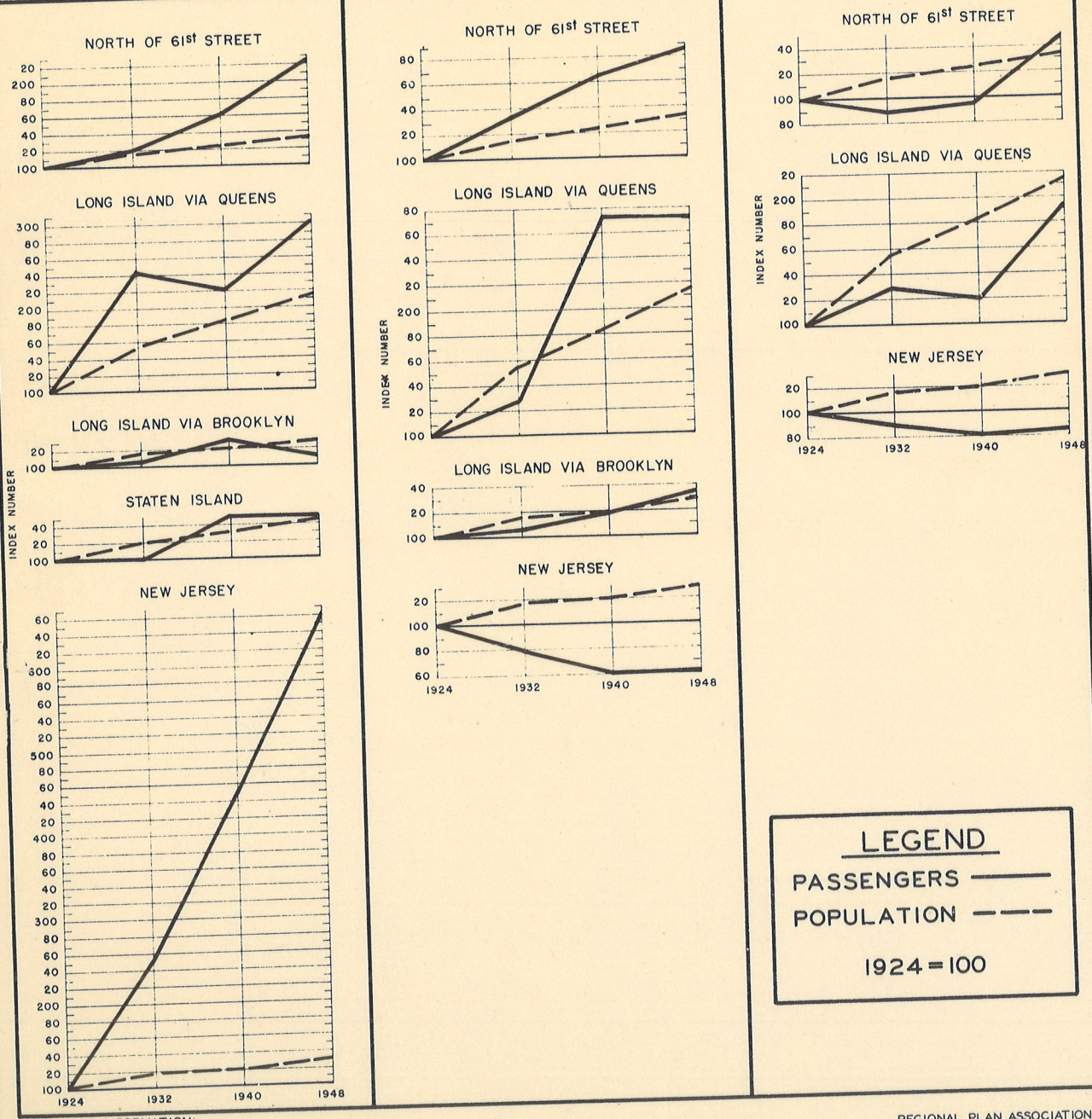
REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY — NOVEMBER 1949

PERSONS ENTERING MANHATTAN SOUTH OF 61ST STREET IN MOTOR VEHICLES, BY RAPID TRANSIT AND BY RAILROAD COMPARED WITH POPULATION 1924-1948

PERSONS IN MOTOR VEHICLES	PASSENGERS BY RAPID TRANSIT	PASSENGERS BY RAILROAD



LEGEND

PASSENGERS ——

POPULATION - - -

1924 = 100

SOURCES OF INFORMATION:
PORT OF NEW YORK AUTHORITY, NEW YORK CITY AGENCIES AND DEPARTMENTS, TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY, PRIVATE BUS LINES AND RAILROADS.

REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY - NOVEMBER 1949

PERSONS ENTERING MANHATTAN SOUTH OF 61ST STREET IN MOTOR VEHICLES, BY RAPID TRANSIT AND BY RAILROAD COMPARED WITH POPULATION

1924-1948

PERSONS IN MOTOR VEHICLES	PASSENGERS BY RAPID TRANSIT	PASSENGERS BY RAILROAD

LEGEND

PASSENGERS

POPULATION

1924 = 100

REGIONAL PLAN ASSOCIATION, INC.
NEW YORK CITY - NOVEMBER 1949

SOURCES OF INFORMATION:
PORT OF NEW YORK AUTHORITY, NEW YORK CITY AGENCIES AND DEPARTMENTS, TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY, PRIVATE BUS LINES AND RAILROADS

Table 1

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
FROM EACH SECTOR OF METROPOLITAN NEW YORK
ON A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

From:	1924	1932	1940	1948
			(Persons)	
The North				
Upper Manhattan and Beyond	832 000	1 046 000	1 320 000	1 628 000
The East				
Brooklyn	899 000	946 000	1 074 000	1 151 000
Queens and Long Island	237 000	355 000	538 000	612 000
The West				
New Jersey	335 000	309 000	302 000	333 000
The South				
Staten Island	40 000	41 000	37 000	41 000
All Sectors	2 343 000	2 697 000	3 271 000	3 765 000
			(Percentages)	
The North				
Upper Manhattan and Beyond	35.5	38.8	40.4	43.3
The East				
Brooklyn	38.4	35.1	32.8	30.6
Queens and Long Island	10.1	13.1	16.5	16.2
The West				
New Jersey	14.3	11.5	9.2	8.8
The South				
Staten Island	1.7	1.5	1.1	1.1
All Sectors	100.0	100.0	100.0	100.0
	1924-32	1932-40	1940-48	
		(Numerical Changes)		
The North				
Upper Manhattan and Beyond	+ 214 000	+ 274 000	+ 308 000	
The East				
Brooklyn	+ 47 000	+ 128 000	+ 77 000	
Queens and Long Island	+ 118 000	+ 183 000	+ 74 000	
The West				
New Jersey	- 26 000	- 7 000	+ 31 000	
The South				
Staten Island	+ 1 000	- 4 000	+ 4 000	
All Sectors	+ 354 000	+ 574 000	+ 494 000	
		(Percentage Changes)		
The North				
Upper Manhattan and Beyond	+ 25.7	+ 26.2	+ 23.3	
The East				
Brooklyn	+ 5.2	+ 13.5	+ 7.2	
Queens and Long Island	+ 49.8	+ 51.5	+ 13.8	
The West				
New Jersey	- 7.8	- 2.3	+ 10.3	
The South				
Staten Island	+ 2.5	- 9.8	+ 10.8	
All Sectors	+ 15.1	+ 21.3	+ 15.1	

Table 1

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
FROM EACH SECTOR OF METROPOLITAN NEW YORK
ON A TYPICAL BUSINESS DAY IN 1924,1932,1940 AND 1948

From:	1924	1932	1940	1948
			(Persons)	
The North				
Upper Manhattan and Beyond	832 000	1 046 000	1 320 000	1 628 000
The East				
Brooklyn	899 000	946 000	1 074 000	1 151 000
Queens and Long Island	237 000	355 000	538 000	612 000
The West				
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Staten Island	40 000	41 000	37 000	41 000
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			(Percentages)	
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Upper Manhattan and Beyond	35.5	38.8	40.4	43.3
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The West				
New Jersey	14.3	11.5	9.2	8.8
The South				
Staten Island	1.7	1.5	1.1	1.1
All Sectors	100.0	100.0	100.0	100.0
	1924-32	1932-40	1940-48	
			(Numerical Changes)	
The North				
Upper Manhattan and Beyond	+ 214 000	+ 274 000	+ 308 000	
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Queens and Long Island	+ 118 000	+ 183 000	+ 74 000	
The West				
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The South				
Staten Island	+ 1 000	- 4 000	+ 4 000	
All Sectors	+ 354 000	+ 574 000	+ 494 000	
			(Percentage Changes)	
The North				
Upper Manhattan and Beyond	+ 25.7	+ 26.2	+ 23.3	
The East				
Brooklyn	+ 5.2	+ 13.5	+ 7.2	
Queens and Long Island	+ 49.8	+ 51.5	+ 13.8	
The West				
New Jersey	- 7.8	- 2.3	+ 10.3	
The South				
Staten Island	+ 2.5	- 9.8	+ 10.8	
All Sectors	+ 15.1	+ 21.3	+ 15.1	

Table I

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
FROM EACH SECTOR OF METROPOLITAN NEW YORK
ON A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

From:	1924	1932	1940	1948
	(Persons)			
The North				
Upper Manhattan and Beyond	832 000	1 046 000	1 320 000	1 628 000
The East				
Brooklyn	899 000	946 000	1 074 000	1 151 000
Queens and Long Island	237 000	355 000	538 000	612 000
The West				
New Jersey	335 000	309 000	302 000	333 000
The South				
Staten Island	40 000	42 000	37 000	42 000
All Sectors	2 343 000	2 697 000	3 271 000	3 765 000
	(Percentages)			
The North				
Upper Manhattan and Beyond	35.5	38.8	40.4	43.3
The East				
Brooklyn	38.4	35.1	32.8	30.6
Queens and Long Island	10.1	13.1	16.5	16.2
The West				
New Jersey	14.3	11.5	9.2	8.8
The South				
Staten Island	1.7	1.5	1.1	1.1
All Sectors	100.0	100.0	100.0	100.0

	1924-32	1932-40	1940-48
	(Numerical Changes)		
The North			
Upper Manhattan and Beyond	+ 214 000	+ 274 000	+ 308 000
The East			
Brooklyn	+ 47 000	+ 128 000	+ 77 000
Queens and Long Island	+ 118 000	+ 183 000	+ 74 000
The West			
New Jersey	- 26 000	- 7 000	+ 31 000
The South			
Staten Island	+ 1 000	- 4 000	+ 4 000
All Sectors	+ 354 000	+ 574 000	+ 494 000
	(Percentage Changes)		
The North			
Upper Manhattan and Beyond	+ 25.7	+ 26.2	+ 23.3
The East			
Brooklyn	+ 5.2	+ 13.5	+ 7.2
Queens and Long Island	+ 49.8	+ 51.5	+ 13.8
The West			
New Jersey	- 7.8	- 2.3	+ 10.3
The South			
Staten Island	+ 2.5	- 9.8	+ 10.8
All Sectors	+ 15.1	+ 21.3	+ 15.1

Table 2

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
FROM ALL SECTORS VIA EACH MODE OF TRAVEL
ON A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

Via	1924	1932	1940	1948
		(Persons)		
Rapid Transit	1 531 000	1 752 000	2 169 000	2 389 000
Autos	249 000	430 000	503 000	626 000
Buses and Trolleys	161 000	128 000	209 000	314 000
Railroads	217 000	216 000	206 000	283 000
Trucks	82 000	86 000	116 000	105 000
Ferries (a)	103 000	85 000	68 000	48 000
All Modes	2 343 000	2 697 000	3 271 000	3 765 000
		(Percentages)		
Rapid Transit	65.3	65.0	66.3	63.5
Autos	10.6	15.9	15.4	16.6
Buses and Trolleys	6.9	4.7	6.4	8.3
Railroads	9.3	8.0	6.3	7.5
Trucks	3.5	3.2	3.5	2.8
Ferries (a)	4.4	3.2	2.1	1.3
All Modes	100.0	100.0	100.0	100.0
	1924-32	1932-40		1940-48
		(Numerical Changes)		
Rapid Transit	+ 221 000	+ 417 000		+ 220 000
Autos	+ 181 000	+ 73 000		+ 123 000
Buses and Trolleys	- 33 000	+ 81 000		+ 105 000
Railroads	- 1 000	- 10 000		+ 77 000
Trucks	+ 4 000	+ 30 000		- 11 000
Ferries (a)	- 18 000	- 17 000		- 20 000
All Modes	+ 354 000	+ 574 000		+ 494 000
		(Percentage Changes)		
Rapid Transit	+ 14.4	+ 23.8		+ 10.1
Autos	+ 72.7	+ 17.0		+ 24.5
Buses and Trolleys	- 20.6	+ 63.3		+ 50.2
Railroads	- 0.5	- 4.6		+ 37.4
Trucks	+ 4.9	+ 34.9		- 9.5
Ferries (a)	- 17.5	- 20.0		- 29.4
All Modes	+ 15.1	+ 21.3		+ 15.1

(a) As pedestrians or non-railroad passengers.

Table 3

MOTOR VEHICLE MOVEMENTS INTO LOWER MANHATTAN
FROM FOUR SECTORS OF METROPOLITAN NEW YORK
ON A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

From:	1924	1932	1940	1948
		(Vehicles)		
The North				
Upper Manhattan and Beyond	121 800	149 500	191 600	202 700
The East				
Brooklyn	47 000	69 100	84 000	79 300
Queens and Long Island	18 000	46 400	39 600	55 700
The West				
New Jersey	11 900	26 400	34 700	42 900
The South				
Staten Island	1 300	1 500	1 300	1 400
All Sectors	200 000	292 900	351 200	382 000
		(Percentages)		
The North				
Upper Manhattan and Beyond	60.9	51.1	54.5	53.1
The East				
Brooklyn	23.5	23.6	23.9	20.7
Queens and Long Island	9.0	15.8	11.3	14.6
The West				
New Jersey	5.9	9.0	9.9	11.2
The South				
Staten Island	0.7	0.5	0.4	0.4
All Sectors	100.0	100.0	100.0	100.0
	1924-32	1932-40		1940-48
		(Numerical Changes)		
The North				
Upper Manhattan and Beyond	+ 27 700	+ 42 100		+ 11 100
The East				
Brooklyn	+ 22 100	+ 14 900		- 4 700
Queens and Long Island	+ 28 400	- 6 800		+ 16 100
The West				
New Jersey	+ 14 500	+ 8 300		+ 8 200
The South				
Staten Island	+ 200	- 200		+ 100
All Sectors	+ 92 900	+ 58 300		+ 30 800
		(Percentage Changes)		
The North				
Upper Manhattan and Beyond	+ 22.7	+ 28.2		+ 5.8
The East				
Brooklyn	+ 47.0	+ 21.6		- 5.6
Queens and Long Island	+ 157.8	- 14.7		+ 40.7
The West				
New Jersey	+ 121.8	+ 31.4		+ 23.6
The South				
Staten Island	+ 15.4	- 13.3		+ 7.7
All Sectors	+ 46.4	+ 19.9		+ 8.8

Table 4

VEHICLE MOVEMENTS INTO LOWER MANHATTAN
FROM ALL SECTORS OF METROPOLITAN NEW YORK
ON A TYPICAL BUSINESS DAY IN 1924,1932,1940 AND 1948

	1924	1932	1940	1948
		(Vehicles)		
Autos	149 000	240 300	275 100	304 300
Buses	-	2 300	5 800	10 000
Trucks	51 000	50 300	70 300	67 700
All Motor Vehicles	200 000	292 900	351 200	382 000
Trolleys	7 300	4 000	2 900	1 200
		(Percentages)		
Autos	74.5	82.0	78.3	79.7
Buses	-	0.8	1.7	2.6
Trucks	25.5	17.2	20.0	17.7
All Motor Vehicles	100.0	100.0	100.0	100.0

	1924-32	1932-40	1940-48
		(Numerical Changes)	
Autos	+ 91 300	+ 34 800	+ 29 200
Buses	+ 2 300	+ 3 500	+ 4 200
Trucks	- 700	+ 20 000	- 2 600
All Motor Vehicles	+ 92 900	+ 58 300	+ 30 800
Trolleys	- 3 300	- 1 100	- 1 700
		(Percentage Changes)	
Autos	+ 61.3	+ 14.5	+ 10.6
Buses	-	+ 152.2	+ 72.4
Trucks	- 1.4	+ 39.8	- 3.7
All Motor Vehicles	+ 46.4	+ 19.9	+ 8.8
Trolleys	- 45.2	- 27.5	- 58.6

Table 5

PERSONS IN MOTOR VEHICLES WHO ENTERED LOWER MANHATTAN FROM ALL SECTORS ON A TYPICAL BUSINESS DAY IN 1924, 1932, 1940 AND 1948

	1924	1932	1940	1948
		Auto		
Persons	249 000	430 000	503 000	626 000
Vehicles	149 000	240 300	275 100	304 300
P/V	1.7	1.8	1.8	2.1
		Bus		
Persons	a	40 000	150 000	290 000
Vehicles	a	2 300	5 800	10 000
P/V		17.4	25.9	29.0
		Truck		
Persons	82 000	86 000	116 000	105 000
Vehicles	51 000	50 300	70 300	67 700
P/V	1.6	1.7	1.7	1.6
		All Motor Vehicles		
Persons	331 000	556 000	769 000	1 021 000
Vehicles	200 000	292 900	351 200	382 000
P/V	1.7	1.9	2.2	2.7

a - Negligible

Table 6

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1948

a - Negligible

From	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Rapid Transit	Via Railroads	As Pedestrians	Via All Modes
Upper Manhattan and Beyond via:									
Miller Highway	79 000			79 000					79 000
7 Avenues 11th-6th	105 000	78 000	13 000	196 000		590 000		a	786 000
7 Avenues 5th-1st	125 000	124 000	17 000	266 000		356 000	93 000	a	715 000
F.D.Roosevelt Drive	48 000			48 000					48 000
Total	357 000	202 000	30 000	589 000		946 000	93 000	a	1 628 000
Long Island Brooklyn via:									
Manhattan Bridge	64 000	1 000	18 000	83 000		248 000		a	331 000
Williamsburg "	18 000		25 000	43 000	12 000	118 000		a	173 000
Brooklyn "	34 000	a		34 000	9 000			a	43 000
Rapid Transit Tunnels						604 000			604 000
Total	116 000	1 000	43 000	160 000	21 000	970 000		a	1 151 000
Queens via:									
Queensborough Bridge	65 000	23 000	12 000	100 000	3 000				103 000
Queens-Midtown Tunnel	27 000	a	3 000	30 000					30 000
Rapid Transit & RR Tunnels						372 000	107 000		479 000
Total	92 000	23 000	15 000	130 000	3 000	372 000	107 000		612 000
New Jersey via:									
Holland Tunnel	33 000	7 000	8 000	48 000					48 000
Lincoln Tunnel	21 000	57 000	5 000	83 000					83 000
7 Ferries	5 000		3 000	8 000			41 000	10 000	59 000
Railroad Tunnels						101 000	42 000		143 000
Total	59 000	64 000	16 000	139 000		101 000	83 000	10 000	333 000
Staten Island via:									
St.George-Whitehall St. Ferry	2 000		1 000	3 000				38 000	41 000
ALL SECTORS	626 000	290 000	105 000	1 021 000	24 000	2 389 000	283 000	48 000	3 765 000

Table 6

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1948

a - Negligible

From	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Tunnels	Via Bridges	Via Ferries	Via Railroads	Via Rapid Transit	Via Subways	Via All Modes
Upper Manhattan and Bronx via:												
Holland Tunnel	79 000	1 000	30 000	110 000	3 000	113 000						113 000
Lincoln Tunnel	105 000	2 000	12 000	119 000	4 000	123 000						123 000
Queensboro Bridge	125 000	4 000	17 000	146 000	5 000		151 000					151 000
Manhattan Bridge	78 000	1 000	12 000	91 000	3 000		94 000					94 000
Williamsburg Bridge	121 000	4 000	17 000	142 000	5 000		147 000					147 000
Brooklyn Bridge	202 000	7 000	30 000	239 000	8 000		247 000					247 000
Rapid Transit Tunnels										243 000		243 000
Total	708 000	19 000	118 000	845 000	28 000	236 000	492 000			243 000		971 000
Queens via:												
Queensborough Bridge	65 000	2 000	10 000	77 000	2 000		79 000					79 000
Queens-Midtown Tunnel	27 000	1 000	4 000	32 000	1 000	33 000						33 000
Rapid Transit & BT Tunnels										55 000		55 000
Total	92 000	3 000	14 000	109 000	3 000	33 000	79 000			55 000		167 000
Long Island via:												
Brooklyn via:												
Manhattan Bridge	64 000	2 000	10 000	76 000	2 000		78 000					78 000
Williamsburg "	34 000	1 000	5 000	40 000	1 000		41 000					41 000
Brooklyn "	74 000	2 000	11 000	87 000	3 000		90 000					90 000
Rapid Transit Tunnels										85 000		85 000
Total	172 000	5 000	26 000	203 000	6 000		209 000			85 000		294 000
New Jersey via:												
Holland Tunnel	105 000	3 000	16 000	124 000	4 000	128 000						128 000
Lincoln Tunnel	125 000	4 000	19 000	148 000	5 000	153 000						153 000
Ferries	48 000	1 000	7 000	56 000	2 000			58 000				58 000
Railroad Tunnels									102 000			102 000
Total	278 000	8 000	42 000	328 000	11 000	281 000		58 000	102 000			441 000
Staten Island via:												
St. George-Whitehall								14 000				14 000
St. Ferry								58 000				58 000
All Routes	1 250 000	36 000	210 000	1 496 000	50 000	550 000	1 020 000	130 000	102 000	383 000		2 285 000

Table 7

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1940

	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Rapid Transit	Via Railroad	As Pedestrians	Total
From:									
Upper Manhattan and Beyond via:									
Miller Highway					20 000	473 000			
7 Aves. 11-6th					7 000	367 000	60 000		
7 Aves. 5-1st									
F.D.Roosevelt Drive									
Total	235 000	106 000	52 000	393 000	27 000	840 000	60 000	a	1 320 000
Long Island -									
Brooklyn via:									
Manhattan Bridge	64 000	2 000	20 000	86 000		260 000		1 000	347 000
Williamsburg Bridge	44 000		15 000	59 000	17 000	106 000		1 000	183 000
Brooklyn Bridge	37 000		1 000	38 000	13 000	4 000		1 000	56 000
Ferries				a				1 000	1 000
Rapid Transit Tunnels						487 000			487 000
Total	145 000	2 000	36 000	183 000	30 000	857 000	-	4 000	1 074 000
Queens via:									
Queensborough Bridge	63 000	18 000	14 000	95 000	2 000	43 000		2 000	142 000
Queens-Midtown Tunnel									
Rapid Transit & RR Tunnels						330 000	66 000		396 000
Total	63 000	18 000	14 000	95 000	2 000	373 000	66 000	2 000	538 000
New Jersey via:									
Holland Tunnel	34 000	6 000	5 000	45 000					45 000
Lincoln Tunnel	8 000	18 000	1 000	27 000					27 000
12 Ferries	16 000	-	7 000	23 000			57 000	28 000	108 000
Railroad Tunnels						99 000	23 000		122 000
Total	58 000	24 000	13 000	95 000	-	99 000	80 000	28 000	302 000
Staten Island via:									
St.George-Whitehall St. Ferry	2 000	-	1 000	3 000	-			34 000	37 000
ALL SECTORS	503 000	150 000	116 000	769 000	59 000	2 169 000	206 000	68 000	3 271 000

a - Negligible

Table 7

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1940

	In Autos	In Buses	In Trucks	In Motor Vehicles	In Rapid Transit Trains	Via Railroad	As Pedestrians	Total
From:								
Upper Manhattan and Beyond via:								
Miller Highway				20 000	473 000			
7 Aves. 11-6th				7 000	367 000	60 000		
7 Aves. 5-1st								
F.D.Roosevelt Drive								
Total	239 000	106 000	52 000	27 000	840 000	60 000	a	1 320 000
Long Island - Brooklyn via:								
Manhattan Bridge	64 000	2 000	20 000	86 000	260 000		1 000	347 000
Williamsburg Bridge	44 000		15 000	59 000	106 000	17 000	1 000	183 000
Brooklyn Bridge	37 000		4 000	38 000	13 000	6 000	1 000	56 000
Ferries					a		1 000	1 000
Rapid Transit Tunnels				457 000				457 000
Total	145 000	2 000	36 000	183 000	30 000	-	4 000	1 074 000
Queens via:								
Queensborough Bridge	63 000	18 000	14 000	95 000	2 000	43 000	2 000	142 000
Queens-Midtown Tunnel								
Rapid Transit & Bk Tunnels						330 000	66 000	396 000
Total	63 000	18 000	14 000	95 000	2 000	373 000	68 000	538 000
New Jersey via:								
Holland Tunnel	34 000	6 000	5 000	45 000				45 000
Lincoln Tunnel	8 000	18 000	1 000	27 000				27 000
Ferries	16 000	-	7 000	23 000		57 000	28 000	108 000
Railroad Tunnels						23 000		23 000
Total	58 000	24 000	13 000	95 000	-	80 000	28 000	203 000
Staten Island via:								
St.George-Whitehall St. Ferry	2 000	-	1 000	3 000	-		34 000	37 000
All Sections	503 000	150 000	116 000	769 000	59 000	1 469 000	206 000	68 000	3 271 000

a - Negligible

Table 8

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1932

	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Rapid Transit	Via Railroad	As Pedestrians	Total
From:									
Upper Manhattan and Beyond via:									
Miller Highway	11 000			11 000					11 000
7 Aves. 11-6th	93 000	16 000	13 000	122 000					
7 Aves. 5-1st	107 000	17 000	12 000	136 000			56 000		
F.D. Roosevelt Drive									
Total	211 000	33 000	25 000	269 000	41 000	680 000	56 000	a	1 046 000
Long Island - Brooklyn via:									
Manhattan Bridge	50 000		17 000	67 000		205 000		1 000	273 000
Williamsburg Bridge	26 000		12 000	38 000	24 000	125 000		1 000	188 000
Brooklyn Bridge	23 000		1 000	24 000	16 000	24 000		1 000	65 000
Ferries	2 000		1 000	3 000				3 000	6 000
Rapid Transit Tunnels						414 000			414 000
Total	101 000	-	31 000	132 000	40 000	768 000	-	6 000	946 000
Queens via:									
Queensborough Bridge	86 000		14 000	100 000	7 000	37 000		1 000	145 000
Queens-Midtown Tunnel Rapid Transit & RR Tunnels						139 000	71 000		210 000
Total	86 000	-	14 000	100 000	7 000	176 000	71 000	1 000	355 000
New Jersey via:									
Holland Tunnel	17 000	6 000	6 000	29 000					29 000
Lincoln Tunnel	14 000	1 000	9 000	24 000			78 000	39 000	141 000
12 Ferries							11 000		139 000
Railroad Tunnels									
Total	31 000	7 000	15 000	53 000	-	128 000	89 000	39 000	309 000
Staten Island via:									
St.George-Whitehall St. Ferry	1 000		1 000	2 000				39 000	41 000
ALL SECTORS	430 000	40 000	86 000	556 000	88 000	1 752 000	216 000	85 000	2 697 000

a - Negligible

Table 8

PASSENGER DIVERSIONS DUE TO TOLL INCREASES
ON A TYPICAL BUSINESS DAY IN 1952

From	Autos	Trucks	Buses	Total	To	Autos	Trucks	Buses	Total
Upper Manhattan and Bronx via:					Lower Manhattan via:				
Beyond Whitestone Bridge	000	000	000	000	Queensboro Bridge	000	000	000	000
Whitestone Bridge	000	000	000	000	Manhattan Bridge	000	000	000	000
Throgs Neck Bridge	000	000	000	000	Brooklyn Bridge	000	000	000	000
Bronx-Whitestone Bridge	000	000	000	000	Williamsburg Bridge	000	000	000	000
Total	000	000	000	000	Total	000	000	000	000
Queens via:					Brooklyn via:				
Queens-Midtown Tunnel	000	000	000	000	Brooklyn-Battery Tunnel	000	000	000	000
Hall of Fame	000	000	000	000	Gowanus Parkway	000	000	000	000
Long Island -					Prospect Expressway	000	000	000	000
Grand Central Parkway	000	000	000	000	Belt Parkway	000	000	000	000
Northern State Parkway	000	000	000	000	Shore Parkway	000	000	000	000
Total	000	000	000	000	Total	000	000	000	000
New Jersey via:									
Holland Tunnel	000	000	000	000					
Lincoln Tunnel	000	000	000	000					
Total	000	000	000	000					
Staten Island via:									
Staten Island-Bayonne Bridge	000	000	000	000					
Total	000	000	000	000					

Table 9

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1924

	In Autos	In Buses	In Trucks	In Motor Vehicles	In Trolleys	Via Rapid Transit	Via Railroad	As Pedestrians	Total
From:									
Upper Manhattan and Beyond via:									
Miller Highway									
7 Aves. 11-6th									
7 Aves. 5-1st									
F.D. Roosevelt Drive									
Total	156 000	-	38 000	194 000	67 000	508 000	63 000	a	832 000
Long Island -									
Brooklyn via:									
Manhattan Bridge	33 000		14 000	47 000	13 000	186 000		a	246 000
Williamsburg Bridge	18 000		10 000	28 000	39 000	184 000		1 000	252 000
Brooklyn Bridge	a		1 000	1 000	32 000	37 000		1 000	71 000
Ferries	2 000		2 000	4 000				9 000	13 000
Rapid Transit Tunnels						317 000			317 000
Total	53 000	-	27 000	80 000	84 000	724 000	-	11 000	899 000
Queens Via:									
Queensborough Bridge	23 000		11 000	34 000	10 000	34 000		1 000	79 000
Queens-Midtown Tunnel Rapid Transit & RR Tunnels						103 000	55 000		158 000
Total	23 000	-	11 000	34 000	10 000	137 000	55 000	1 000	237 000
New Jersey via:									
Holland Tunnel									
Lincoln Tunnel									
12 Ferries	16 000	a	5 000	21 000			81 000	53 000	155 000
Railroad Tunnels						162 000	18 000		180 000
Total	16 000	a	5 000	21 000	-	162 000	99 000	53 000	335 000
Staten Island via:									
St. George-Whitehall St. Ferry	1 000		1 000	2 000				38 000	40 000
ALL SECTORS	249 000	a	82 000	331 000	161 000	1 531 000	217 000	103 000	2 343 000

a - Negligible

Table 9

PASSENGER MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1994

From:	Autos	Buses	Trucks	Vehicles	Trains	Ferries	Pedestrians	Total
Upper Manhattan and Bronx via:								
Holland Tunnel	25,000	-	2,000	27,000	-	-	-	27,000
Lincoln Tunnel	35,000	-	3,000	38,000	-	-	-	38,000
Queens-Midtown Tunnel	15,000	-	1,000	16,000	-	-	-	16,000
Brooklyn Bridge	30,000	-	2,000	32,000	-	-	-	32,000
Manhattan Bridge	40,000	-	3,000	43,000	-	-	-	43,000
Williamsburg Bridge	20,000	-	1,000	21,000	-	-	-	21,000
Queensboro Bridge	30,000	-	2,000	32,000	-	-	-	32,000
Manhattan Bridge	40,000	-	3,000	43,000	-	-	-	43,000
Brooklyn Bridge	30,000	-	2,000	32,000	-	-	-	32,000
Total	265,000	-	19,000	284,000	-	-	-	284,000
Lower Manhattan via:								
Brooklyn Bridge	30,000	-	2,000	32,000	80,000	4,000	84,000	200,000
Manhattan Bridge	40,000	-	3,000	43,000	100,000	5,000	105,000	253,000
Williamsburg Bridge	20,000	-	1,000	21,000	50,000	2,500	52,500	126,000
Queensboro Bridge	30,000	-	2,000	32,000	75,000	3,750	78,750	189,000
Total	120,000	-	8,000	128,000	305,000	15,250	320,250	768,000
Staten Island via:								
Staten Island Ferry	-	-	-	-	-	15,000	15,000	30,000
Total	-	-	-	-	-	15,000	15,000	30,000
New Jersey via:								
Holland Tunnel	25,000	-	2,000	27,000	-	-	-	27,000
Lincoln Tunnel	35,000	-	3,000	38,000	-	-	-	38,000
Queens-Midtown Tunnel	15,000	-	1,000	16,000	-	-	-	16,000
Total	75,000	-	6,000	81,000	-	-	-	81,000
All sources	460,000	-	33,000	493,000	305,000	30,250	335,250	828,250

* - Negligible

Table 10
MOTOR VEHICLE MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1948

From	Autos	Buses	Trucks	Motor Vehicles	Trolleys
UPPER MANHATTAN AND BEYOND VIA:					
Miller Highway	38 200			38 200	
7 Avenues 11th-6th	50 200	2 600	10 700	63 500	
7 Avenues 5th-1st	59 900	3 900	13 900	77 700	
F.D.Roosevelt Drive	23 300			23 300	
Total	171 600	6 500	24 600	202 700	
LONG ISLAND					
BROOKLYN VIA:					
Manhattan Bridge	32 000	100	8 800	40 900	
Williamsburg Bridge	9 000		12 500	21 500	600
Brooklyn Bridge	16 900	a		16 900	500
Total	57 900	100	21 300	79 300	1 100
QUEENS VIA:					
Queensborough Bridge	32 400	900	6 600	39 900	100
Queens-Midtown Tunnel	14 100	a	1 700	15 800	
Total	46 500	900	8 300	55 700	100
NEW JERSEY VIA:					
Holland Tunnel	14 000	300	6 700	21 000	
Lincoln Tunnel	10 200	2 200	3 900	16 300	
7 Ferries	3 000		2 600	5 600	
Total	27 200	2 500	13 200	42 900	
STATEN ISLAND VIA:					
St.George-Whitehall Street Ferry	1 100		300	1 400	
ALL SECTORS	304 300	10 000	67 700	382 000	1 200

a - Negligible

Table 11
VEHICLE MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1940

From	Autos	Buses	Trucks	Motor Vehicles	Trolleys
UPPER MANHATTAN AND BEYOND VIA:					
Miller Highway, 7 Avenues 11th-6th				109 000	600
7 Avenues 5th-1st, F.D. Roosevelt Drive				82 600	300
Total	150 600	3 600	37 400	191 600	900
LONG ISLAND					
BROOKLYN VIA:					
Manhattan Bridge	32 400	200	10 400	43 000	-
Williamsburg Bridge	19 100		6 500	25 600	800
Brooklyn Bridge	15 000		400	15 400	1 100
Ferry				a	
Total	66 500	200	17 300	84 000	1 900
QUEENS VIA:					
Queensborough Bridge	31 900	600	7 100	39 600	100
Queens-Midtown Tunnel					
Total	31 900	600	7 100	39 600	100
NEW JERSEY VIA:					
Holland Tunnel	13 500	400	3 200	17 100	
Lincoln Tunnel	3 400	900	700	5 000	
12 Ferries	8 300	100	4 200	12 600	
Total	25 200	1 400	8 100	34 700	-
STATEN ISLAND VIA:					
St.George-Whitehall St. Ferry	900		400	1 300	-
ALL SECTORS	275 100	5 800	70 300	351 200	2 900

a - Negligible

Table 13
VEHICLE MOVEMENTS INTO LOWER MANHATTAN
ON A TYPICAL BUSINESS DAY IN 1924

From	Autos	Buses	Trucks	Motor Vehicles	Trolleys
UPPER MANHATTAN AND BEYOND VIA:					
Miller Highway				53 100	
7 Avenues 11th-6th					
7 Avenues 5th-1st				68 700	
F.D. Roosevelt Drive					
Total	97 500	-	24 300	121 800	2 700
LONG ISLAND					
BROOKLYN VIA:					
Manhattan Bridge	18 400		7 800	26 200	300
Williamsburg Bridge	11 500		6 300	17 800	1 200
Brooklyn Bridge	a		700	700	2 500
Ferry	1 200		1 100	2 300	
Total	31 100	-	15 900	47 000	4 000
QUEENS VIA:					
Queensborough Bridge	12 300		5 700	18 000	600
Queens-Midtown Tunnel					
Total	12 300	-	5 700	18 000	600
NEW JERSEY VIA:					
Holland Tunnel					
Lincoln Tunnel					
12 Ferries	7 500	a	4 400	11 900	
Total	7 500	a	4 400	11 900	
STATEN ISLAND VIA:					
St.George-Whitehall St. Ferry	600	-	700	1 300	
ALL SECTORS	149 000	a	51 000	200 000	7 300

a - Negligible