

2.0 DEMOGRAPHIC ANALYSIS

The demographic/socioeconomic analysis of the study area examines population trends such as growth/decline, age distribution and sex, along with socioeconomic characteristics such as household size, employment, income and car ownership rate to identify trends and help determine future needs.

The demographic analysis relies on data from New York City Department of City Planning (NYCDCP), and computer files issued by the United States Department of Commerce – Bureau of the Census. Data were collected and analyzed for the years 1980, 1990 and 2000.

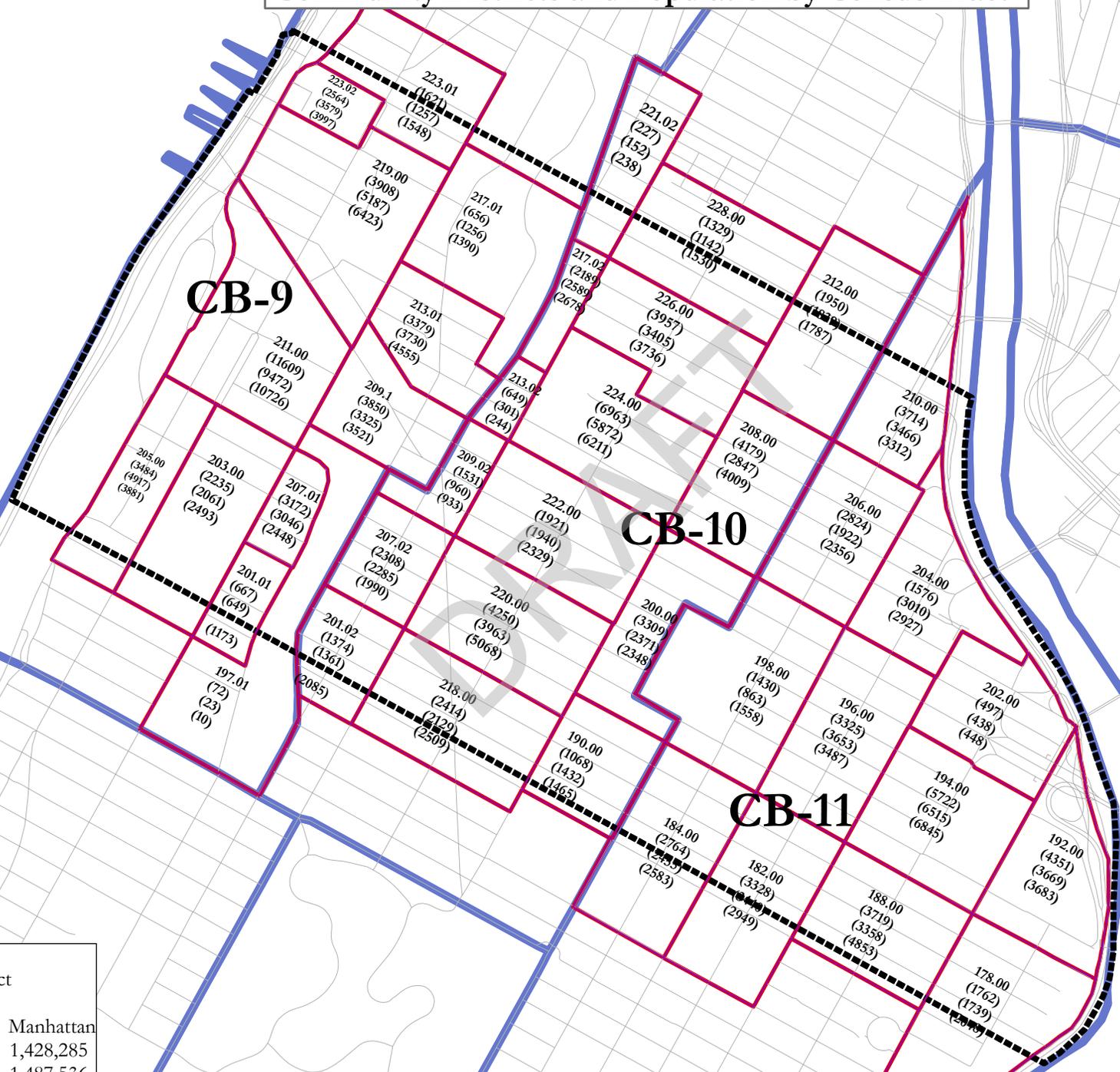
To better assess the population dynamics of the study area, comparisons were made with the Borough of Manhattan and New York City, where applicable.

The Harlem Morningside study area cuts across three Community Districts: 9, 10 and 11 and consists of the following Census Tracts (in whole or in part): 1780.00*, 182.00*, 184.00*, 188.00*, 190.00*, 192.00, 194.00, 196.00, 197.01*, 198.00, 200.00, 201.01*, 201.02*, 202.00, 203.00*, 204.00, 205.00*, 206.00, 207.01, 207.02, 208.00, 209.01, 209.02, 210.00*, 211.00, 212.00*, 213.01, 213.02, 217.01, 217.02, 218.00*, 219.00, 220.00, 221.02*, 222.00, 223.01*, 223.02, 224.00, 226.00, 228.00*. Twenty four tracts are located entirely within the study area, while 16 are partially located in the study area.

In the analysis of partial census tracts, it is assumed that the population and other related variables are evenly distributed geographically. Exhibit 2-1 shows the community districts boundaries and the census tracts with 1980, 1990 and 2000 population for the study area.

* Tracts partially within the study area.

Exhibit 2-1 Community Districts and Population by Census Tract



CB-9

CB-10

CB-11

Legend	
219.00 Census Tract	
Population	
Study Area	Manhattan
(1980)- 111,788	1,428,285
(1990)- 107,819	1,487,536
(2000)- 118,374	1,537,195

2.1 Population Trends

The population analysis covers three decennial years 1980, 1990 and 2000 as shown in Table 2-1 below. The study area had a population of 111,788, 107,819, and 118,374 in 1980, 1990 and the year 2000, respectively. This shows a population increase of 6.2% over the 20 year period. The population decline by 3.6% between 1980 and 1990, while between 1990 and 2000 the population grew 9.8%. Comparing the population changes in the study area with the borough of Manhattan and New York City, analysis shows that both areas recorded a growth in population over the two decades. New York City grew by 13% and Manhattan grew by 7.5% over the 20 year period, respectively.

Table 2-1: Population by Area

Census Year	New York City	% Change	Manhattan	% Change	Study Area	% Change
1980	7,071,639		1,428,285		111,788	
1990	7,322,564	3.6	1,487,536	4.2	107,819	-3.6
2000	8,008,278	9.4	1,537,195	3.3	118,374	9.8

The travel needs and characteristics of the school-attending population is different from that of the working and retired population. To capture the difference the analysis was applied to six age groups: ages 0-4, 5-9, 10-14, 15-19, 20-64, 65+. This analysis reflects pre-school, elementary, and junior high school; employable; and retired population, respectively. The age of 19 was chosen as the cut-off for school age population because even though the legal working age is 16 years, DCP statistics show that less than 40% of the 0-17 year population is employed. Also the census shows that a significant number of the school population is between 19-25years old. The age for the retired (65+) was supported by the fact that less than 20% of this population is employed according to DCP. The 0-19 age group is made up predominately of school attending population. Their trips tend to be made slightly outside of the work trip peak hours. The work trips are more directly related to the 20-64 age groups. The majority of the over 65 age group trips tend to be made outside of both the work trip and school trip peak

hours. Table 2-2 shows comparison in the age distribution among the study area, Manhattan and New York City.

Table 2-2: Population by Area and Age Group

Census Year & Age Group	New York City	% Share	Manhattan	% Share	Study Area	% Share
1980	7,071,639	100	1,428,285	100	111,788	100
0 - 4	470,694	6.7	69,152	4.8	7,072	6.3
5 - 9	447,327	6.3	62,687	4.4	6,635	6
10 - 14	506,283	7.2	72,059	5.0	8,330	7.5
15 - 19	563,492	8.0	86,072	6.0	10,902	10
20 - 64	4,132,111	58.4	933,878	65.4	65,110	58
65+	951,732	13.5	204,437	14.3	13,740	12.3
1990	7,322,564	100	1,487,536	100	107,819	100
0 - 4	509,740	7.0	78,590	5.3	8,288	7.7
5 - 9	457,477	6.2	66,340	4.5	7,444	7.0
10 - 14	450,072	6.1	63,563	4.3	7,165	6.6
15 - 19	470,786	6.4	72,557	4.9	8,511	8.0
20 - 64	4,481,172	61.2	1,009,102	68.0	62,712	58.2
65+	953,317	13.1	197,384	13.3	13,117	12.2
2000	8,008,278	100	1,537,195	100	118,374	100
0 - 4	540,878	6.8	76,048	4.9	7,848	6.6
5 - 9	561,115	7.0	73,358	4.8	8,982	7.6
10 - 14	530,816	7.0	69,288	5.0	8,290	7.0
15 - 19	520,641	7.0	75,186	5.0	9,192	8.0
20 - 64	4,916,971	61.4	1,056,539	68.7	70,933	60.0
65+	937,857	12.0	186,776	12.2	12,615	11.0

2.2 Labor Force

According to the U.S census bureau the labor force includes all persons in the civilian labor force plus members of the Armed Forces (persons 16 years and over on active duty with the U.S. Army, Navy, Air Force, Marine Corps, or Coast Guards). The “civilian labor force” consists of persons classified as employed or unemployed. Those not in the labor force are mainly students, housewives, retired workers, seasonal workers, inmates of institutions, disabled persons, and persons doing only incidental unpaid family work.

As expected the labor force fluctuates with changes in the total population. Table 2-3 shows the labor force distribution for 1980, 1990 and 2000 year.

Table 2-3 indicates that between 1980 and 1990 the percentage of people in the labor force in New York City increased by 3.4% even though the population of those over 16 years of age decreased by 11.2%. Manhattan's labor force and population over 16 years increased by 3.7% and 4.5% respectively during the same period. In the study area labor force increased by 6.5% however population over 16 years old decreased by 13.2% during this period. From 1980 to 1990 in New York City, civilians employed decreased by 7% while civilians unemployed increased by 16.5%, respectively. Manhattan experienced an increase of 9.3% and 17.5% in civilians employed and unemployed, while the study area civilians employed dropped by 1.5% and civilians unemployed increased by 14.3% for the same period.

Between 1990 and 2000 the percentage of people in the labor force in New York City decreased by 3.9% even though the population over 16 years of age increased by 7.4%. Manhattan's labor force decreased by 1.9% during the same period, the over 16 population increased by 3.1%. The study area labor force remained constant for this period, while the over 16 population decreased by 6.4%. Civilians employed and civilians unemployed from 1990 to 2000 increased by 0.6% and 7.6%, respectively for New York City. Manhattan remained almost constant for civilians employed, while civilians unemployed increased by 6.2%. In the study area the civilians employed dropped drastically by 10.2% and civilians unemployed increased by 18.5%, more than double the rate of Manhattan and New York City for the same period.

Table 2-3: Labor Force Distribution

Census Year	New York City	% change	Manhattan	% change	Study Area	% change
1980 (Total pop)	7,071,639		1,428,285		111,788	
Pop over 16 years	6,467,814	-	1,209,444	-	94,025	-
% in labor force of total pop 16 years & over	58.2%	-	62.6%	-	46.1%	-
Employed	3,487,013	-	698,727	-	37,706	-
Unemployed	269,009	-	55,324	-	5,572	-
1990 (Total pop)	7,322,564	3.6%	1,487,536	4.2%	107,819	-3.6%
Pop over 16 years	5,817,015	-11.2%	1,266,398	4.5%	83,084	-13.2%
% in labor force of total pop 16 years & over	61.6%	3.4%	66.3%	3.7%	52.6%	6.5%
Employed	3,257,637	-7%	770,084	9.3%	37,139	-1.5%
Unemployed	322,125	16.5%	67,074	17.5%	6,503	14.3%
2000 (Total pop)	8,008,278	9.4%	1,537,195	3.3%	118,374	9.8%
Pop over 16 years	6,279,431	7.4%	1,307,423	3.1%	78,098	-6.4%
% in labor force of total pop 16 years & over	57.7%	-3.9%	64.4%	-1.9%	52.6%	0.0%
Employed	3,277,825	0.6%	770,283	0.03%	33,354	-10.2%
Unemployed	346,741	7.6%	71,208	6.2%	7,705	18.5%

U.S. Census Bureau data 1980, 1990 and 2000

2.3 Household Characteristics

The number of households in the study area declined during the first decade (1980-1990) from 44,421 to 42,175, a 5.1% decrease, while between (1990-2000) the number increased by 8.8% to 45,889. However, the number of households in Manhattan increased over both decades, from 704,502 to 716,422 and from 716,422 to 738,644, representing 1.7% and 3.1% increase, respectively. In New York City the number of households decreased by 19.5% from 3,502,233 to 2,819,401 over 1980 to 1990, while between 1990-2000 the number increased by 7.2% to 3,021,588.

The average household size (persons/household) in the study area showed a marginal increase from 2.52 to 2.56 between 1980 to 1990, and a similar increase from 2.56 to 2.58 from 1990 to 2000. Manhattan’s household size showed a similar trend, increasing from 2.03 to 2.08 between 1980 to 1990, while remaining constant at 2.08 between 1990 and 2000. The average household size for New York City on the other hand increased during both decades from 2.02 to 2.60 between 1980 to 1990 and from 2.60 to 2.65 between 1990 and 2000 respectively. Table 2-4 shows the household characteristics for the New York City, Manhattan and the study area.

Table 2-4: Household Characteristics

Census Year	New York City	% Change	Manhattan	% Change	Study Area	% Change
1980 Population	7,071,639		1,428,285		111,788	
# of Households	3,502,233		704,502		44,421	
Persons Per Household	2.02		2.03		2.52	
1990 Population	7,322,564	3.6	1,487,536	4.2	107,819	-3.6
# of Households	2,819,401	-19.5	716,422	1.7	42,175	-5.1
Persons Per Household	2.60	28.6	2.08	2.4	2.56	1.6
2000 Population	8,008,278	9.4	1,537,195	3.3	118,374	9.8
# of Households	3,021,588	7.2	738,644	3.1	45,889	8.8
Persons Per Household	2.65	2.1	2.08	0.2	2.58	0.9

2.4 Median Household Income

The household income for the study area is best represented in comparison with New York City and Manhattan. Table 2-5 shows median income for the study area, Manhattan and New York City for the period 1980-2000.

Table 2-5: Median Household Income by Area

Census Year	New York City	% Change	Manhattan	% Change	Study Area	% Change
1980	\$13,854		\$13,904		\$7,370	
1990	\$32,262	132.9	\$29,823	114.5	\$14,781	100.6
2000	\$47,030	45.8	\$38,293	28.4	\$22,122	49.7

Household median income has grown in general over the 20 years at a faster rate for the borough and the City than for the study area. Not taking inflation into account, the income of New York City residents from 1980 to 1990 increased by 132.9%, by 114.5% for Manhattan residents and by 100.6% for residents in the study area. The 2000 median household income of the study area is \$22,122 which is approximately 58% of Manhattan median household income and 47% of New York City median household income. From 1990 to 2000 the residents of New York City, Manhattan and the study area experienced income increases of approximately 46%, 29% and 50%, respectively.

2.5 Vehicle Ownership

Census data regarding vehicle ownership for the period of 1980 - 1990 was not available. This section will discuss the trends observed in vehicle ownership during the period 1990 to 2000 for New York City, Manhattan and the study area.

Between 1990 and 2000, vehicle ownership in New York City, Manhattan and the study area remained relatively constant as is shown in Table 2-6. In 1990, approximately 44% of New York City households owned vehicles. This percentage drops to approximately 22% for Manhattan and 16% for the study area. The demographic analysis shows that in New York City the number of households increased by 7.2% from 1990 to 2000, while number of household with vehicle increased by 0.2% over the same period. The number of households with no vehicles decreased slightly from 55.9% to 55.7%.

Between 1990 and 2000 the number of households in Manhattan increased by 3.1% while households with vehicles increased just by 0.4%. The study area's data show that from 1990 to 2000 the number of households increased by 8.8%, while households with vehicles increased by 2%. It was also observed that the number of households with no cars decreased from 83.9% to 82.1%.

The changes in population and vehicle ownership in the study area are insignificant, hence it is not anticipated that any significant increase in auto trips will be generated as a result of the resident population.

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Table 2-6: Vehicle Ownership per Household (1990 and 2000)

Vehicles/Household	New York City (Five boroughs)				New York County (Manhattan)				Study Area			
	1990	%	2000	%	1990	%	2000	%	1990	%	2000	%
Zero	1,575,217	55.9	1,682,946	55.7	557,662	77.8	572,094	77.4	35,406	83.9	37,693	82.1
One	887,309	31.5	955,165	31.6	144,644	20.2	149,476	20.2	6,179	14.6	7,246	15.8
Two	282,593	10	305,267	10.10	12,090	1.7	13,172	1.8	475	1.1	835	1.8
Three or more	74,282	2.6	78,210	2.6	2,026	0.3	3,902	0.5	65	0.2	115	0.3
Total Households w/vehicles	1,244,184	44.1	1,338,642	44.3	158,760	22.2	166,550	22.6	6,719	15.9	8,196	17.9
No of Households	2,819,401	100	3,021,588	100	716,422	100	738,644	100	42,175	100	45,889	100

2.6 Travel Behavior

2.6.1 Journey to work by Mode

Journey to work by mode was analyzed for 1980, 1990 and 2000 census years. Tables 2-7, 2-8 and 2-9 show a summary of the journey to work by mode share.

The 1980 journey to work data for public transportation and other modes were not available at the same level of detail as for 1990 and 2000 census years. However, the data shows clearly the most commonly used modes for journey to work in the study area, Manhattan and New York City. The 1980 journey to work data reveal that for New York City, Manhattan and the study area the predominant mode used for journey to work was public transportation, representing 56.2%, 61.3% and 68.2%, respectively of the total trips. The journey by rail group (subway, elevated trains and rail road) trips represented approximately 42% in New York City, 43% in Manhattan and 51% in the study area.

Journey to work by automobiles represent the second most commonly used mode in New York City with 31% auto share comprised of 21% drive alone and 10% carpool. In Manhattan and the study area however the share drops substantially to 12% and 11%, respectively.

Walking represent 25.1% share and 19.2% share of journey to work trips in Manhattan and in the study area, respectively, while New York City share is just 11.7% of total trips. The use of other means for journey to work represents less than 2% of the trips in New York City, Manhattan and the study area.

The 1990 journey to work data show public transportation as the predominant mode as was in 1980. In 1990, New York City public transportation accounted for 54.5% of all work trips, while Manhattan and the study area accounted for 61.5% and 64.8%, respectively. Travel by subway was the most commonly used form of public transportation in the study area, accounting for 44.9% of all work trips. This trend is also observed in Manhattan and New York City with the subway share being 40.3% and 37.6%, respectively. Surface transit (Bus) represents the second most commonly used

mode of public transportation with the study area, Manhattan and New York City having 17.3%, 15.1% and 13% share, respectively.

About 1.4% of the study area residents use taxicabs while ferry and railroad are hardly used. Walking represents 21.9% share in the study area, while 24.3% was observed for Manhattan and 11% for New York City. The study area automobile share is 11.9% with 8.6% being drive alone and 3.3% carpool.

The 2000 journey to work data reveal a similar trend to 1990 with public transportation being the predominant mode, with New York City, Manhattan and the study area having 54.2%, 63.2% and 66.6% public transit share respectively. The study area has 51.8% of the trips made by subway and 11.3% made by buses. Taxicabs represent 1.8% of the work trip in the study area, 1.7% in New York City and Manhattan with a higher percentage share of 4.9%. Among the other modes, walking represents 18.9% in the study area, 23.3% in Manhattan and 10.7% in New York City. Automobile accounted for 13% of the total trips in the study area, 11.7% in Manhattan and 33.8% for New York City.

Table 2-7: 1980 Journey To Work By Mode

1980 Census Year	New York City	Mode Share %	Manhattan	Mode Share %	Study Area	Mode Share %
Car, Truck or Van						
Drove alone	567,774	20.7	41,721	6.6	2,329	6.7
Carpooled	278,273	10.2	31,791	5.1	1,587	4.5
Total	846,047	30.9	73,512	11.7	3,915	11.2
Public Transportation						
Bus or street car	384,393	14	113,059	18.1	5,892	16.8
Subway, elevated train or rail road	1,157,634	42.2	270,856	43.2	17,948	51.4
Total	1,542,027	56.2	383,915	61.3	23,841	68.2
Walked only	320,308	11.7	156,861	25.1	6,718	19.2
Other means	33,166	1.2	11,571	1.8	500	1.4
Total Trips	2,741,548	100	625,859	100	34,974	100

Table 2-8: 1990 Journey To Work By Mode

1990 Census Year	New York City	Mode Share %		Mode Share %	Study Area	Mode Share %
Car, Truck or Van						
Drove alone	765,151	24.6	59,097	8.3	2,827	8.6
Carpooled	271,503	8.7	28,415	4.0	1,070	3.3
Total	1,036,654	33.3	87,512	12.3	3,897	11.9
Public Transportation						
Bus	403,477	13.0	107,521	15.1	5,638	17.3
Subway	1,168,346	37.6	287,412	40.3	14,657	44.9
Railroad	54,716	1.8	8,336	1.2	402	1.2
Ferry	16,619	0.5	360	0.0	0	0.00
Taxicab	50,096	1.6	34,798	4.9	466	1.4
Total	1,693,254	54.5	438,427	61.5	21,163	64.8
Other modes						
Motorcycle	1,711	0.0	545	0.1	10	0.0
Bicycle	9,643	0.3	4,892	0.7	78	0.2
Walked	340,077	11.0	173,619	24.3	7,132	21.9
Other means	24,930	0.8	8,051	1.1	400	1.2
Total	376,361	12.1	187,107	26.2	7,620	23.3
Total Trips	3,106,269	100	713,046	100	32,680	100.00

Table 2-9: 2000 Journey To Work By Mode

2000 Census Year	New York City	Mode Share %	Manhattan	Mode Share %	Study Area	Mode Share %
Car, Truck or Van						
Drove alone	794,422	25.6	57,150	8.1	3,239	9.1
Carpooled	254,974	8.2	25,604	3.6	1,379	3.9
Total	1,049,396	33.8	82,754	11.7	4,618	13.0
Public Transportation						
Bus	364,408	11.8	75,859	10.7	4,030	11.3
Subway	1,199,226	38.7	328,426	46.3	18,412	51.8
Railroad	51,141	1.6	8,309	1.2	591	1.7
Ferry	11,193	0.4	411	0.1	3	0.00
Taxicab	53,781	1.7	35,187	4.9	632	1.8
Total	1,679,749	54.2	448,192	63.2	23,668	66.6
Other modes						
Motorcycle	1,488	0.0	437	0.1	80	0.2
Bicycle	15,024	0.5	6,410	0.9	269	0.8
Walked	332,264	10.7	164,934	23.3	6,713	18.9
Other means	21,998	0.7	6,714	0.9	220	0.6
Total	370,774	11.9	178,495	25.2	7,282	20.5
Total Trips	3,099,919	100.00	709,441	100.00	35,568	100.00

2.6.2 Auto Travel Characteristics

Table 2-10 shows a summary of auto travel by years observed in New York City, Manhattan and in the study area. The data indicate that between 1980 and 1990 drive alone increased substantially. New York City (five boroughs) had a 34.8% increase, Manhattan a 41.6% increase and the study area a 32.5% increase. Carpool on the other hand decreased by 2.4% in New York City, 10.6% in Manhattan and 27.7% in the study area for the same period. Travel by other means increased in New York City and Manhattan by 8.5% and 10.4%, respectively; while it decreased by 3.1% in the study area.

Comparing 1990 with 2000 drive alone increased at a slower rate than the previous decade, New York City drive alone increased by 3.8% and in the study area by 14.6%. In Manhattan it declined by 3.3%. Carpooling in New York City decreased by 6.1%, and in Manhattan by 9.9%; while in the study area it increased by 28.9%.

Table 2-10: Auto Travel Characteristics

Census Year & Driving characteristics	New York City	% Change	Manhattan	% Change	Study area	% Change
1980						
Drove Alone	567,774		41,721		2,329	
Carpool	278,273		31,791		1,587	
Other means	1,978,942		603,716		29,714	
1990						
Drove Alone	765,151	34.8	59,097	41.6	2,827	32.5
Carpool	271,503	-2.4	28,415	-10.6	1,070	-27.7
Other means	2,146,434	8.5	666,636	10.4	28,783	-3.1
2000						
Drove Alone	794,422	3.8	57,150	-3.3	3,239	14.6
Carpool	254,974	-6.1	25,604	-9.9	1,379	28.9
Other means	2,142,674	-0.2	670,360	0.6	30,950	7.5