



Travel in the New York - New Jersey Metropolitan Area

A Summary of Results from the
1997/98 Regional Travel-Household
Interview Survey

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Prepared for:

**New York Metropolitan Transportation Council
North Jersey Transportation Planning Authority**

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RT-HIS Study conducted by:

**Parsons Brinckerhoff Quade & Douglas, Inc.
in association with NuStats International**

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PURPOSE AND METHODOLOGY

The 1997/98 Regional Travel-Household Interview Survey (RT-HIS) provides a rich source of information on travel behavior in the New York-New Jersey metropolitan area. Results will be used primarily in creating models to forecast travel demand for transportation planning in the metro area. This report summarizes findings for a general audience interested in how metropolitan area residents travel for work, school, leisure and other purposes.

Recognizing the regional nature of travel, the two transportation planning organizations in the metro area, the New York Metropolitan Transportation Council (NYMTC) and the North Jersey Transportation Planning Authority (NJTPA), worked co-operatively to co-sponsor the survey. (Cooperation was also obtained from Connecticut DOT.) The study area comprised 12 counties in downstate New York and the lower Hudson Valley, 14 counties in northern New Jersey, and 2 counties in southwestern Connecticut.

The survey was designed to produce reliable measures of weekday travel at the county level as well as for the N.Y.-N.J. metropolitan area as a whole. It also included a small sample of weekend trips in northern New Jersey to supplement similar data on weekend travel available for New York counties from the 1995 Nationwide Personal Transportation Survey.

Households were recruited at random by telephone for participation in the survey, and then mailed a diary form to fill out on a designated travel day. Travel, demographic, employment and other information was then retrieved in a follow-up telephone interview. Of those households initially contacted, 34% agreed to participate in the study. Of that group, 78% completed the data collection effort for an overall response rate of 26%.

Information was collected for a total of 90,764 trips from 27,369 individuals in 11,264 households during the period February 1997 through May 1998. Data are weighted based on several factors to reflect the metro area population.

Two definitions are important to understanding the information presented in this report:

- A **trip** is defined as a journey from one place to another for a particular purpose. A trip to work using commuter rail and subway is counted as one trip. The return trip home is counted as a separate trip.
- For trips involving more than one mode of travel, a hierarchy is used to define the “**main mode**” for each trip. A trip by subway and local bus is classified as a subway trip. A trip using commuter rail and the subway is counted as a commuter rail trip. A trip involving a transit mode (commuter rail, subway, bus, etc.) and the auto is classified according to the transit mode. Trips involving walking and any other mode are classified by the other mode. All mode data in this report reflect this scheme of “main mode” classifications.

In addition to this summary, other reports are available containing more detailed data. These include the *General Final Report* and *Comparative Analysis: Weekday and Weekend Travel*. These reports are available online at www.nymtc.org and www.njtpa.org. In addition, a user’s manual and report on methodology are available.

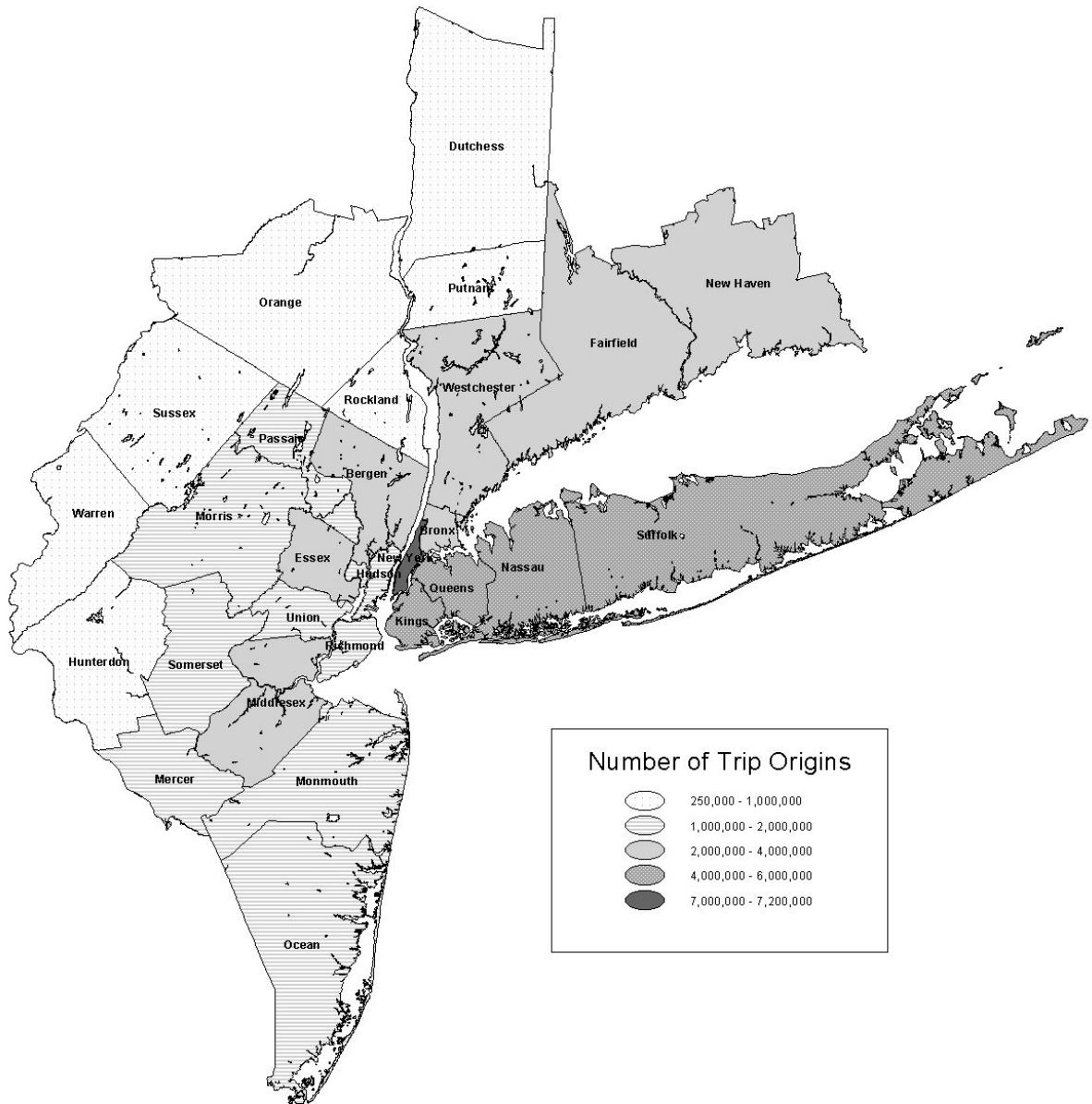
This summary was compiled by Schaller Consulting under contract to NYMTC. The prime consultant for the survey and forecasting project is Parsons Brinckerhoff. The survey task leader was NuStats International.

HIGHLIGHTS OF THE HOUSEHOLD INTERVIEW SURVEY

Travel acts as a ligament, connecting the different parts of each person's day and the different regions of a metropolitan area. Results from the Regional Travel - Household Interview Survey show how residents of the New York-New Jersey metropolitan area live, work, and travel:

- The 19 million residents of the New York-New Jersey metropolitan area made 59.6 million trips on an average weekday in 1997-98, or 3.2 trips per person. Residents averaged slightly less travel on an average Saturday or Sunday, 57.6 million trips, or 3.1 trips per person.
- More than three in four weekday trips are made locally within a single county. Inter-county travel primarily involves a neighboring county.
- Three in ten weekday trips involve the workplace. About 18% of trips are between home and work. As work-related trips tend to be longer than other trips, they constitute 40% of the total time spent traveling on weekdays.
- Social, recreational, school, personal business and shopping trips beginning or ending at home account for 43% of all trips. Close to another fifth of trips start and end at places other than home or work.
- Transit ridership is concentrated in New York City and its neighboring New York and New Jersey counties. Trips to and from Manhattan are mostly made using transit—63% for trips to Manhattan and 55% for trips from Manhattan. These shares are even higher during the peak weekday travel periods. In the high-density urban core, walking joins auto and transit as a frequent means of travel.
- Most suburban trips are made by car—about 85%. Overall, 68% of all weekday trips are auto trips; however, this is significantly lower than the national average of 86% due to the extensive public transit system serving the region.
- Manhattan attracts a significant number of trips from the city's outer boroughs and its immediate neighbors— Hudson, Westchester, and Nassau counties. Elsewhere in the metro area, fewer than one in 20 travelers are destined to Manhattan.
- Household composition, combined with gender and employment status, greatly influences how much people travel. Women who work part-time and have two or more children make more trips than nearly any other demographic group.

Map 1. Trip origins by county of residence, 1997/98, average weekday



TRAVEL IN THE METRO AREA

The 19 million residents of the New York-New Jersey metropolitan area made 59.6 million trips on an average weekday in 1997-98. Residents averaged slightly less travel on the weekend, 57.6 million trips on an average Saturday or Sunday.

The largest volume of trips are concentrated in the metro area's core counties. More trips begin in Manhattan than any other single county in the region, reflecting Manhattan's high population and employment levels plus its entertainment and shopping attractions. In New York State, Brooklyn, Suffolk, Queens and Nassau counties are also peak travel areas as are Bergen, Hudson and Essex counties in New Jersey. (See Map 1.)

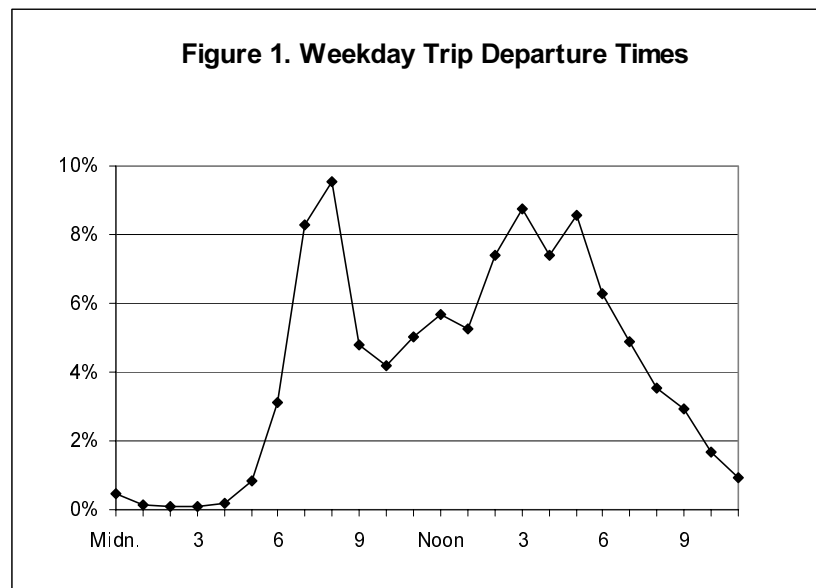
Weekday travel is about twice as heavy during the morning and evening peaks compared with midday and the early evening. (See Figure 1.)

Most weekday trips, more than three in four, are made locally within a single county. Manhattan's pull varies – it is felt most strongly in New York City's outer boroughs and in Hudson, Nassau and Westchester counties.

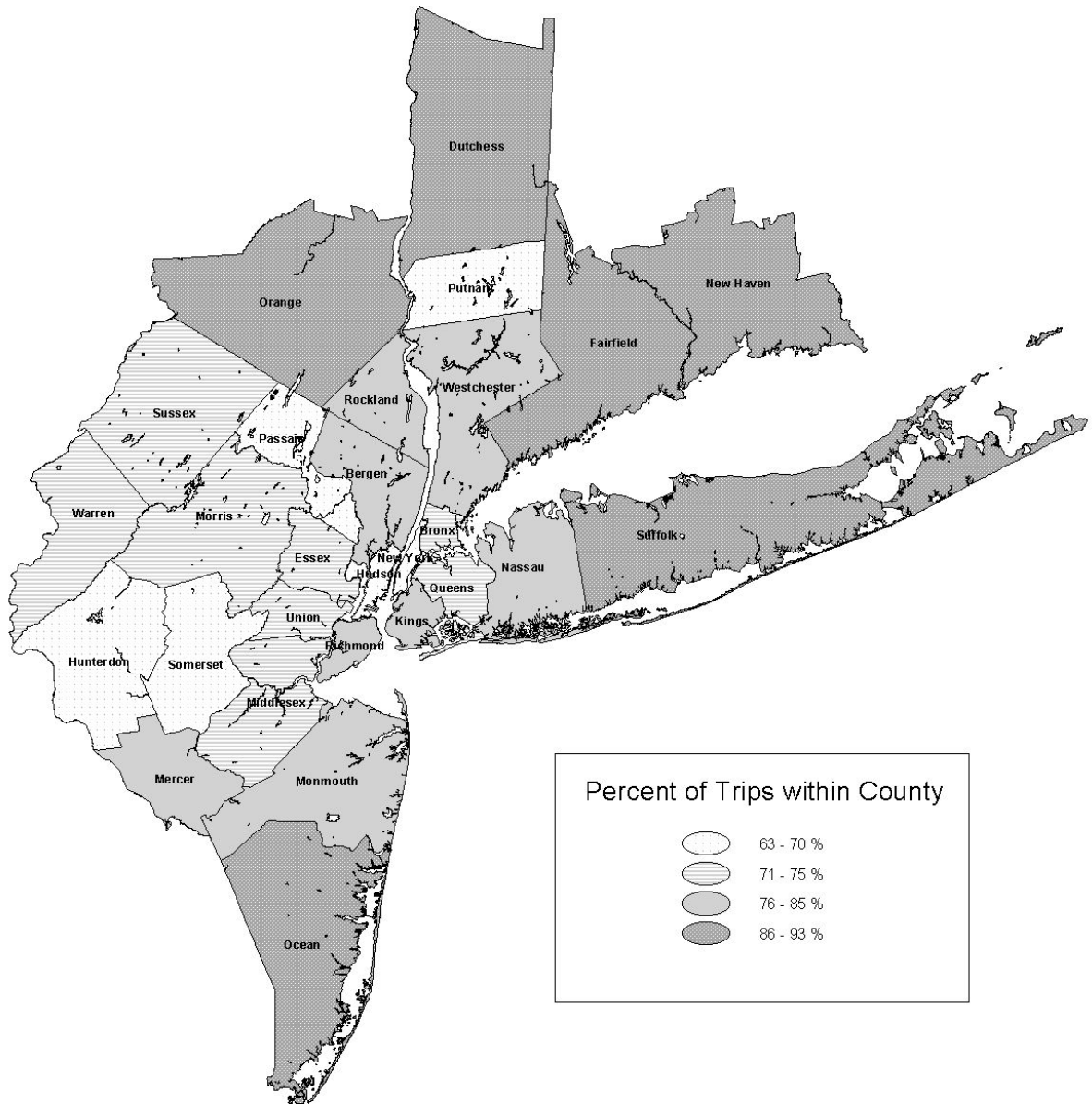
Aside from Manhattan, there are no major centers that attract people from wide portions of the metro area. Northern New Jersey centers such as Newark or the Hudson River waterfront are significant regional destinations, but have shorter reach than Manhattan.

Travel tends to remain more local in the counties farther from Manhattan, in areas with fewer jobs or leisure activities that attract people from outside the county. Many New Jersey counties, however, experience relatively low rates of within-county travel. (See Map 2 on next page.) Most inter-county travel involves a neighboring county, whether the trip originates in one of New York City's outer boroughs, an inner-ring suburb or other counties in the metro area.

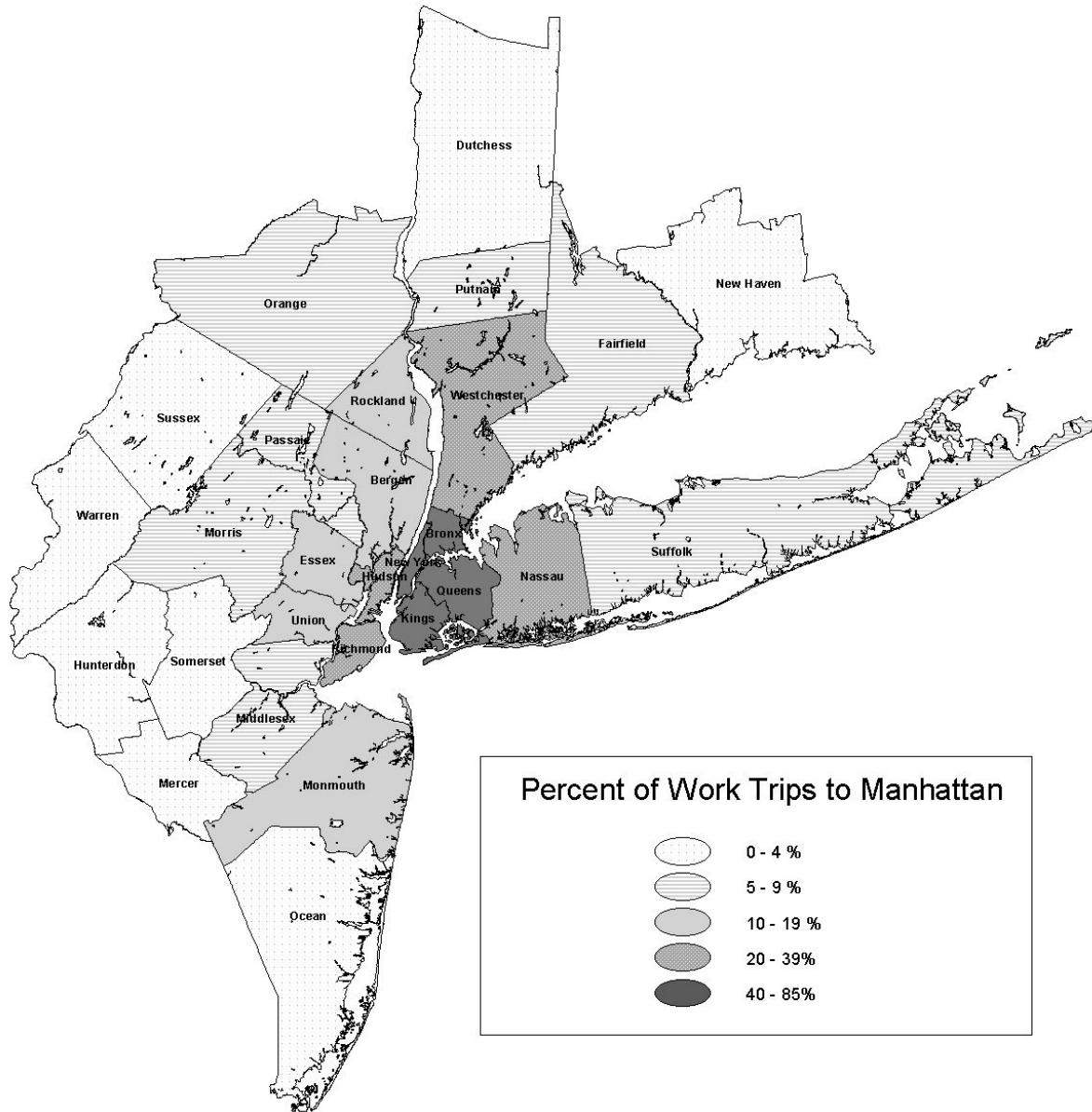
Metro area residents are more likely to travel to Manhattan for work purposes than for leisure, shopping or entertainment. Beyond the older suburbs of New York and New Jersey, however, few residents commute into Manhattan. (See Map 3.)



Map 2. Trips within the county, by county of origin



Map 3. Work trips destined for Manhattan, by county of residence



REASONS FOR TRAVEL

Overall, three in ten of all weekday trips involve the workplace. The majority of these are direct trips between home and work, but a substantial portion are not. (See Table 1.) During the weekend, the number of work trips drops by two-thirds.

Just over one-half of all trips are between home and other destinations. These trips cover the full range of social, recreational, school, personal business and shopping purposes.

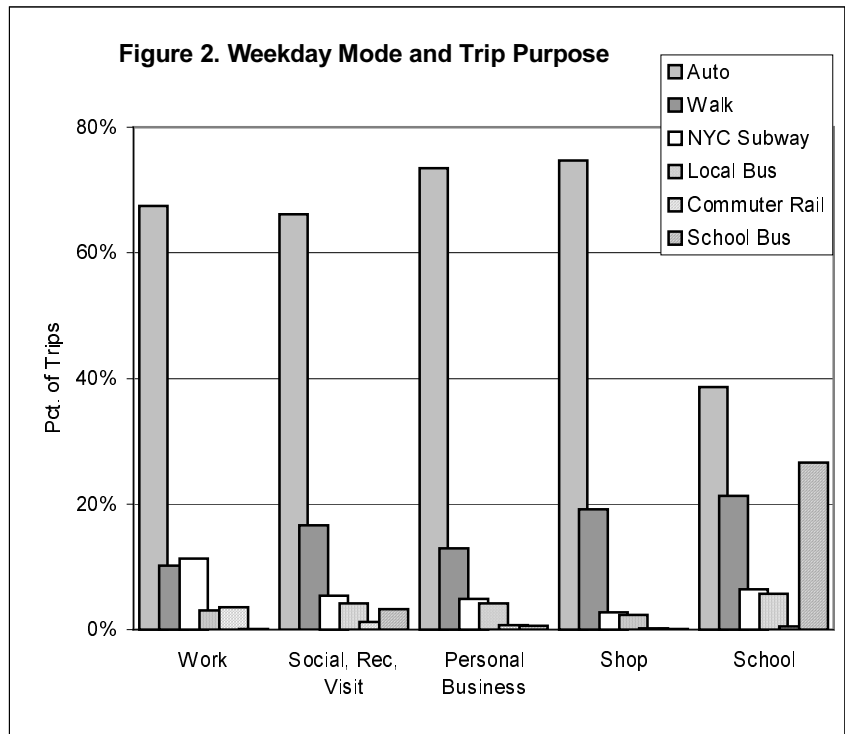
Nearly a fifth of all trips start and end at places other than home or work, e.g., from shopping to a social activity.

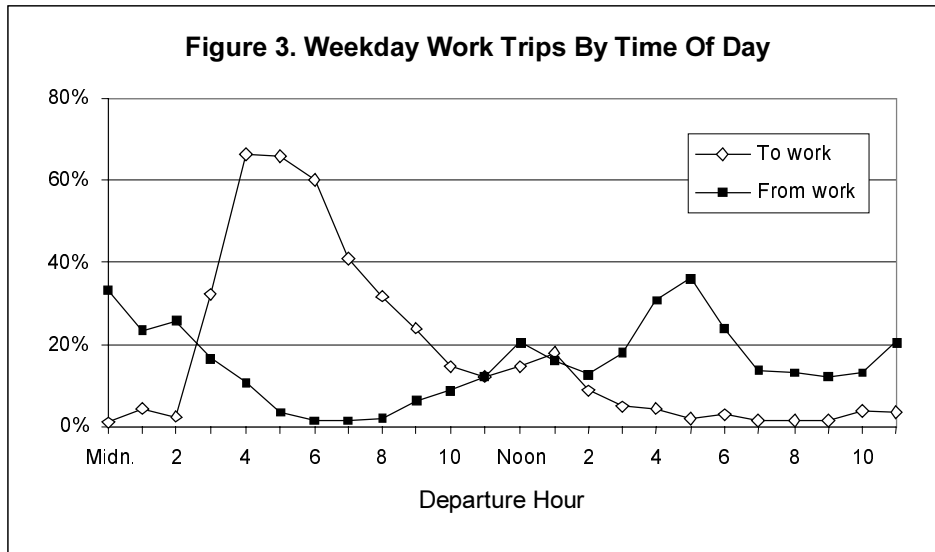
To varying degrees around the metro area, most trip purposes are served primarily by auto. (See Figure 2.) However, there are some trip purposes that rely heavily on public transit, including work trips into Manhattan, and trips in general made by residents of New York City, where auto ownership is relatively low. Schools throughout the area are frequently reached by school bus or walking.

Work	29.7%
Between home & work	18.1%
Work-related trips	2.0%
Between work & non-work-related destinations	9.6%
Other trips to or from home	52.6%
Social/recreational destinations	14.1%
School	10.0%
Personal business	9.3%
Shopping	9.2%
Serving passengers	8.2%
Other destinations	1.8%
Other non-home / non-work	17.5%

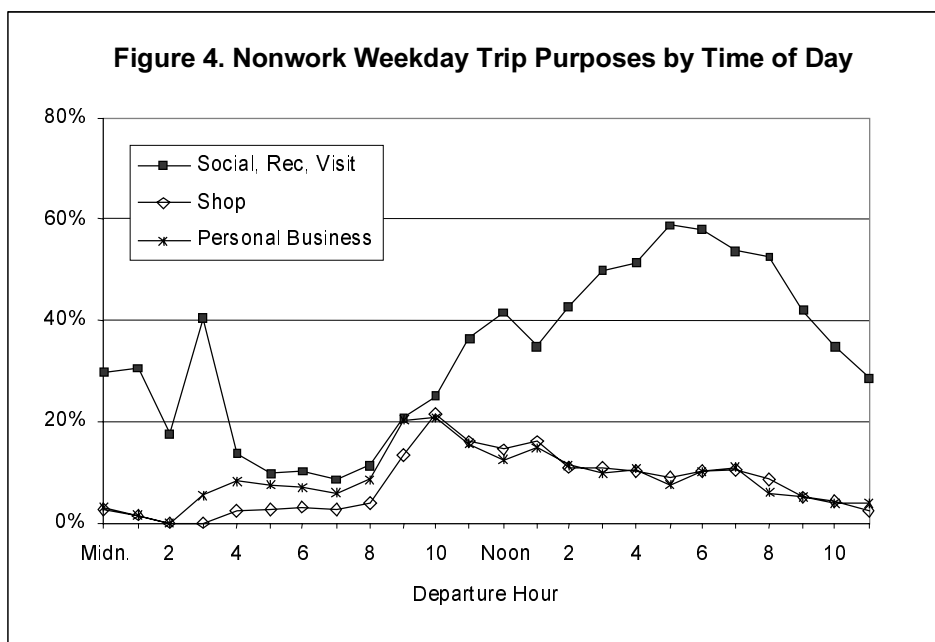
- Walking is also somewhat more prevalent for social/recreational and shopping trips (about 18% are made by foot) than work trips (10%).
- Subway and commuter rail are used more for work trips than other types of trips.

Work trips are concentrated during the morning and afternoon peak hours. However, even during peak travel times, more trips are for non-work than for work purposes. (See Figure 3.)





Social, recreational and visiting trips are most prevalent in the late afternoon and evening. Shopping and personal business trips are somewhat more common during the middle of the day. (See Figure 4.)



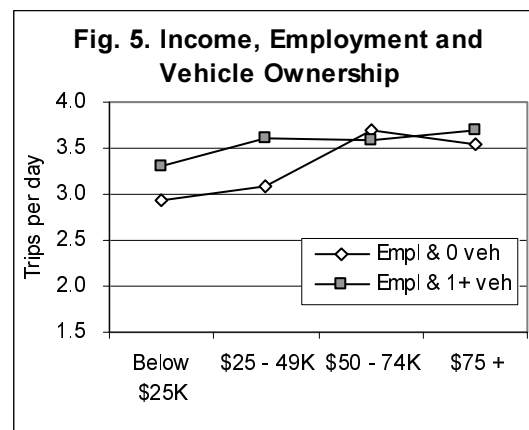
In addition to there being less work travel on weekends, other types of trips increase substantially on Saturdays and Sundays. In particular, social and recreational trips nearly double, and shopping trips are one and a half times as frequent as during the week.

TRIP RATES

Residents of the metro area average 3.2 trips per day on weekdays and 3.1 trips per day on Saturday and Sunday. Trip rates are lower in the outer boroughs of New York City and Hudson and Essex counties than in the surrounding counties, where one finds some of the highest trip rates in the metro area. (See Map 4.)

Trip levels are affected by a variety of factors. Chief “drivers” of trip-making are employment status and household composition. Employed persons tend to travel more than unemployed persons, if for no other reason than to travel to work. Children also generate travel, with the result that parents who are not employed show relatively high levels of travel. Income and car ownership also affect travel frequency.

- Employed persons average 3.6 trips per day on weekdays compared with 2.9 trips per weekday by adults who are not employed.
- Persons with household incomes over \$75,000 average 3.6 trips per weekday compared with 2.6 for persons with household incomes under \$25,000.
- Car owners average 3.6 trips vs. 2.6 for those not owning cars.

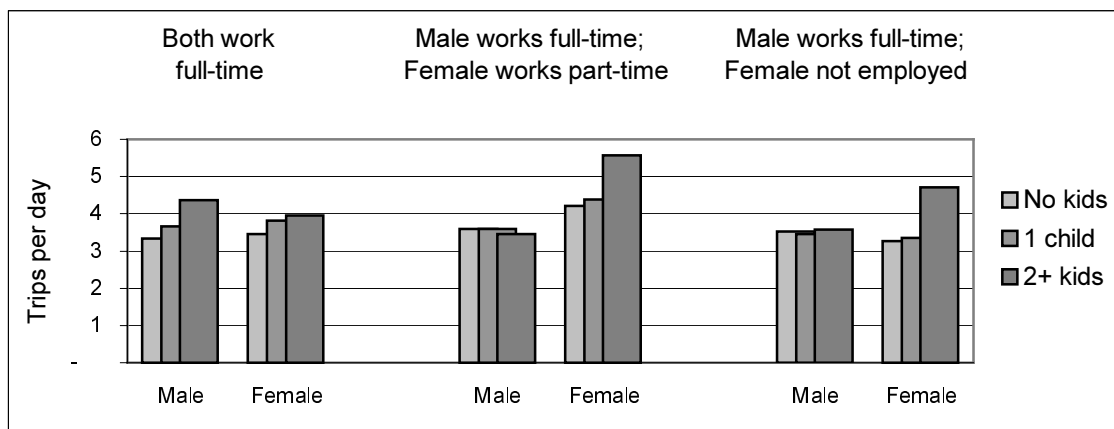


Employment, income, and to a lesser extent car ownership tend to rise in tandem. Thus, employed car owners have about the same trip rates for all income groups over \$25,000. Similar trip rates are shown by employed persons who do not own a car but have incomes over \$50,000.

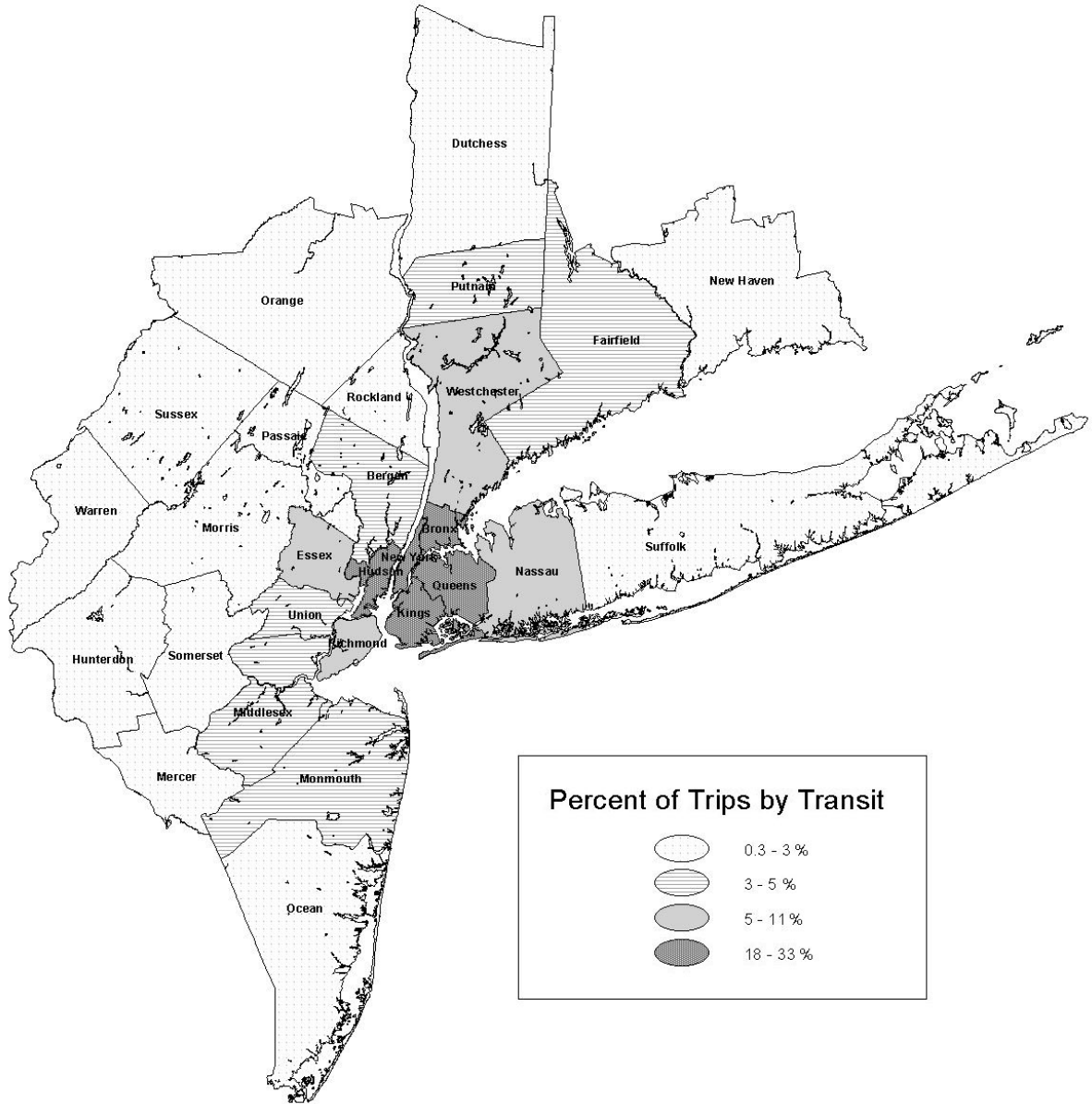
(See Figure 5.) Lower trip rates in New York City may be partially explained by the city’s lower rates of employment and car ownership.

Household composition plays a large role in determining how much people travel. The presence of children in the household produces higher trip rates among women, whether or not they are employed. Children in the household produces higher trip rates among men—but only if both spouses are employed full-time. (See Figure 6.)

Fig. 6. Trip rates by Household Composition



Map 5. Trips using transit, by county of residence



MEANS OF TRAVEL

The New York-New Jersey metro area offers residents more ways to travel than virtually anywhere else in the nation. (See Table 2.) Travel modes vary considerably from place to place, depending also on the purpose of trips. Private auto is the mode of choice for two out of three trips overall. Residents also walk frequently, for entire trips or portions of trips.

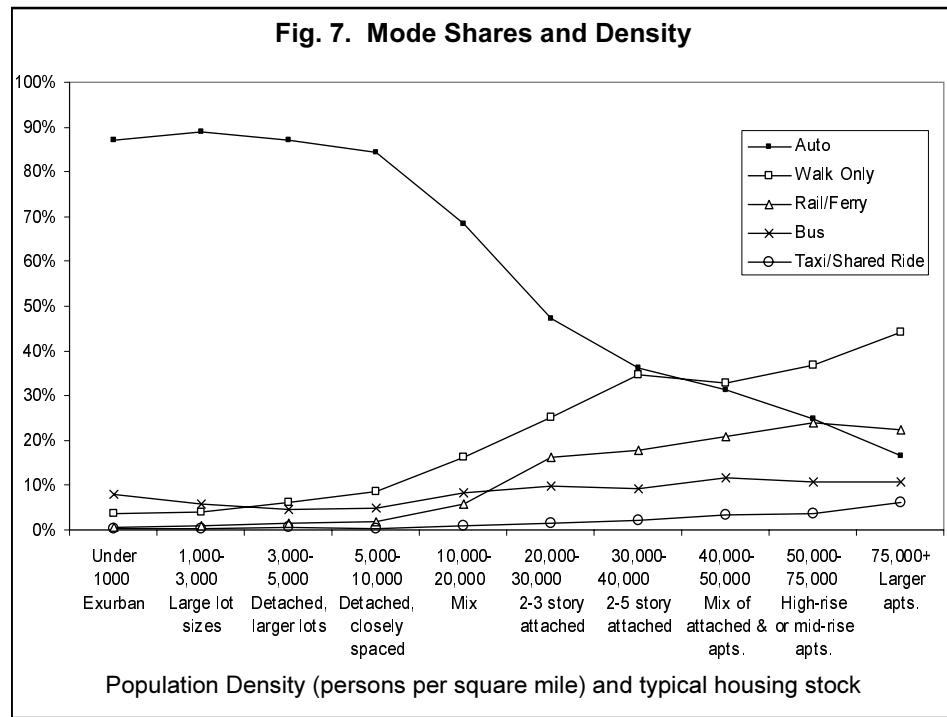
Public transit serves 11% of all metro area weekday trips. For travel to the Manhattan, transit serves up to 63% of weekday trips. Upwards of 75% of work trips to Manhattan from elsewhere are taken using transit. For trips from Manhattan to other areas, transit is the primary mode – 55% – with only 39% using auto.

Generally, transit use depends on the density of population and employment in the area. (See Map 5 and Figure 7.)

- In dense urban neighborhoods like Manhattan, one-third of all residents’ trips are by transit, cars are used for less than 20% of trips, and walking trips exceed 40%.
- Where transit services are provided in high density areas of 30,000 to 50,000 persons per square mile (e.g., with mid-sized apartment buildings and attached housing, such as Brooklyn Heights, Hoboken, and parts of the Bronx), transit use exceeds auto use.
- In 10,000 to 30,000 persons per square mile areas with multi-family and attached houses, like Queens and Hudson County, transit use drops to 22% and auto use grows to about one-half.
- In exurban and large-lot suburban areas, like Hunterdon Monmouth, Suffolk, and Putnam counties, auto shares are over 80%, about 5% of trips use transit, and 6% are walk-only trips.

Table 2. Metro Area Travel Options

- Private automobile, van, sport utility
- Walking, wheelchair
- NYC Subway, Staten Island Railway
- Local bus
- School bus
- Commuter rail (LIRR, MetroNorth, NJ Transit)
- Taxi, van for hire, car service, jitney
- Express bus
- Bicycle
- PATH train
- Ferry or tram
- Airport line, shuttle
- Light rail (Newark City Subway)
- Amtrak, Greyhound, airline, helicopter
- Bicycle, skates
- Motorcycle, moped



DISTANCE AND DURATION OF TRAVEL

Overall, metro area travelers each spend an average of 77 minutes per day traveling. The average trip in the metropolitan area is 7.1 miles long and takes 24 minutes.

Trip duration varies considerably according to the purpose of the trip, its location, and the means of travel used. Weekday work-related trips are 60% longer in time than non-work trips, and they are nearly twice as far. (See Table 3.)

Shopping trips tend to be shorter than other types of trips. Among the shortest trips are walking trips for shopping, school and work purposes. The commute to work by commuter rail and subway are relatively long trips.

Time and distance spent traveling also depends on lifestyle and age. Average trip durations increase as people enter adulthood, and then decrease with age. Persons employed full-time spend 67% of their travel time in work-related travel; part-time employed persons spend 42% of their travel time in work-related travel. Students and unemployed adults travel about one fourth less than employed adults. (See Table 4.)

Table 3. Average Time, Estimated Distance and Speed by Weekday Trip Purpose and by Age

	Travel Time	Distance	Speed
Work Trip	33 min.	10.9 miles	20 mph
Non-Work Trips	20.3 min.	5.6 miles	16.5 mph
All Weekday Trips	23.9 min.	7.1 miles	17.8 mph
	Travel Time	Distance	Speed
Under 18	18.6 min.	4.7 miles	15.3 mph
18 to 45	26.1 min.	8.1 miles	18.7 mph
46 to 64	24.9 min.	8.0 miles	19.4 mph
65 and over	21.6 min.	6.3 miles	17.4 mph

Table 4. Average Total Distance Traveled on a Weekday, by Employment Status

	Miles Traveled
Employed Full-time	34.9 miles
Employed Part-time	32.4 miles
Student	25.5 miles
Unemployed	24.4 miles
All Adults*	27.3 miles

* Age 18 and over

Appendix. County Data for Maps*

	<u>Map 1</u>	<u>Map 2</u>	<u>Map 3</u>	<u>Map 4</u>	<u>Map 5</u>
	Trip origins, average weekday	Trips within county, by county of origin	Work trips destined** for Man- hattan, by county of residence	Daily trips per person, by county of residence	Trips using transit, by county of residence
New York					
Manhattan	7,198,000	69%	85%	3.33	32.1%
Queens	4,357,000	72%	52%	2.80	24.7%
Bronx	2,575,000	73%	40%	2.67	28.0%
Brooklyn	5,048,000	80%	46%	2.51	28.1%
Staten Island	1,044,000	80%	28%	3.08	10.8%
Nassau	4,240,000	79%	23%	3.50	5.6%
Suffolk	4,450,000	91%	8%	3.49	2.1%
Westchester	2,969,000	84%	23%	3.61	6.5%
Rockland	793,000	81%	11%	3.31	2.2%
Putnam	256,000	63%	8%	3.51	3.7%
Orange	933,000	87%	6%	3.40	1.9%
Dutchess	801,000	88%	2%	3.38	1.6%
New Jersey					
Bergen	3,056,000	79%	18%	3.69	3.4%
Passaic	1,269,000	70%	6%	3.25	2.9%
Hudson	1,272,000	70%	29%	2.82	18.0%
Essex	2,121,000	71%	11%	2.97	8.4%
Union	1,592,000	73%	11%	3.50	4.8%
Morris	1,666,000	71%	5%	3.55	1.5%
Somerset	1,018,000	70%	3%	3.73	1.0%
Middlesex	2,103,000	73%	9%	3.25	3.8%
Monmouth	1,960,000	84%	10%	3.66	3.1%
Ocean	1,279,000	87%	1%	2.90	0.9%
Hunterdon	363,000	70%	2%	3.35	0.8%
Warren	307,000	73%	2%	3.30	0.4%
Sussex	394,000	73%	1%	3.35	0.4%
Mercer	1,051,000	80%	4%	3.58	2.4%
Connecticut					
Fairfield	2,862,000	88%	7%	3.44	3.7%
New Haven	2,291,000	93%	0%	3.31	0.4%

* These general findings should be examined carefully for use in other contexts. Use of these statistics must account for sampling error (at least +/-5%) and the precise definitions of information collected. Please contact NYMTC or NJTPA for further information.

** Trips made by county residents to work in Manhattan. Statistics for travel directly between home and work in Manhattan may vary.

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The New York Metropolitan Transportation Council is the Metropolitan Planning Organization for New York City and five suburban New York counties. The North Jersey Transportation Planning Authority is the Metropolitan Planning Organization for the 13-county northern New Jersey region.