

## 2. DEMOGRAPHIC ANALYSIS

### 2.1 Introduction

To understand the population dynamics of the study area, a comparative analysis of pertinent demographic data for New York City, Brooklyn, and the study area was conducted using the 1980, 1990, and 2000 Census data. The analysis examines population trends, poverty rates, household size, income, age, vehicle ownership, and home ownership in an attempt to better estimate and forecast travel behavior in the study area which includes 53 census tracts (shown in Figure 2-1). Forty-seven of these census tracts (294, 296, 298, 300, 302, 304, 306, 308, 314, 320, 326, 328, 330, 340, 342, 348.01, 348.02, 350, 352, 354, 356, 360.01, 360.02, 362, 364, 366, 370, 374, 382, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 414.01, 414.02, 416, 610.01, and 610.02) are located wholly in the study area, and six census tracts (270, 412, 418, 424, 426, and 428) are partially located in the study area.

### 2.2 Population Trend

The 2000 Census shows the population for New York City as 8,008,278, Brooklyn as 2,465,326 and the study area as 176,516. As shown in Table 2-1, unlike New York City's and Brooklyn's population that grew steadily between 1980 and 2000, the study area's population experienced a slight decrease between 1980 and 1990, but grew between 1990 and 2000.

**Table 2-1: Total Population of New York City, Brooklyn and the Study Area (1980-2000)**

Census Year/ Geographic Unit	1980 Total Population	1990 Total Population	Percent Change ( '80-'90)	2000 Total Population	Percent Change ( '90-'00)	Percent Change ( '80-'00)
New York City	7,071,639	7,322,564	3.5%	8,008,278	9.4%	12.8%
Brooklyn	2,230,900	2,300,664	3.1%	2,465,326	7.2%	10.5%
Study Area	166,490	164,560	-1.2%	176,516	7.3%	6.0%

*Source: US Census Bureau 1980, 1990 & 2000.*

Between 1980 and 1990, approximately 72% of the census tracts (38 of 53) experienced population decline. However, most of these census tracts (35 of 38) recovered in the 1990s and registered population growth in the 2000 Census. Overall, one-fourth of the census tracts (13)

Figure 2-1: Population By Census Tract (1980-2000)



experienced a decrease in population during the analysis period. Chart 2-1 provides an overview of the population trend for each census tract in the study area. There were significant fluctuations in the study area's population. For example, census tract 320 lost more than 56% of its population between 1990 and 2000. On the other hand, between 1990 and 2000, the population in five census tracts (348.01, 348.02, 362, 364, and 398) increased by more than 35% (census tract 348.01 experienced the highest growth with an increase of over 100%). Figures 2-2a and 2-2b show a summary of population change in the study area between 1980 and 2000.

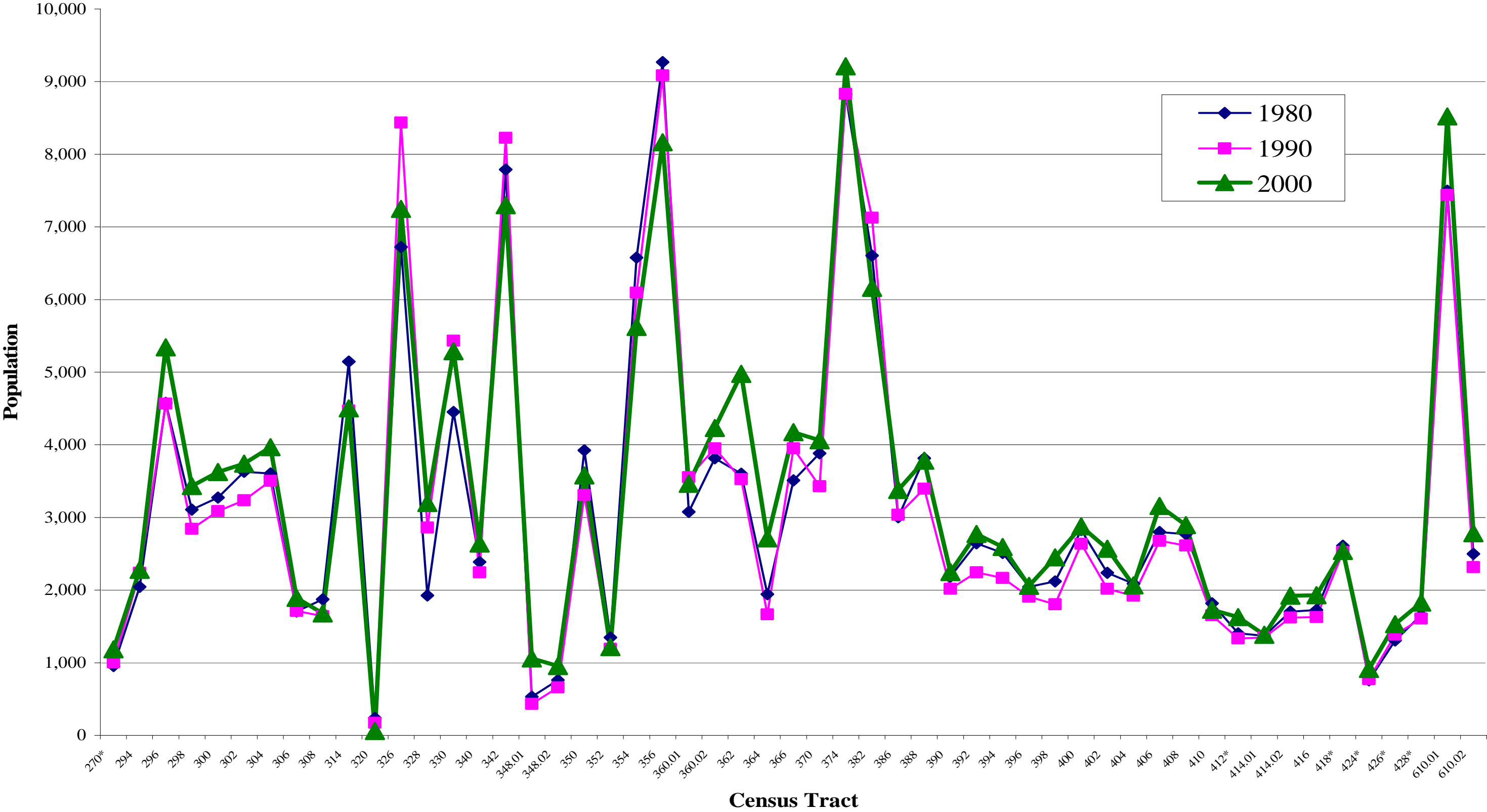
### **2.3 Age Characteristics in the Study Area**

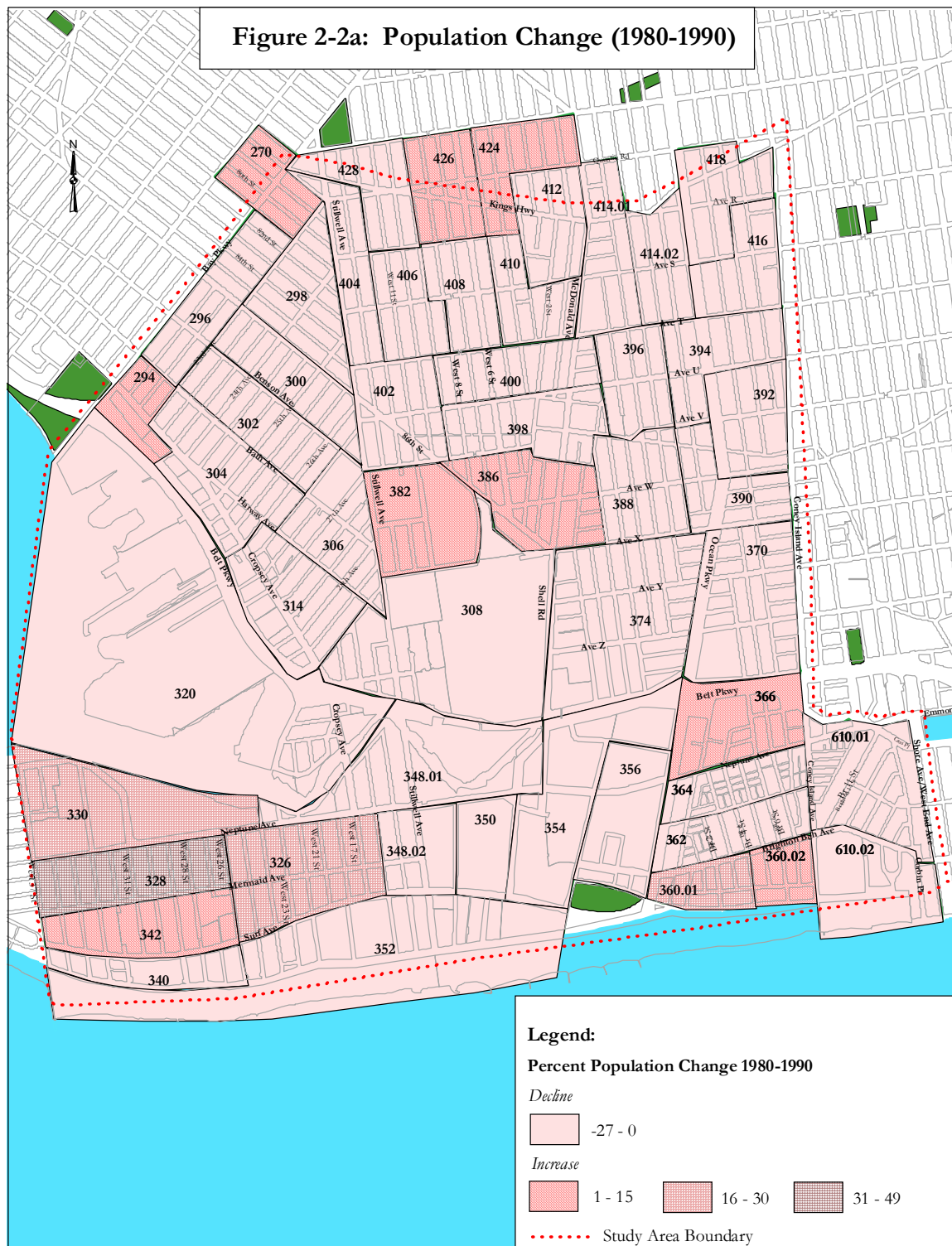
Age is a significant factor in determining travel behavior. The demand for travel varies by population age groups. The travel needs by mode and time of day is different for school-age children, working adults, and the retired population. The age distribution of these three groups – 0-17, 18-64, and 65 plus – was used to assess travel behavior in the study area. Census data from 1980 to 2000 showed that the percentage of the population in each age group did not change significantly in the study area. As shown in Chart 2-2 between 1980 and 2000, there was a slight population increase for the 0-17 and 18-64 age groups, while there was a decrease in the over 65 population. While there was not a significant difference between the youth and elderly populations in most census tracts, there were some census tracts where the difference was quite obvious. For example, in census tracts 326, 328, 330, 342, 348.02, and 382, the youth population was approximately three times greater than that of the elderly population. On the other hand, the elderly population was significantly greater than the youth population in census tracts 352, 354, 356, 360.01, 360.02, and 610.02. These tracts are concentrated in the southern portion of the study area. In 2000, the 'active population' – age 18 to 64 – made up approximately 59% of the population.

### **2.4 Income and Poverty Characteristics**

In 2000, the study area's median household income was \$29,303 which was slightly below that of Brooklyn (\$33,056) and New York City (\$38,293). Chart 2-3 shows the median income for New York City, Brooklyn, and the study area and the percent by which it grew between 1980 and 2000. The median income grew significantly in each geographic area between 1980 and

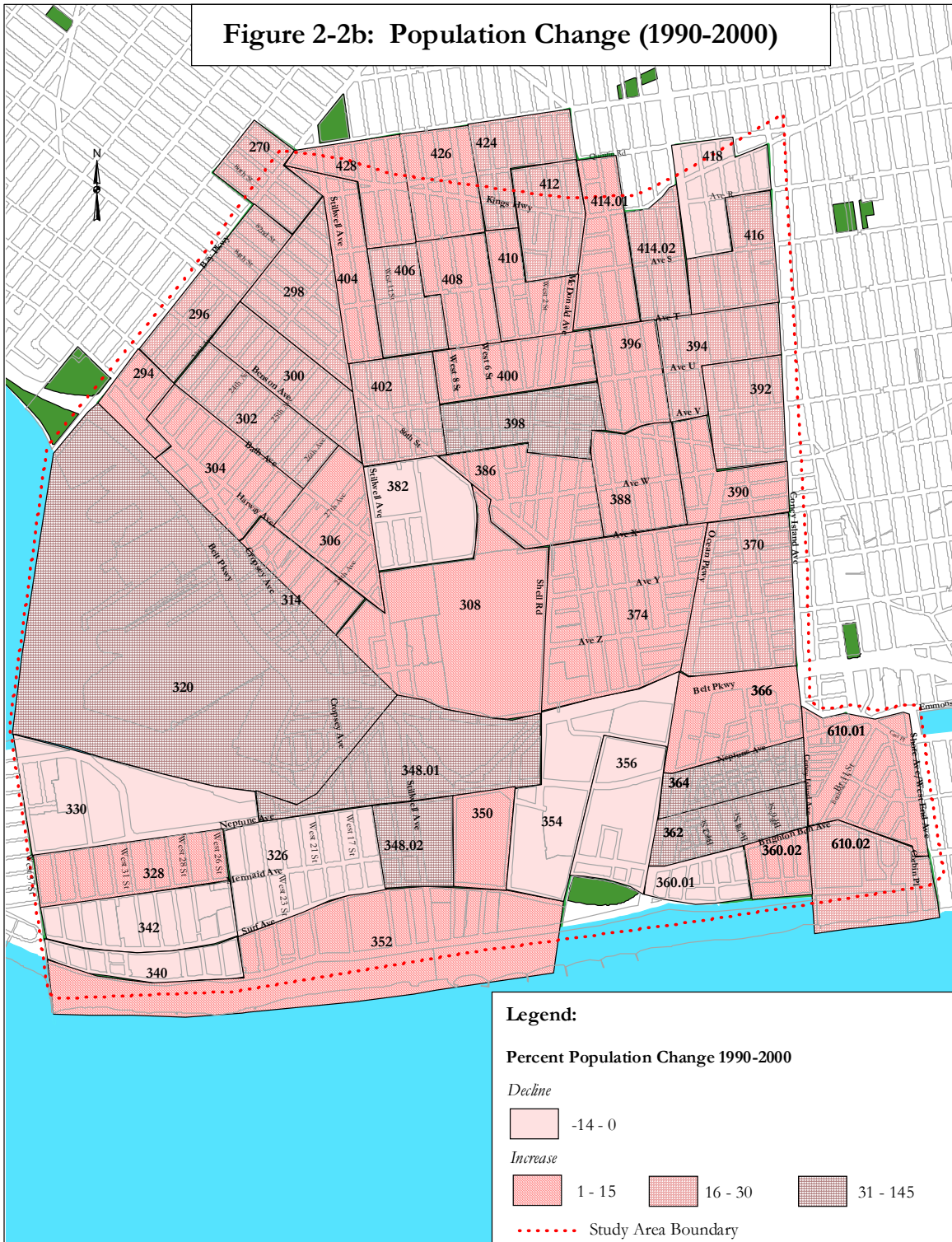
Chart 2-1: Study Population Trend (1980-2000)



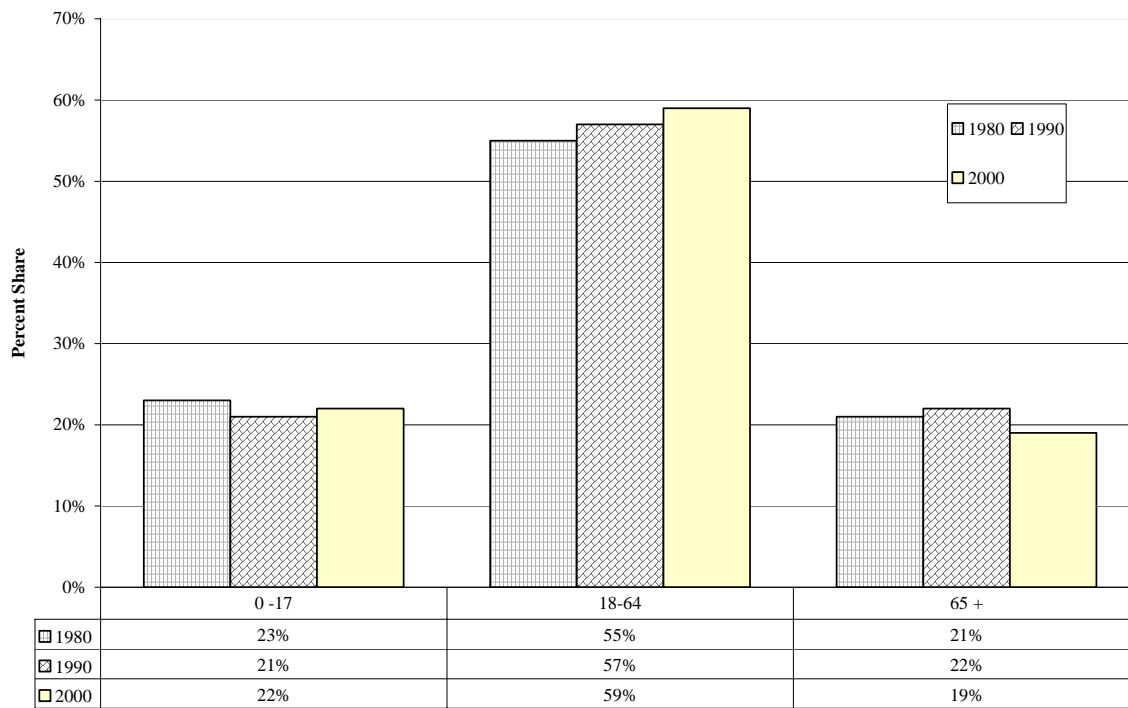




**Figure 2-2b: Population Change (1990-2000)**

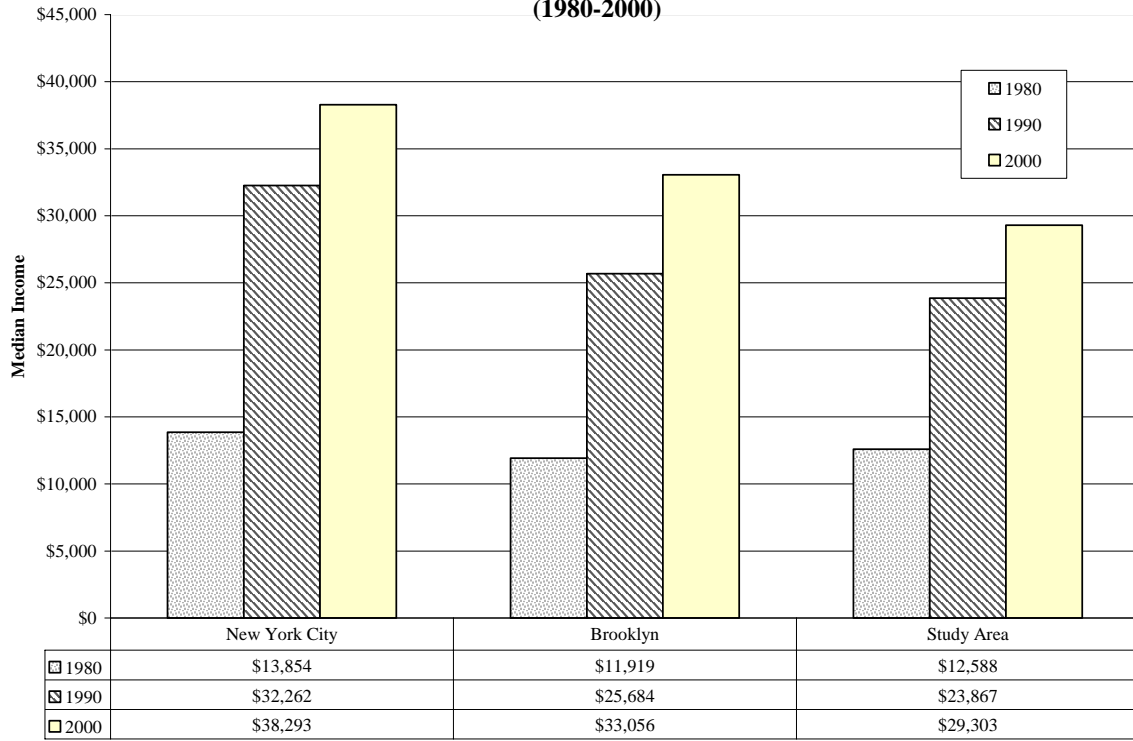


**Chart 2-2: Study Area Age Distribution (1980-2000)**



**Age Groups**

**Chart 2-3: Median Household Income for New York City, Brooklyn, and Study Area  
(1980-2000)**





1990; however, between 1990 and 2000 the growth was less significant. Within the study area, median incomes were generally higher in the northern portion (Gravesend) of the study area (north of Shore Parkway) than the southern portion (Coney Island and Brighton Beach). On average, the median income for the census tracts south of Shore Parkway was less than \$30,000 annually except in census tract 320 (over \$50,000), census tract 356 (between \$30,000-\$39,999), and census tract 608 (between \$40,000-\$49,999). Between 1990 and 2000, the median income increased for a majority (47 of 53) of the census tracts; however, in six census tracts (270, 340, 362, 386, 392, and 394) the median income decreased.

Although the median income grew in all geographical areas, the pattern for the number of people living in poverty varied for each geographical area. As shown in Table 2-2, the population living in poverty in the study area grew throughout the analysis period, while the number of people living in poverty in New York City and Brooklyn decreased between 1980 and 1990 and increased between 1990 and 2000.

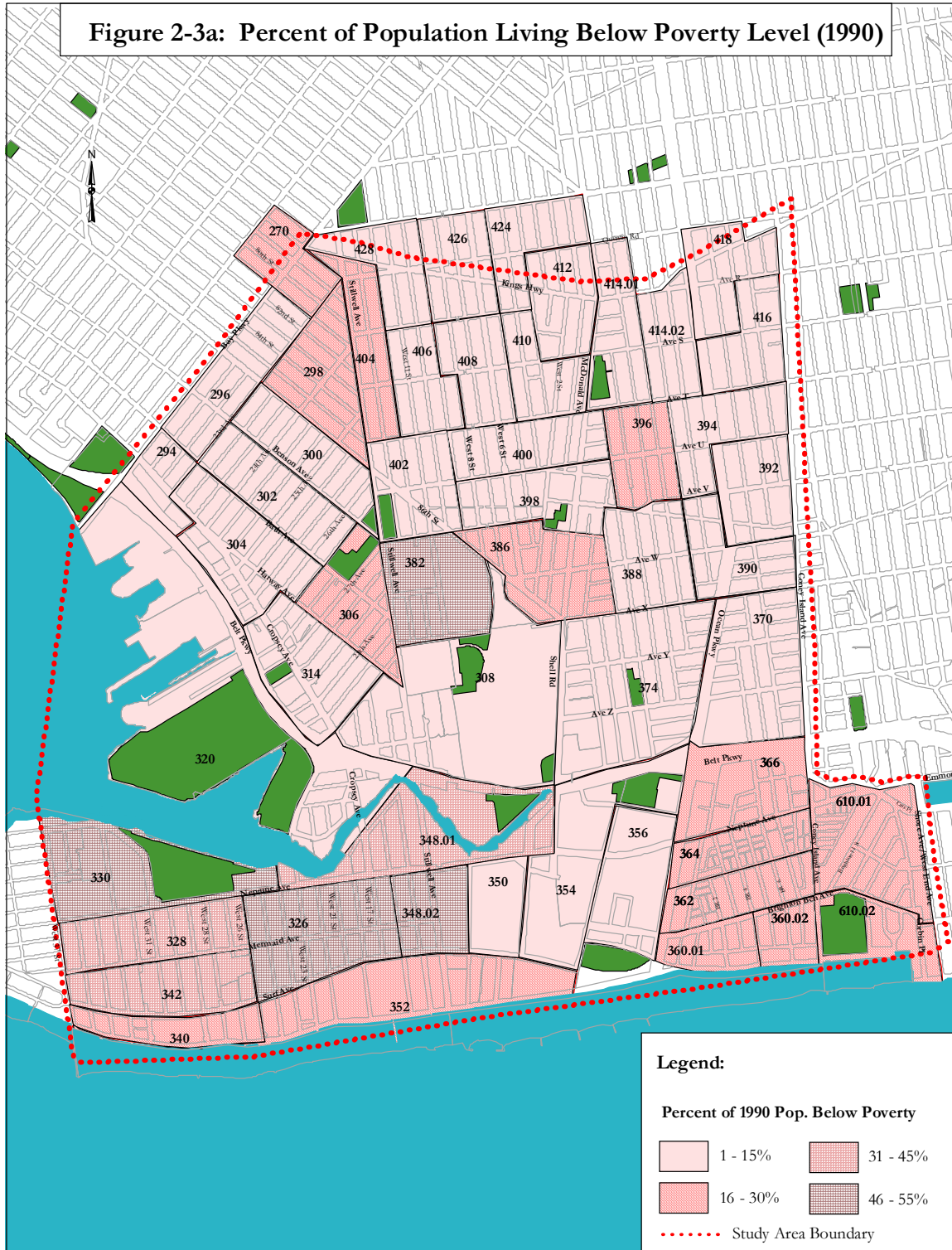
**Table 2-2: Poverty Status - Study Area Compared to New York City and Brooklyn (1990-2000)**

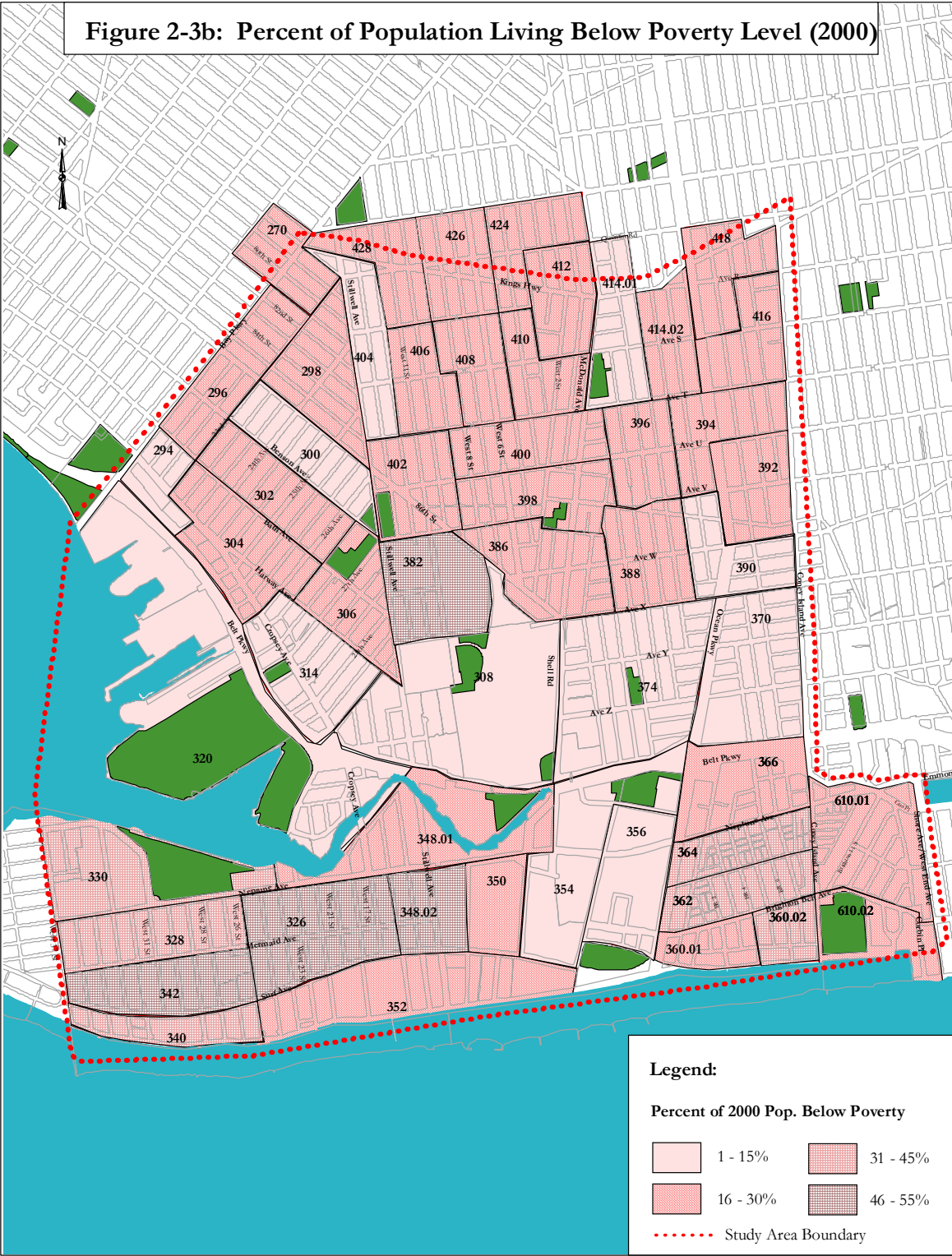
Place	1990 Total Population	Population Below Poverty Level	Percent Population Below Poverty Level	2000 Total Population	Population Below Poverty Level	Percent Population Below Poverty Level	Percent Change ('90-'00)
NYC	7,322,564	1,384,994	18.9%	8,008,278	1,668,938	20.8%	1.9%
Brooklyn	2,300,664	514,163	22.3%	2,465,326	610,476	24.8%	2.4%
Study Area	164,560	37,158	22.6%	176,516	48,137	27.3%	4.7%

*Source: US Census Bureau 1990 & 2000.*

Between 1990 and 2000 there was a 50 percent growth in the number of census tracts in the study area with more than 20 percent of its population living below the poverty level. As shown in Figures 2-3a and 2-3b, the number of census tracts with more than 20 percent of its population living in poverty increased from 15 in 1990 to 28 census in 2000.

Figure 2-3a: Percent of Population Living Below Poverty Level (1990)





## 2.5 Household Characteristics

The 2000 Census indicates that the average household size in the study area is 2.45. Table 2-3 shows the household size for New York City, Brooklyn, and the study area for 1980, 1990, and 2000. The household size for the study area is slightly less than that of Brooklyn which is 2.80 and slightly larger than that of New York City which is 2.0. As an aggregate, the study area's household size remained constant between 1980 and 2000; however, slight changes occurred in each census tract. In 1990 the household size in many census tracts decreased below that of 1980. Although the household size of approximately half of the study area decreased between 1980 and 1990, majority of the census tracts regained and surpassed the 1980 household size in 2000. Majority of the census tracts (33) averaged between 2.00-2.99 persons per household; 13 census tracts had more than 3 persons per household, and 10 census tracts had less than 2 persons per household.

**Table 2-3: Household Characteristics – New York City, Brooklyn, and Study Area (1980-2000)**

Census Year	New York City	Percent Change	Brooklyn	Percent Change	Study Area	Percent Change
<b>1980</b>						
Population	7,071,639		2,230,936		166,490	
Households	3,502,233		828,257		68,023	
Persons Per Household	2.0		2.7		2.5	
<b>1990</b>						
Population	7,322,564	4	2,300,664	3.13	164,560	-1
Households	2,819,401	-19	827,679	-0.07	67,268	-1
Persons Per Household	2.6	29	2.8	3.20	2.5	-0.05
<b>2000</b>						
Population	7,489,400	2	2,465,326	7.16	176,560	7
Households	3,220,442	14	881,006	6.44	71,927	7
Persons Per Household	2.3	-10	2.8	0.67	2.5	0

Source: US Census Bureau 1980, 1990 & 2000

## 2.6 Journey to Work and Auto Ownership Characteristics

Public transit was the most popular mode for journey-to-work trips in the study area in 1980, 1990, and 2000. The portion of the population using mass transit decreased from 60% in 1980 to 52% in 1990; then between 1990 and 2000 it increased slightly to 54%. Automobile was the

second most popular with 33%, 38%, and 37% mode share for 1980, 1990, and 2000, respectively. Approximately eight percent of the population walked or biked to work in each census year. Chart 2-4 shows journey-to-work mode choices for New York City, Brooklyn and the study area, while Chart 2-5 shows journey-to-work choices for the study area and how it fluctuated during the analysis period.

The 1990 and 2000 Census data showed that vehicle ownership rates per household in the study area remained relatively constant. Chart 2-6 shows that in 1990 and 2000 approximately 54% of the households had no vehicles, 35% had one automobile, 9% had two automobiles, and two percent had three or more vehicles. The vehicle ownership rate distribution was similar to that of Brooklyn for both periods and New York City's for 2000. The percentage of New York City's population without an automobile decreased from 73% in 1990 to 56% in 2000.

**Chart 2-4: Journey to Work Mode Choice**

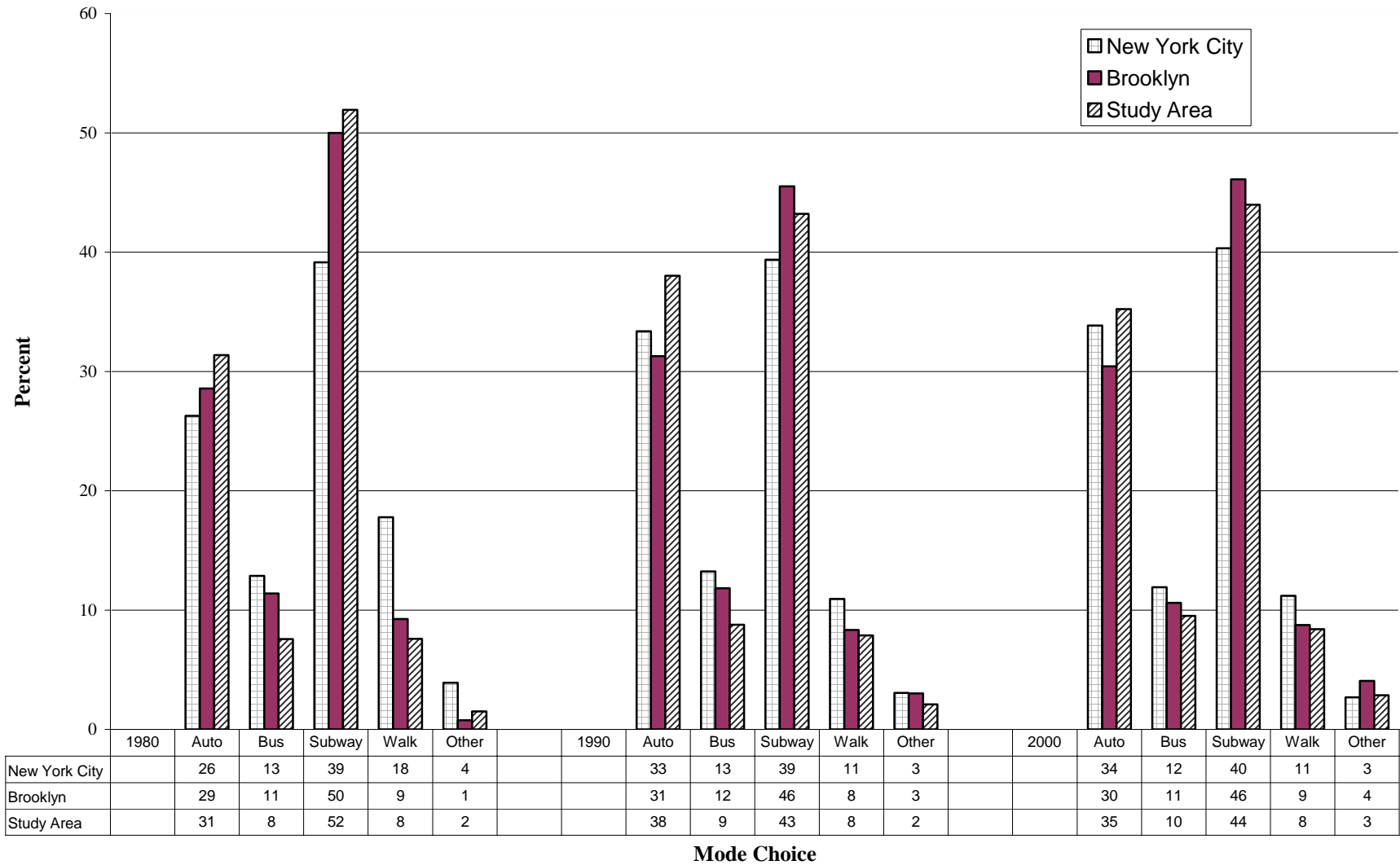
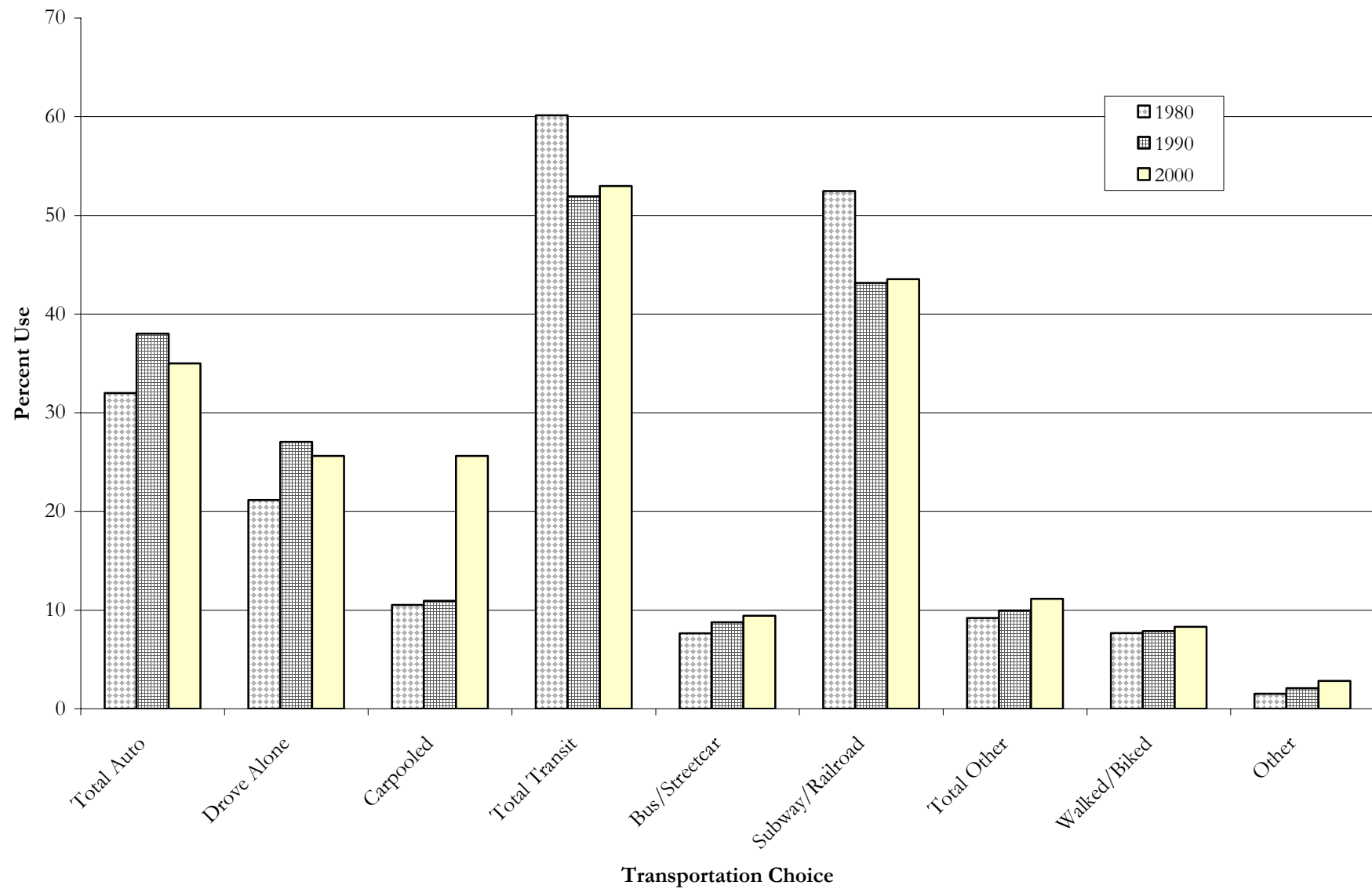


Chart 2-5: Study Area Journey to Work Mode Choices





**Chart 2-6: Vehicle Ownership Rates**

