

Implications

Although New York City is the most transit-dependent location in the United States, the automobile remains an extremely important means of travel among dispersed locations within the city. However, the journey-to-work data demonstrates that there is a tendency for people to work relatively close to their residence. Among those that work close to home in the same study area, non-automotive means of travel are used more frequently than any other. One area for further exploration is what additional public policy levers could encourage other workers living and working in the same study area or in adjoining study areas (which is generally the next likeliest study area to work in) to use non-automotive modes for journey-to-work trips. Since many non-journey-to-work trips are also likely to be relatively local, improving conditions for non-automotive travel for nearby journey-to-work trips may also encourage people to choose non-automotive modes for more of their other nearby trips

The high proportion of workers who work near their place of residence indicates that individuals' decisions about where to work and where to live are interdependent. Land use measures that promote mixed use and a range of housing and employment choices can facilitate individuals' inclination to co-locate home and workplace, which this study's findings suggest could benefit non-auto modal share and reduce travel times.

Study areas in the inner and central parts of Brooklyn and along the Manhattan border in Queens and the Bronx correspond to the denser areas of these boroughs. These areas are better served by transit and have a high incidence of offering a range of nearby destinations for employment, goods, services and institutions that can make neighborhoods more walkable. These study areas include all 9 non-Manhattan "Walkers Paradises" identified by Walk Score™ (walkscore.com) and every community in these study area scored in Walk Score's™ two top categories of walkability. Land use policies that encourage mixed-use growth in the six study areas that constitute this area, promote non-auto trips for both journey-to-work and non-journey-to-work travel including linked trips combining the two. The City's zoning policies are designed to direct growth to these transit-oriented locations while taking action to protect the scale of low-density, more auto-oriented neighborhoods. In doing so, these land use policies help the City to shrink its per capita carbon footprint which is already less than one-third the U.S. average.

Developing multi-use centers at transit-oriented locations can also shift a share of future trips from automobiles to transit, walking or biking. Policies that encourage job and residential cen-

ters at locations such as Downtown Jamaica, provide opportunities for a local population to walk to work, for residents of nearby communities to take a bike or bus to work and connects other neighborhoods via the subway or commuter rail. In addition, locations such as Downtown Jamaica can be reached by transit from suburban locations and can encourage reverse commuting by transit as well.

There may be opportunities for further shifts in modal split away from automobiles among those who take relatively short trips, particularly those within the same Super Puma or to an adjoining Super Puma. Improvements to transit, transportation demand management (TDM) or alternative transportation modes to encourage modal shifts for these relatively short-distance trips may also have benefits of altering mode choices for non-journey-to-work trips. Alternative transportation modes, such as walking and biking, are likely to be more useful options for these relatively short trips, particularly during warmer times of the year and in non-inclement weather. . One area worthy of exploration is a bike sharing program. The Department of City Planning studied bicycle sharing programs in Paris, Washington DC, Montreal and elsewhere in its 2009 report, *Bike-Share Opportunities in New York City* (http://nyc.gov/html/dcp/html/transportation/td_bike_share.shtml). While there are challenges to establishing a bike share program, a program that provides convenient bicycle available near both work and employment opportunities could be popular among the many who live and work in the same super-PUMA study area or in an adjoining study area.

Since high shares of residents work locally, where shorter distances should reduce average travel times, the high travel times in some locations appear to be a particular problem. In Southeast Queens, which has the longest travel times, long distances for journeys-to-work and, if public transit is used, potentially multi-modal trips, may account for long travel times. In Staten Island, where most workers both live and work on the Island and which has the lowest travel times for people working within the study area but the longest travel times for residents, the numbers suggest that long off-island travel times are pushing up average travel times. Again, multi-modal trips or travel along congested vehicular routes may explain this. Improvements that speed up the transit portions of these journeys could positively impact journey-to-work times for these long commutes as could land use measures to enable more workplaces to be located within Staten Island. The Metropolitan Transportation Authority's (MTA) is currently studying the reuse of Staten Island's inactive North Shore railroad which could be used to reduce travel times

for many Staten Island residents that now make multi-mode trips into Manhattan. The MTA's East Side Access project, which will bring the Long Island Railroad (LIRR) into Grand Central Station and increase the LIRR's capacity, offers the opportunity to increase service to South-eastern Queens and provide a significantly faster commute for some Southeast Queens residents. The completion of the East Side Access project will free up some capacity in Pennsylvania Station. The MTA is currently undertaking an environmental review of a project to bring Metro North's New Haven and Hudson Division lines into Penn Station. Such new Metro North services hold the possibility of shorter commute times from areas of the Bronx as well as the potential for coordinating any future transit improvements with targeted transit-oriented development.

More than 300,000 people travel between the boroughs to work. The automobile dominates this travel. Nevertheless, there may be opportunities to expand the use of alternative modes. One area in particular worth exploring is travel between Brooklyn and Queens which constitutes 44 percent of such interborough trips. These boroughs are the only ones not separated by a water body and both bus service and bicycle improvements should be explored. In addition, there may be opportunities to take better advantage of the Atlantic Branch of the Long Island Railroad which connects downtown Jamaica and its transit hub with Atlantic Terminal, Downtown Brooklyn and nine subway lines. Another area to explore encouraging future modal choice shift is the flow between Staten Island and Ft. Greene/Bay Ridge. This is the 12th highest inter-study area flow and it is dominated by the auto mode.

In study areas further from the CBD, where automobile use plays a more important part in maintaining mobility, additional study is needed to evaluate public policies toward automobile use.

Borough to Borough Work Trips by NYC Workers

This section examines the borough to borough travel of workers who live in one borough and work in another. The following Maps 1-10 and Tables 1-4 show the number of workers who reside in one borough and work in a different borough, using the 2000 Journey-to-Work Census Data.

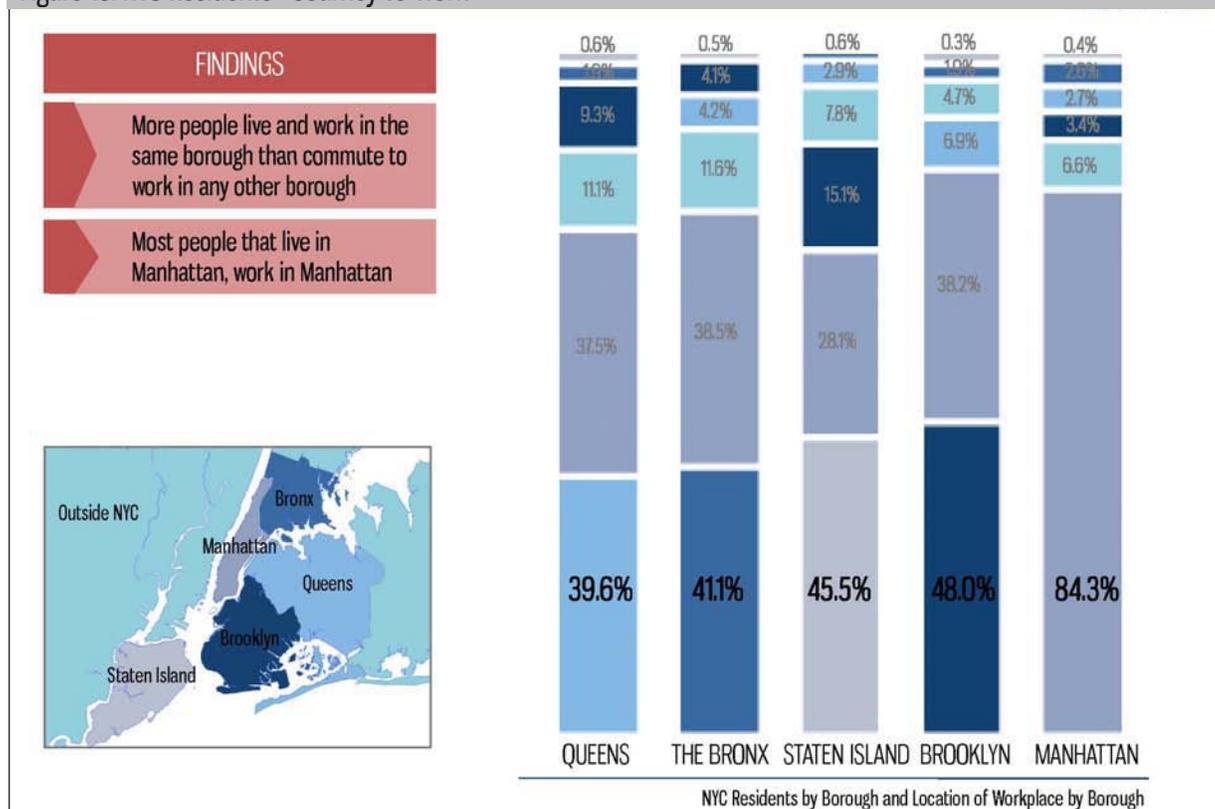
The majority of workers in NYC live and work in the same borough. Manhattan has the greatest percentage of workers remaining in the same borough for their place of work with 84.3%, while workers in Queens have the lowest percentage with only 40.0% remaining in Queens for their place of work. Table 1 lists where workers in NYC live and work by boroughs as determined by the U.S. Census 2000.

Table 1. NYC Workers: Work Trips by Boroughs

Origin: Borough of Residence	Destination: Borough of Work						Total
	The Bronx	Brooklyn	Queens	Staten Island	Manhattan	Outside NYC	
The Bronx	168,050 (41.0%)	16,772 (4.1%)	17,155 (4.2%)	2,049 (0.5%)	157,203 (38.5%)	47,591 (11.6%)	408,770 (100%)
Brooklyn	10,813 (1.2%)	417,954 (48.0%)	59,711 (6.8%)	8,832 (1.0%)	333,379 (38.2%)	41,203 (4.7%)	871,892 (100%)
Queens	17,497 (1.9%)	83,772 (9.3%)	357,681 (40.0%)	5,002 (0.5%)	339,011 (37.5%)	100,125 (11.0%)	903,088 (100%)
Staten Island	1,028 (0.6%)	28,173 (15.0%)	5,368 (2.9%)	84,629 (45.5%)	52,236 (28.0%)	14,503 (7.8%)	185,937 (100%)
Manhattan	20,218 (2.7%)	25,054 (3.4%)	19,691 (2.6%)	2,720 (0.4%)	628,095 (84.3%)	49,185 (6.6%)	744,963 (100%)
Total	217,606	571,725	459,606	103,232	1,509,924	252,607	3,114,700

Source: U.S. Census 2000

Figure 19. NYC Residents - Journey to Work



In addition, Table 1 shows for each borough the second largest percentages of workers who work in another borough are commuting to Manhattan. For example, 41.0% of Bronx workers remain in the Bronx, with 38.5% of Bronx workers commuting to Manhattan. However, when excluding Manhattan as a destination for borough to borough work trips, NYC workers who work outside their borough of residence work primarily in Brooklyn (47.5%) or Queens (31.5%), as shown on Table 2.

Table 2. NYC Workers with Borough to Borough Work Trips (Excluding Manhattan as a Work Destination)

Origin: Borough of Residence	Destination: Borough of Work				Total # of workers
	The Bronx	Brooklyn	Queens	Staten Island	
The Bronx		16,772	17,155	2,049	35,976
Brooklyn	10,813		59,711	8,832	79,356
Queens	17,497	83,772		5,002	106,271
Staten Island	1,028	28,173	5,368		34,569
Manhattan	20,218	25,054	19,691	2,720	67,683
Total	49,556 (15.3%)	153,771 (47.5%)	101,925 (31.5%)	18,603 (5.7%)	323,855 (100%)

Source: U.S. Census 2000

As shown in Table 2, Brooklyn and Queens are the largest destinations of borough to borough commute trips within NYC when excluding Manhattan. Furthermore, the concentration of work trips between Brooklyn and Queens is the highest between any two boroughs, excluding Manhattan. Table 3 lists the number of workers commuting from one borough to another borough, excluding Manhattan. The greatest flows of workers from one borough to another borough are from Queens to Brooklyn (83,722) and Brooklyn to Queens (59,711).

Table 3. Flow of Workers with Borough to Borough Work Trips (Excluding Manhattan)

Origin: Borough of Residence	Destination: Borough of Work	Total # of workers
Queens	Brooklyn	83,722
Brooklyn	Queens	59,711
Staten Island	Brooklyn	28,173
Queens	The Bronx	17,420
The Bronx	Queens	17,097
The Bronx	Brooklyn	16,728
Brooklyn	The Bronx	10,776
Brooklyn	Staten Island	8,832
Staten Island	Queens	5,368
Queens	Staten Island	5,002
The Bronx	Staten Island	2,049
Staten Island	The Bronx	1,028

Table 4 further diagrams the number of workers commuting from borough to borough within NYC. By excluding all origin and destinations outside of NYC, Table 4 shows the travel patterns from borough to borough within NYC. For example, the greatest origination by borough for workers traveling inbound into The Bronx is from Manhattan at 40.8%. A strong correlation of borough to borough travel between Brooklyn and Queens is shown, as 54.5% of workers traveling inbound to Brooklyn originate from Queens, and 58.6% of workers traveling inbound to Queens originate from Brooklyn.

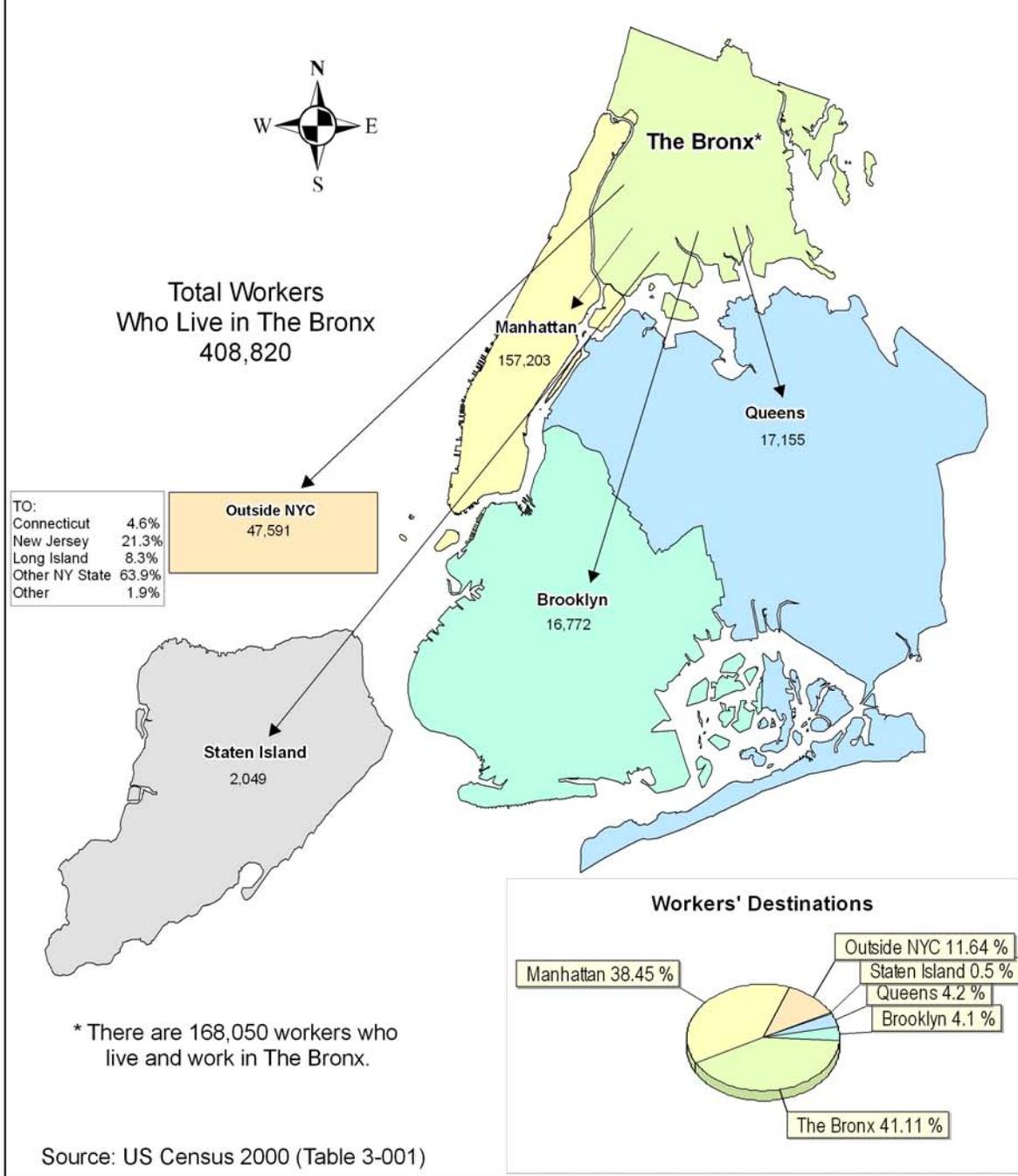
Table 4. Inbound Workers to Each Borough within NYC

Origin: Borough of Residence	Destination: Borough of Work				
	The Bronx	Brooklyn	Queens	Staten Island	Manhattan
The Bronx		16,772 (10.9%)	17,155 (16.8%)	2,049 (11.0%)	157,203 (17.8%)
Brooklyn	10,813 (21.8%)		59,711 (58.6%)	8,832 (47.5%)	333,379 (37.8%)
Queens	17,497 (35.3%)	83,772 (54.5%)		5,002 (26.9%)	339,011 (38.4%)
Staten Island	1,028 (2.1%)	28,173 (18.3%)	5,368 (5.3%)		52,236 (5.9%)
Manhattan	20,218 (40.8%)	25,054 (16.3%)	19,691 (19.3%)	2,720 (14.6%)	
Total	49,556 (100%)	153,771 (100%)	101,925 (100%)	18,603 (100%)	881,829 (100%)

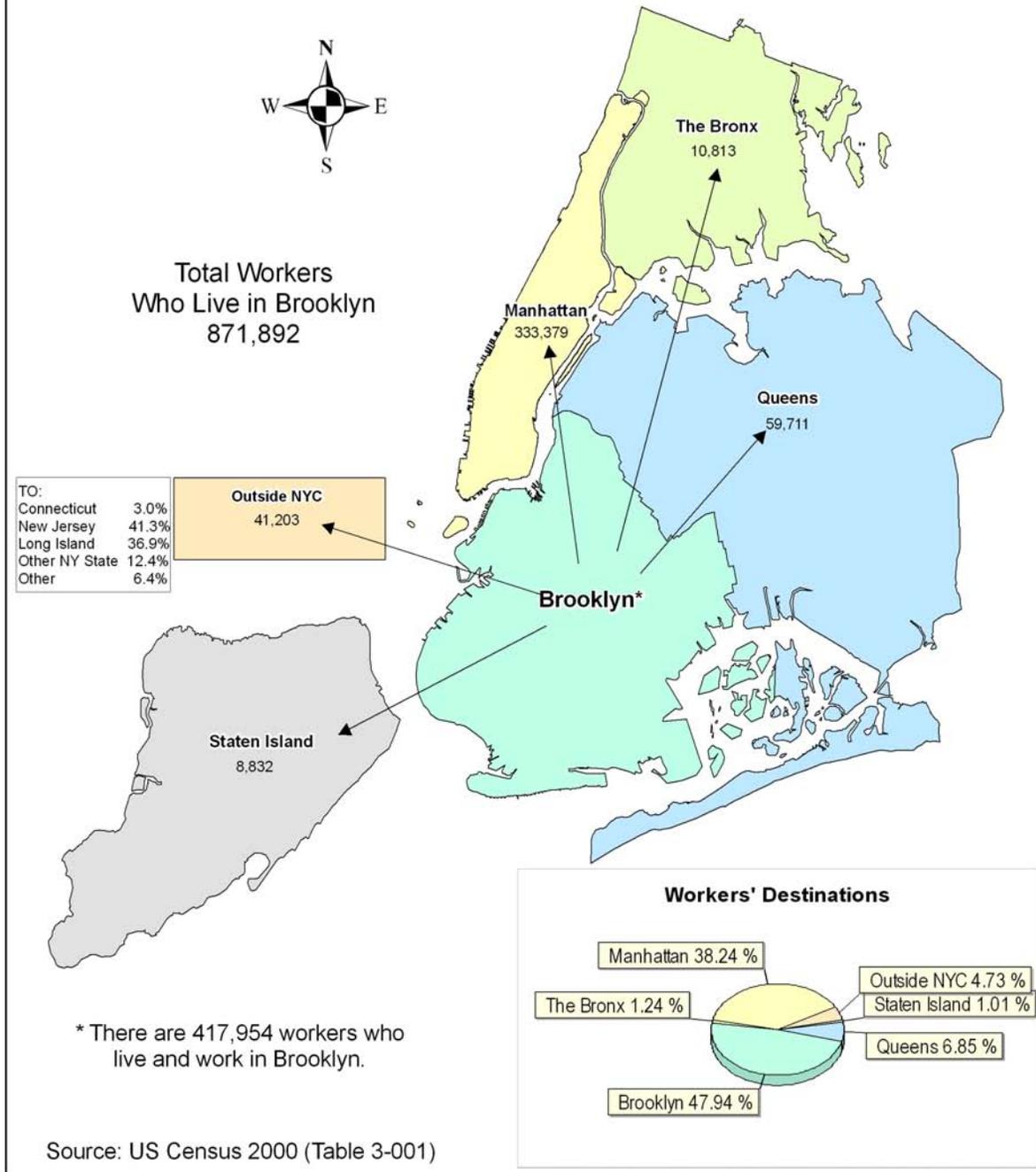
Maps 1-10 on the following pages correspond to Tables 1-4 displaying the number of workers who travel from borough to borough for work trips as determined by the U.S. Census 2000. Maps 1-5 show the work trips outbound from each borough of residence to each borough of work. Maps 6-10 show the work trips inbound to each borough of work from each borough of residence.

Map 1. Workers Who Live in The Bronx and Work Outside The Bronx

Workers Who Live In The Bronx and Work Outside The Bronx



Workers Who Live In Brooklyn and Work Outside Brooklyn



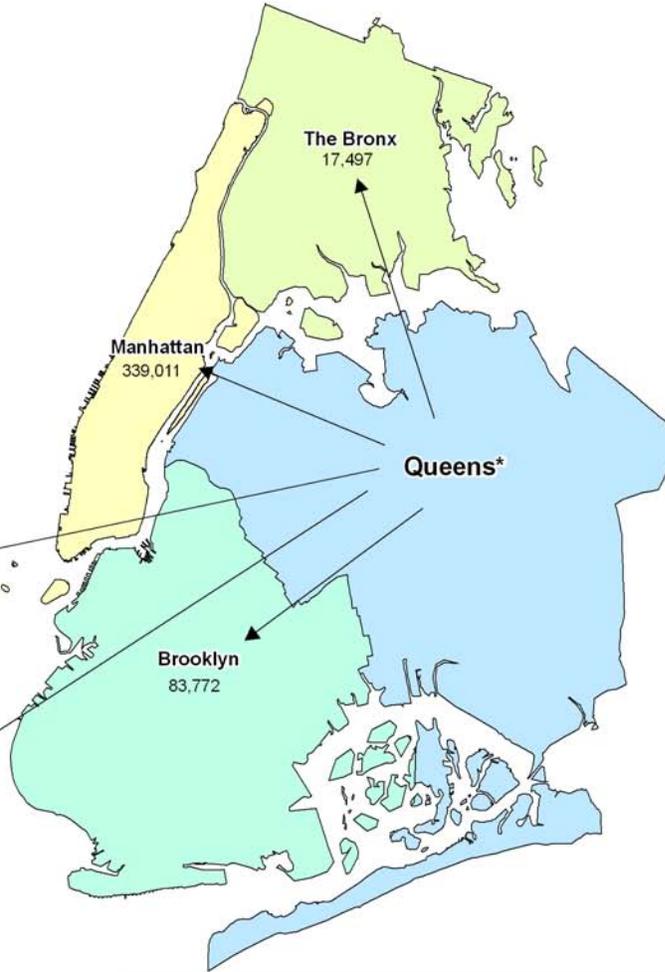
Workers Who Live In Queens and Work Outside Queens



Total Workers Who Live in Queens
903,088

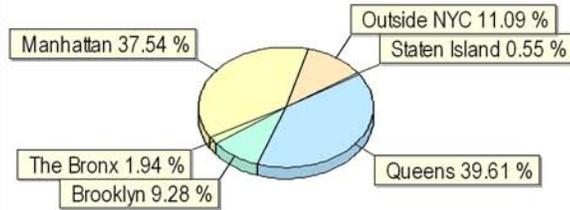
TO:	
Connecticut	2.2%
New Jersey	14.0%
Long Island	72.6%
Other NY State	9.0%
Other	2.2%

Outside NYC
100,125



* There are 357,681 workers who live and work in Queens.

Workers' Destinations

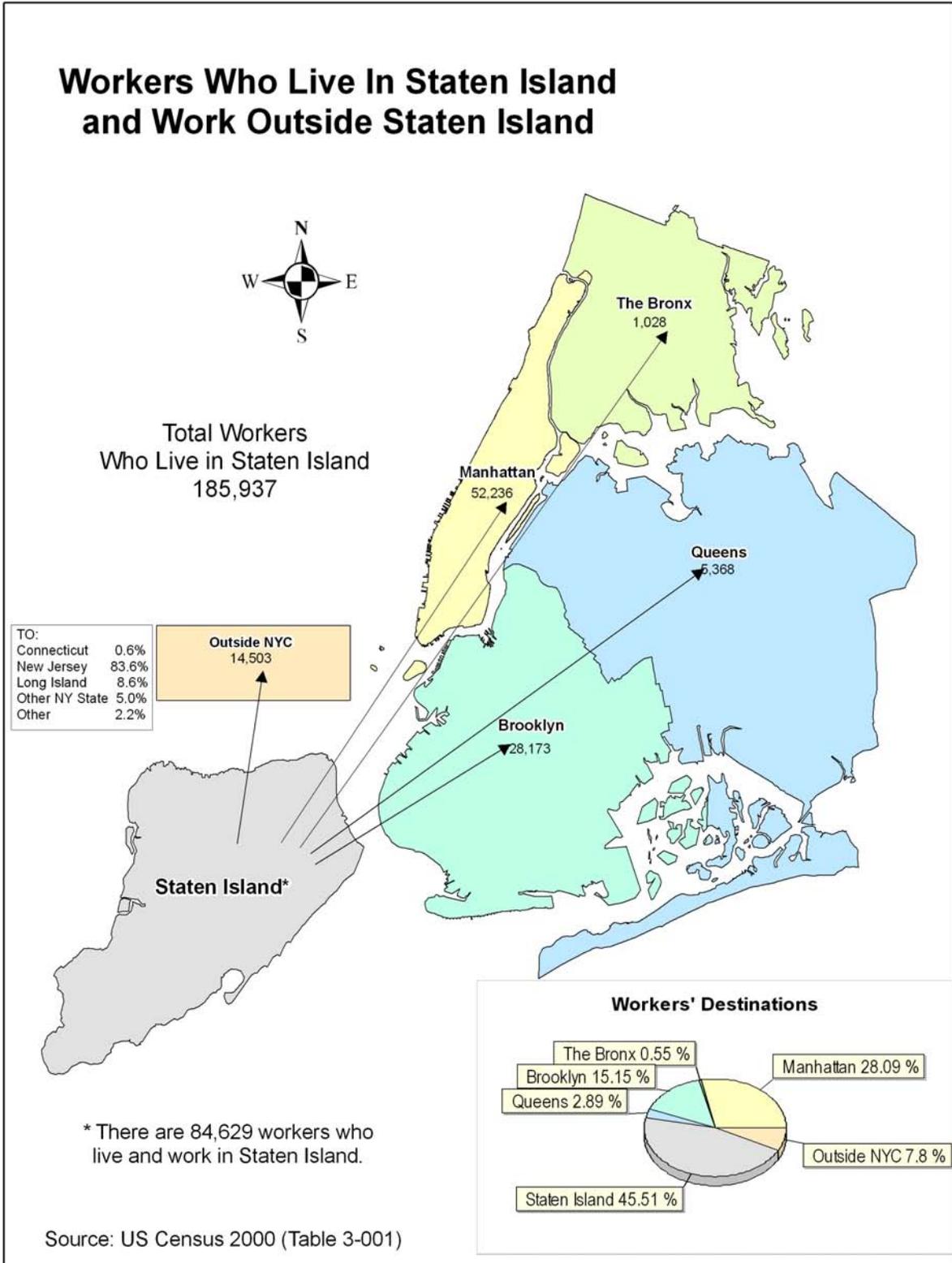


Source: US Census 2000 (Table 3-001)

Workers Who Live In Manhattan and Work Outside Manhattan



Map 5. Workers Who Live in Staten Island and Work Outside Staten Island



Map 6. Workers Who Live Outside The Bronx and Work in The Bronx

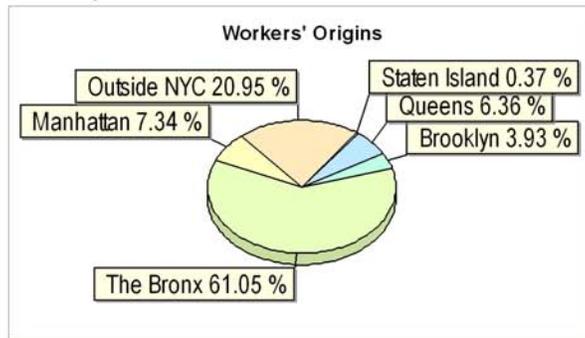
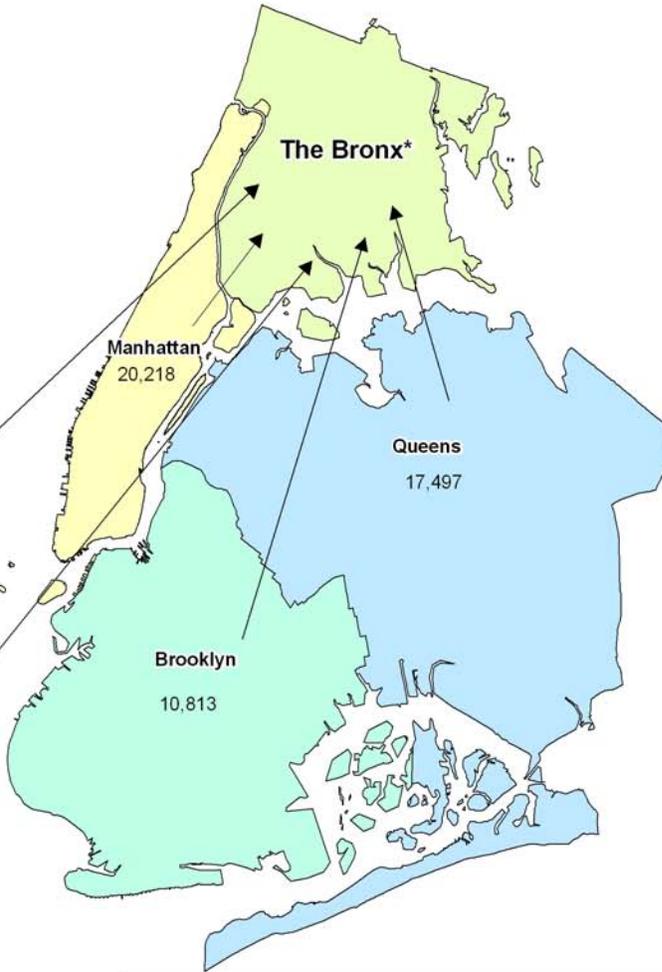
Workers Who Live Outside The Bronx and Work In The Bronx



Total Workers Who Work in The Bronx
275,271

FROM:	
Connecticut	2.5%
New Jersey	16.1%
Long Island	14.4%
Other NY State	65.2%
Other	1.8%

Outside NYC
57,665



* There are 168,050 workers who live and work in The Bronx.

Source: US Census 2000 (Table 3-001)

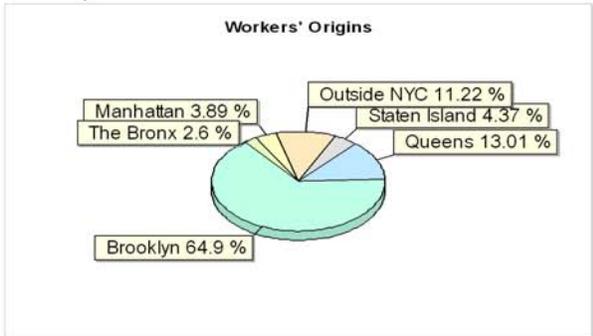
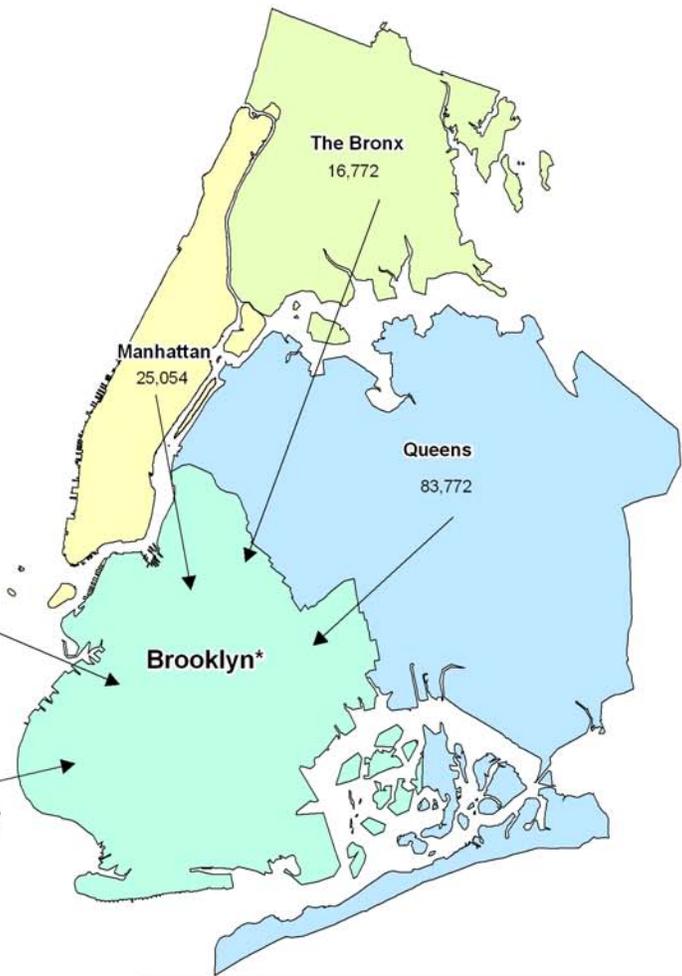
Workers Who Live Outside Brooklyn and Work In Brooklyn



Total Workers
Who work in Brooklyn
643,995

FROM:	
Connecticut	1.9%
New Jersey	29.1%
Long Island	52.7%
Other NY State	12.0%
Other	4.3%

Outside NYC
72,270



* There are 417,954 workers who live and work in Brooklyn.

Source: US Census 2000 (Table 3-001)

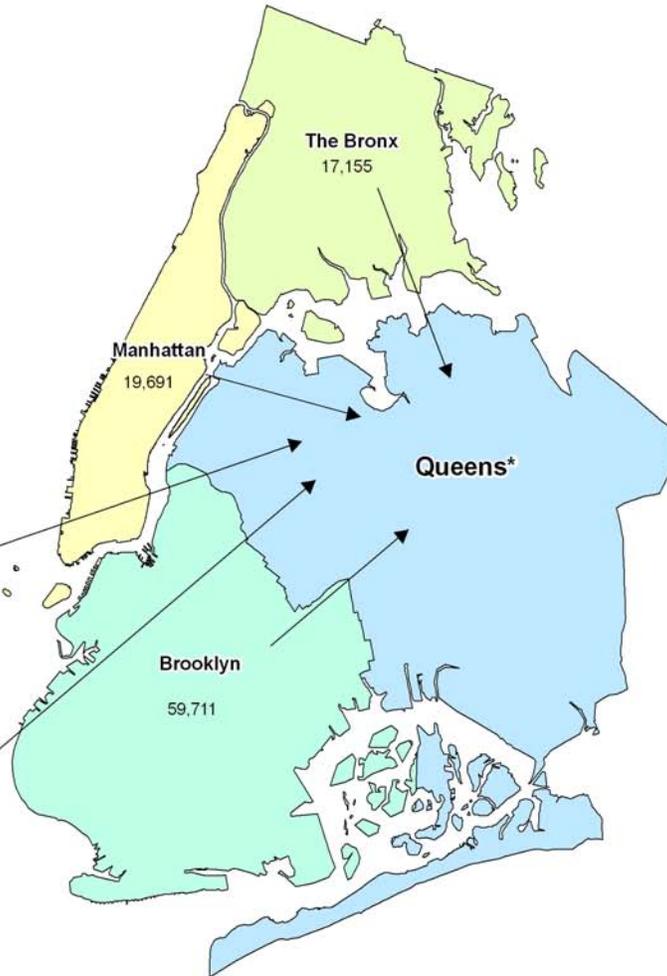
Workers Who Live Outside Queens and Work In Queens



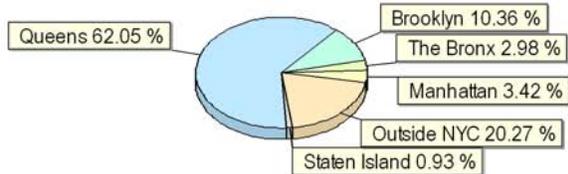
Total Workers Who Work in Queens
576,478

FROM:	
Connecticut	1.5%
New Jersey	10.4%
Long Island	74.3%
Other NY State	8.6%
Other	5.2%

Outside NYC
116,872



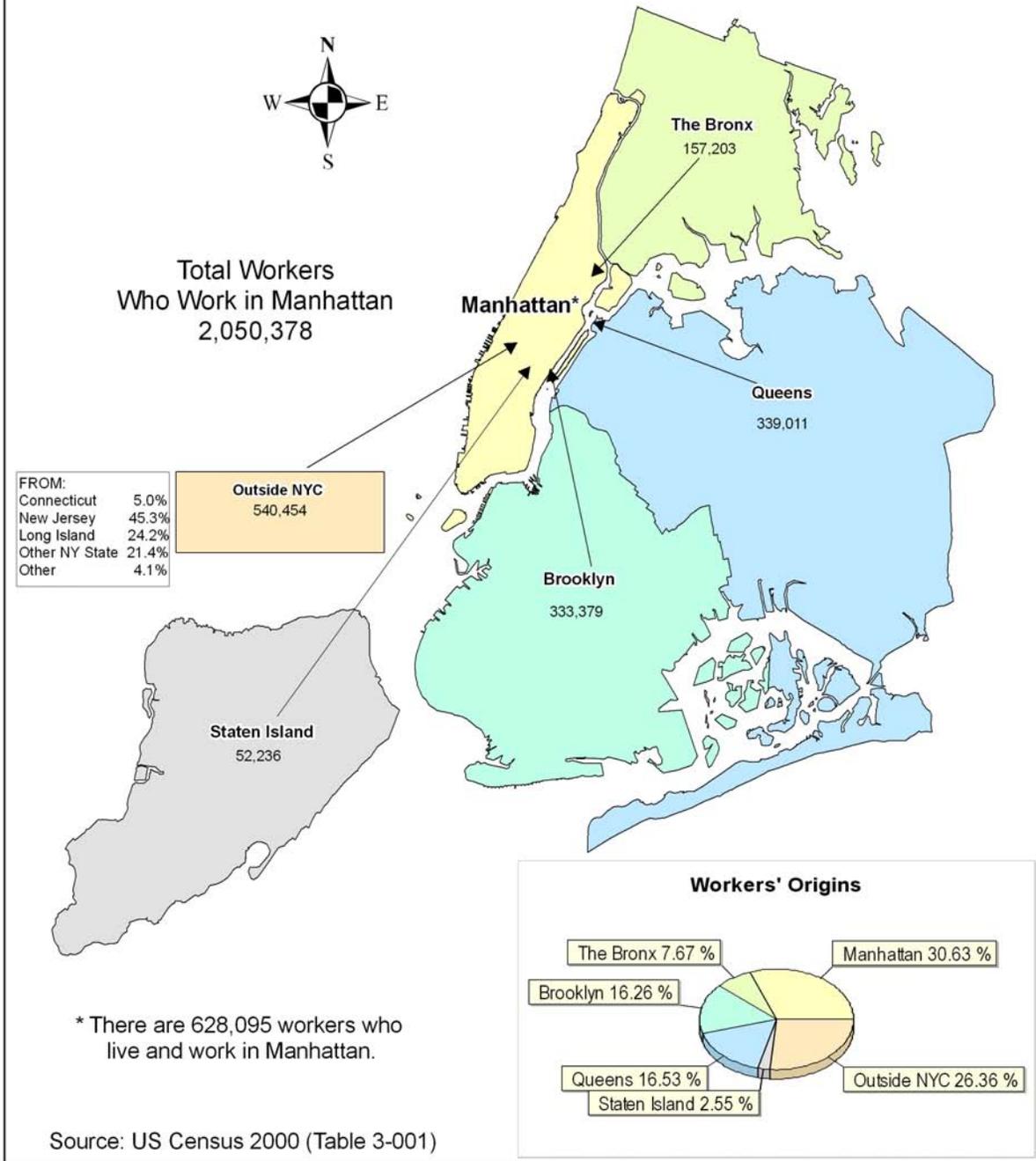
Workers' Origins



* There are 357,681 workers who live and work in Queens.

Source: US Census 2000 (Table 3-001)

Workers Who Live Outside Manhattan and Work In Manhattan



Workers Who Live Outside Staten Island and Work In Staten Island

