

Access to Transportation on Long Island

Technical Report

Prepared by:



In association with:

Abrams-Cherwony & Associates
Eng-Wong, Taub & Associates
Howard/Stein-Hudson Associates

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1.0 Introduction

Suburban Long Island's transportation system is a vast amalgam of facilities, systems, and services which together provide for the mobility needs of over 3 million residents. The transportation system is called upon to provide mobility over a large spatial area of over 1,199 square miles featuring settlement patterns which range from moderate density suburban areas to lower density rural areas.

In light of this, the New York Metropolitan Transportation Council (NYMTC), on behalf of its member agencies on Long Island, undertook the development of a definition of "adequate access to transportation" for Long Island to guide public policy decisions, and the formulation of guidelines to inform policy makers as they make decisions about transportation improvements in the future. Based on extensive research and outreach efforts to representatives of stakeholder groups and the public (which are documented here and in a separate public involvement report), a White Paper was developed to summarize key guidelines and suggest roles for public entities and partner organizations from other sectors in the provision of transportation services and facilities for those who live and work on Long Island.

Long Island residents need transportation options in order to go to work or school, shop and conduct personal business, access services, take advantage of recreational opportunities, and participate in other community activities. Today the automobile is the dominant mode of travel in suburban Long Island. Despite the fact that Nassau and Suffolk counties are served by an extensive network of roadways and fixed route rail and bus services, as well as demand response transportation services, some groups of Long Islanders experience limitations with regard to their mobility options. These individuals do not have access to a car, are unable to use the rail and bus systems (because of a disability, the lack of a means of traveling to a rail station or bus stop, income limitations, or the need to travel when fixed route services are not in operation), and have no demand responsive option available to them (such services are often limited to specific geographic areas, eligible riders, and/or eligible trip types).

In today's climate of constrained public resources and numerous competing demands for those resources, without successful coordination, it is unreasonable to expect that the entities that fund and provide transportation facilities and services in Nassau and Suffolk counties will be able to address all mobility needs completely. Not all geographic areas, individuals and trips can be served equally on the roadway network by traditional rail and bus services or by public demand response services. Moreover, other public sector agencies, for-profit and not-for-profit organizations, and individual travelers themselves also have roles to play in the provision and use of mobility options.

This report summarizes the results of the research and data analysis that was conducted for the project and supports the White Paper. Section 2 contains a description of the relevant demographic characteristics of Nassau and Suffolk Counties, major travel generators on Long Island, and the transportation services that are currently available. Section 3 provides an overview of unmet transportation needs and service gaps, based on an analysis of information about services, findings from previous transportation studies, and comments from agency representatives and members of the public. Section 4 outlines obligations for providing transportation services, discusses transit industry standards and guidelines and access policies in other areas, and presents other information that is pertinent to the definition of adequate access to transportation on Long Island. Section 5 suggests potential approaches for maintaining or enhancing adequate access to transportation on Long Island.

Access to Transportation on Long Island

Appendix A contains a table showing demographic characteristics of Long Island communities. Appendix B lists school transportation providers in Nassau and Suffolk Counties. Appendix C includes lists of trip generators and attractors on Long Island. Appendices D through F present the detailed results of a literature review and case study analysis. Appendix G contains sample community walkability and bikeability checklists.

2.0 Existing Conditions

This section of the report reviews the existing socio-economic and demographic conditions in Nassau and Suffolk Counties on Long Island, as well as the various public transportation services provided in the study area. In addition, locations that generate or attract traffic are also reviewed. When taken together, these types of data allow for an examination of the adequacy of the public transportation services being provided and can help highlight any gaps in service or mobility needs that are not being met.

2.1 *Demographic Analysis*

An analysis of the demographic characteristics of the study area can help illustrate what the need and propensity to utilize the existing public transportation resources are on Long Island. As can be seen in the table presented in Appendix A, various demographic characteristics were compiled for each community in Nassau and Suffolk Counties. These characteristics include the total population and the total number of households as well as the number and percentage of senior citizens, people with disabilities, households with annual incomes of less than \$25,000 and people between the ages of 15 and 19.

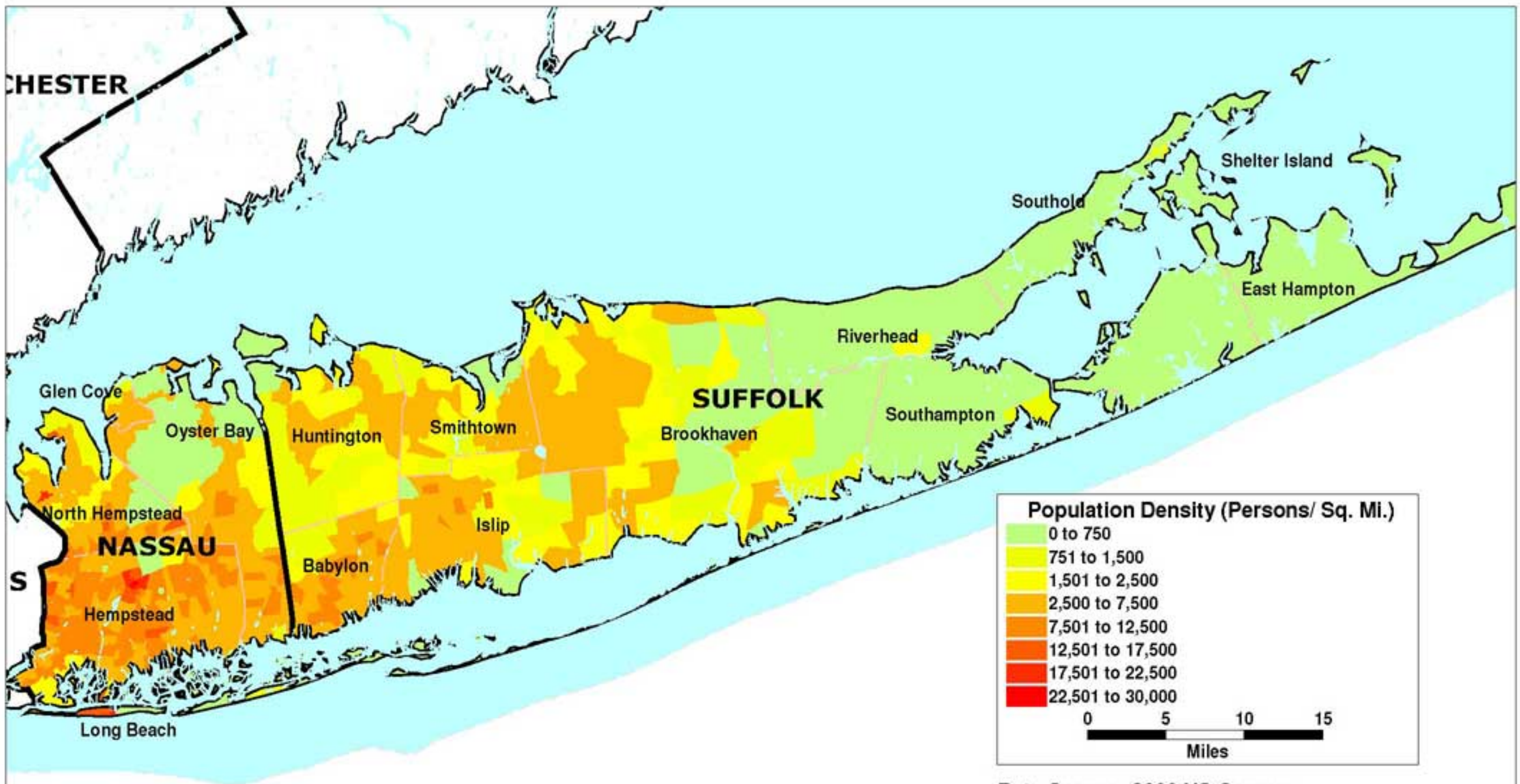
These groups represent segments of the population that are often users of public transportation services. For example, many senior citizens either can no longer operate a motor vehicle or do not wish to drive. Each of these “target markets” for the use of public transportation will be discussed in greater detail in a subsequent section of this report.

2.1.1 Population Density

Population density is a measure typically used as an indicator of the type and level of public transportation service that can most effectively serve a particular area. For example, at certain levels of density (of either population or employment), traditional transit service is feasible. In areas of lower density, more flexible transportation services – such as paratransit or demand response service, flex routes, feeder service, ridesharing, or subsidized taxi service – may be more appropriate and effective.

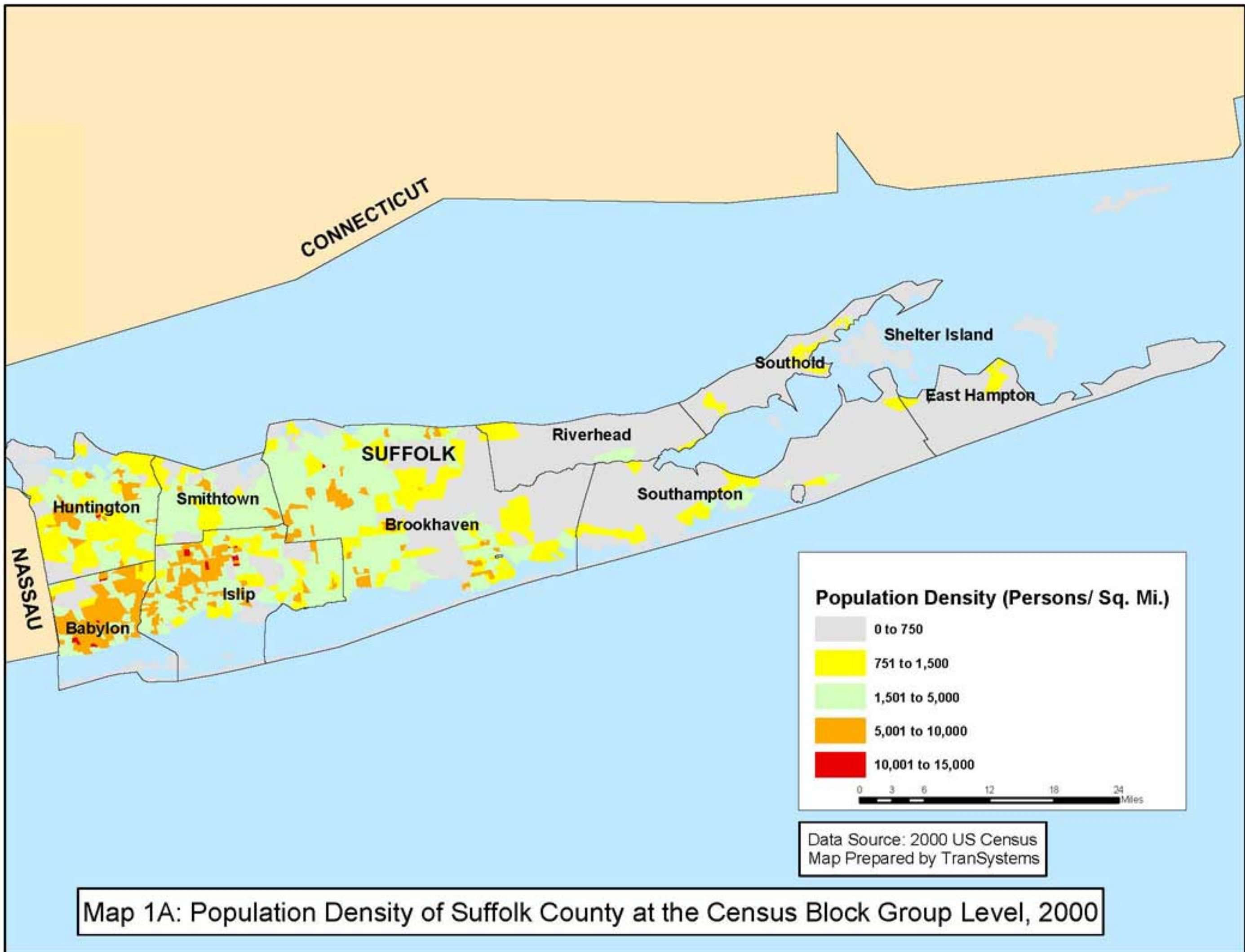
The density of the population in each census tract in Nassau and Suffolk Counties in 2000, measured in persons per square mile, is presented in Map 1. It is apparent that the western portions of Nassau County nearest New York City are the most densely populated, followed by the South Shore and parts of western Suffolk County as well. The lowest densities are observed in Oyster Bay, in pockets throughout western Suffolk County, and in most of the eastern portion of Suffolk County.

Map 1A shows the population density of Suffolk County at the level of census block groups, a smaller geographic unit. As can be seen, there are a few block groups in the towns of Babylon, Huntington, and Islip at the highest density of 10,000 – 15,000 persons per square mile, and a greater number of block groups with density of 5,000 – 10,000 persons per square mile in those towns and in the Town of Brookhaven. East of Brookhaven, the county has dispersed development patterns, with the highest concentrations of population (750 – 1,500 persons per square mile) concentrated primarily in village and hamlet centers.



Data Source: 2000 US Census
Map Prepared by TranSystems

Map 1: Population Density of Nassau and Suffolk Counties, by Census Tract, 2000



Map 1A: Population Density of Suffolk County at the Census Block Group Level, 2000

2.1.2 Transit-Supportive Areas

Densities of three or more households per acre or four or more jobs per acre (which correspond to 1,920 households per square mile and 2,560 jobs per square mile) are generally considered to be the minimum required to support fixed route bus service that operates at least hourly.¹ Fixed route bus service may be successful in areas of lower density, or provided in lower-density areas as a public policy choice.

Furthermore, a certain level of density does not guarantee the suitability of fixed route bus service for an area – bus service may not be utilized in a high density, high income community, for example. Other factors (e.g., the presence of a significant traffic generator, social equity issues, etc.) may also influence whether fixed route transit service is provided in a particular area and at what level that service may be provided.

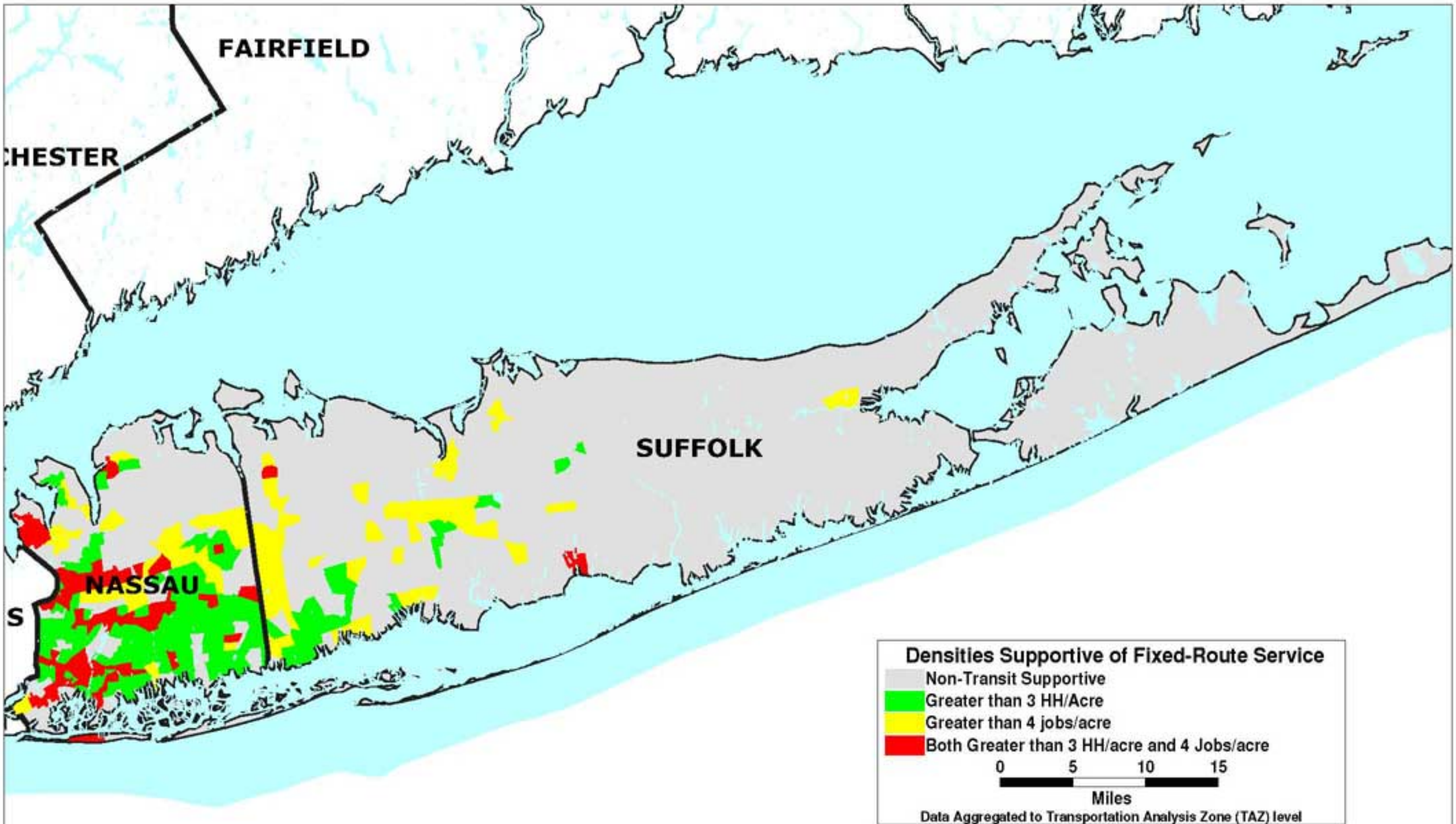
Moreover, this definition does not completely fit circumstances in suburban Long Island due to its unique characteristics: its large suburban population, range of settlement patterns, and the very fact that it is an *island* whose primary means of access and egress are geographically constrained. Long Island's unique aspects result in situations where relatively lower densities *do* support higher levels of transit service, and that must be considered when applying any generic rules of thumb.

However, keeping those important caveats in mind, it is instructive to consider the usual interplay between density and transit service.

Map 2 illustrates the TAZ's with household densities greater than three households per acre, with employment densities greater than four jobs per acre and those TAZ's that meet both criteria. The data was derived from the New York Metropolitan Transportation Council's (NYMTC) regional travel model (i.e., Best Practice Model) for 2005. Note that the density information displayed in Map 2 is based on Transportation Analysis Zones, a unit of geography that corresponds approximately to census tracts. Census tracts are larger than census block groups, and some data is lost when larger geographic units are used for analysis. There are likely to be areas, particularly hamlet centers, that do not appear on Map 2, but do have the density that is typically considered to be supportive of fixed route bus service.

As can be seen, the areas that meet both criteria are almost exclusively in Nassau County - especially along the major east-west corridors leading to and from New York City - while most of the areas that meet the household density criteria are in the southern half of Nassau County and in the western portions of Suffolk County. The areas that solely meet the employment density criteria tend to be located in Nassau County and in western Suffolk County, especially along the State Route 110 corridor.

¹ Kittelson & Associates, Inc., KFH Group, Inc.; Parsons Brinckerhoff Quade & Douglass, Inc.; Dr. Katherine Hunter-Zaworski; *TRCP Report 100: Transit Capacity and Quality of Service Manual*, 2nd Edition; Transit Cooperative Research Program, 2003.



Data Source: NYMTC Best Practice Model
 Map Prepared by TranSystems

Map 2: Transit- Supportive Areas in Nassau and Suffolk Counties, 2005

2.1.3 Target Markets

As was previously mentioned, certain segments of the population are often users of public transportation services. These population segments have been identified as “target markets” for the purposes of this study. Each of these target markets is described in this section of the report, with one map illustrating the density of the target population per square mile for each census block group, and another showing the target population as a percentage of the total population in each census block group. As can be seen in the maps that accompany this section of the report, the densities for the various target markets tend to be highest in those areas that also have the highest overall population densities, such as southwestern Nassau County and those areas of Nassau County closest to New York City. Nonetheless, there are still several variations among the characteristics of the target markets that are noted below. Finally, it is interesting to note that the maps that illustrate the percentage of the target markets among the overall population show that - in some of the less dense areas (e.g., much of Suffolk County) - the percentage of the target markets as part of the total population is relatively high. The data utilized in this section of the report was derived from the 2000 U.S. Census. The target markets are described below.

Senior Citizens

Senior citizens tend to utilize public transportation services more frequently than the general population because many either can no longer operate a motor vehicle or do not wish to drive. Map 3 shows that the density of senior citizens is highest in the southern and western portions of Nassau County, where the total population is also the highest. Map 4 shows that there is a surprisingly high percentage of senior citizens in eastern Suffolk County - especially on the East End, where more than 25 percent of the population appears to be comprised of senior citizens in most census block groups.

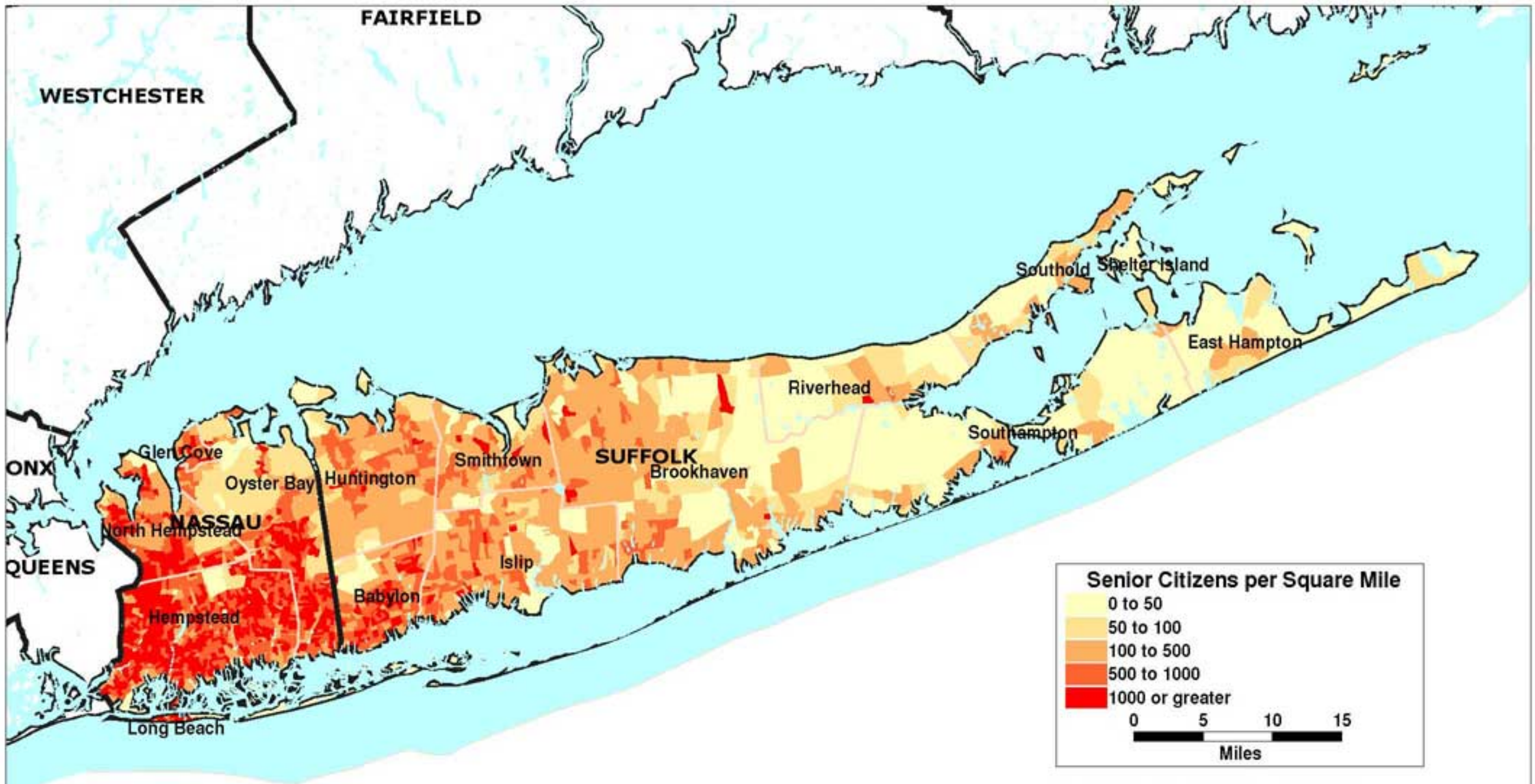
Census data may not accurately account for the population of older adults in the East End of Suffolk County, partly due to the use of post office boxes in areas without door to door mail delivery -- census forms are not delivered to post office boxes.

Persons with Disabilities

Similar to senior citizens, disabled persons rely on public transportation services more than the general population because many cannot operate a motor vehicle. In many cases, the lack of transit implies limited mobility with denied work, shopping and other opportunities. Map 5 shows that the density of disabled persons is highest in the southern and western portions of Nassau County, as well as along the South Shore in western Suffolk County (i.e., in the Towns of Babylon and Islip). Map 6 shows that the percentage of disabled persons in Nassau and Suffolk Counties is more evenly distributed than the density of disabled persons; however, there are a few areas in eastern Suffolk County (e.g., the census block groups southwest of downtown Riverhead) where the percentage of persons with disabilities is greater than 25 percent of the total population.

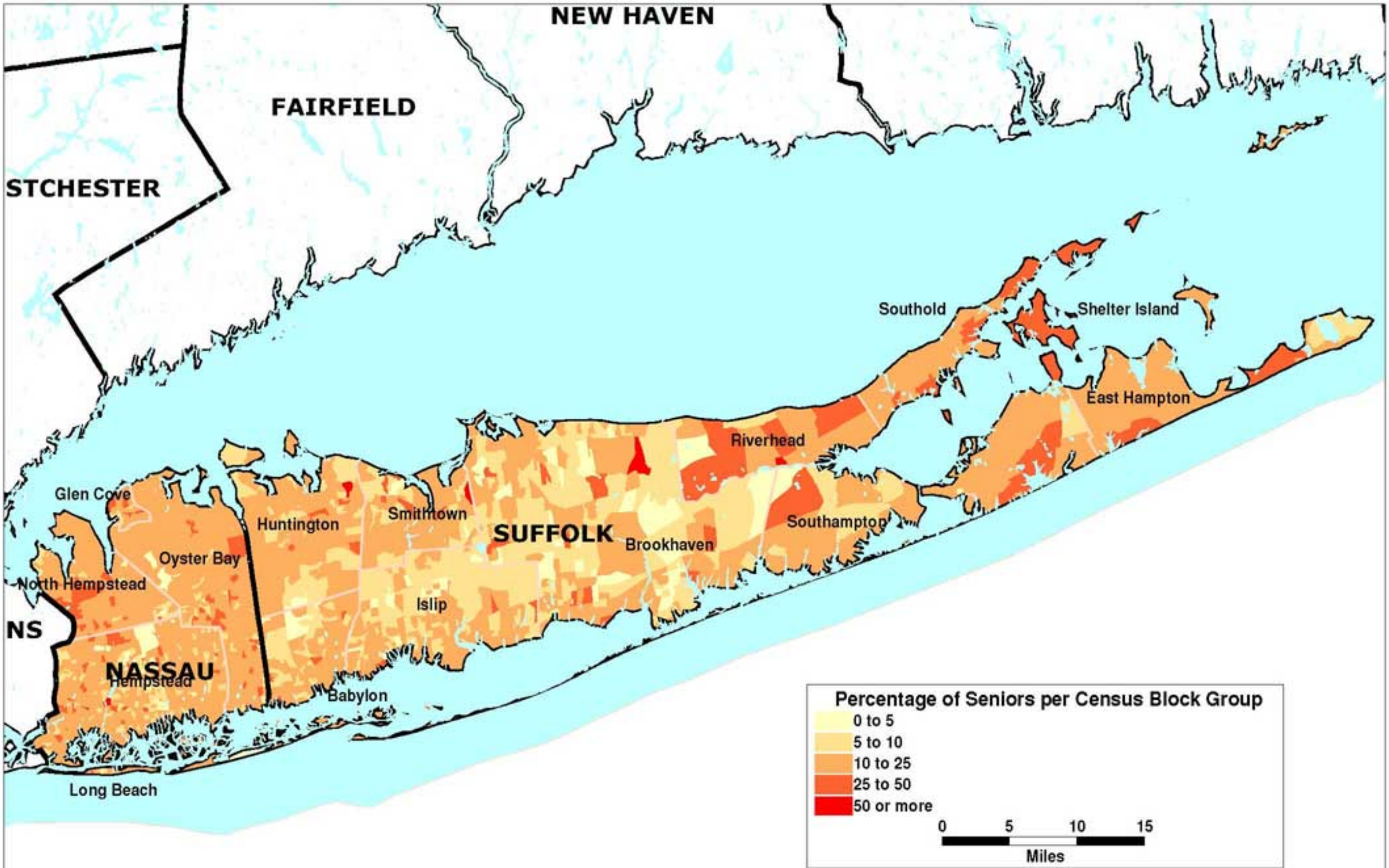
Youth

Young people, such as students, between the ages of 15 and 21 also tend to utilize public transportation services more frequently than the general population because many are either too young to drive or they cannot yet afford to own and operate their own automobile. Map 7 shows that the density of young people

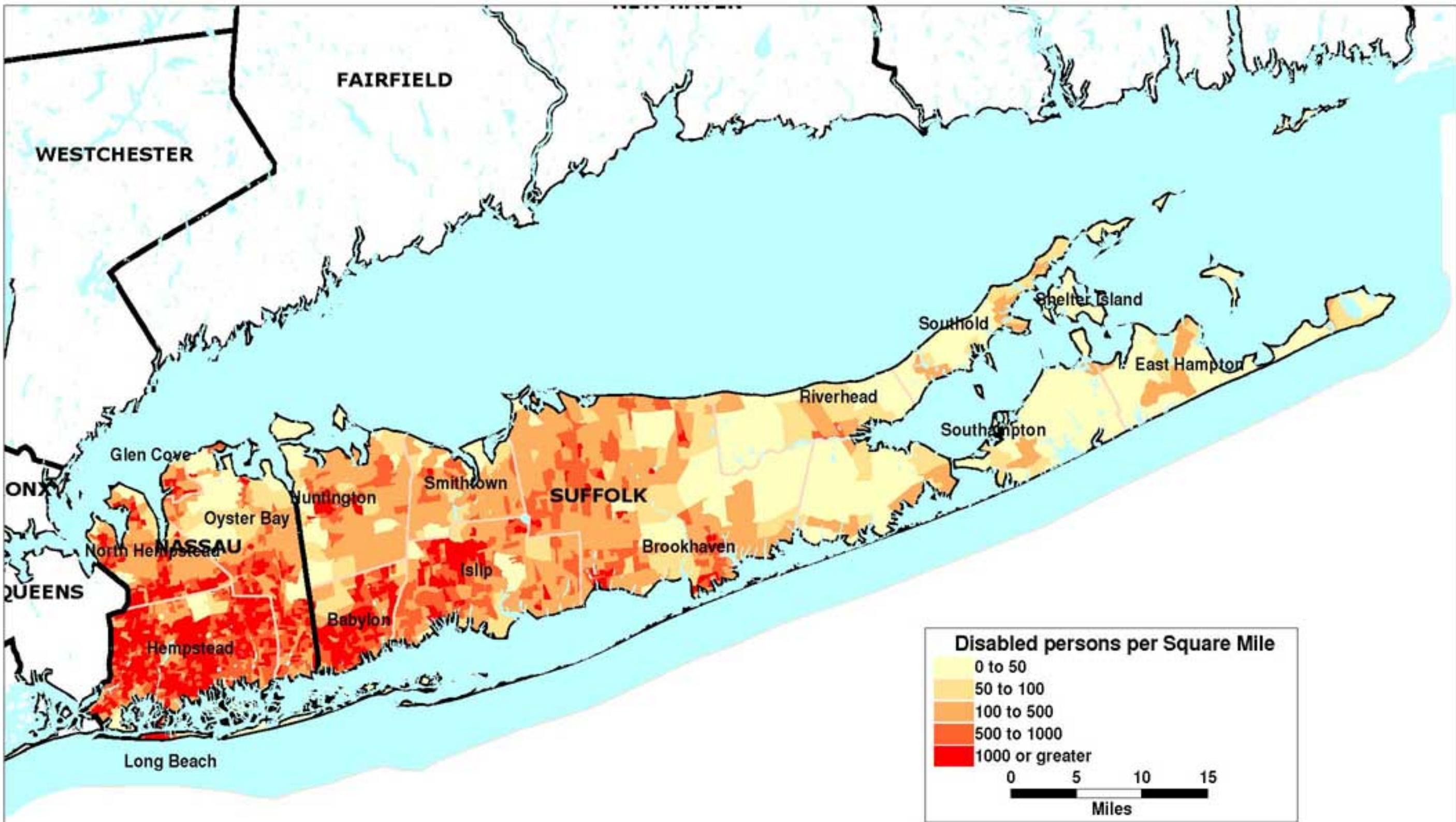


Data Source: 2000 US Census
Map Prepared by TranSystems

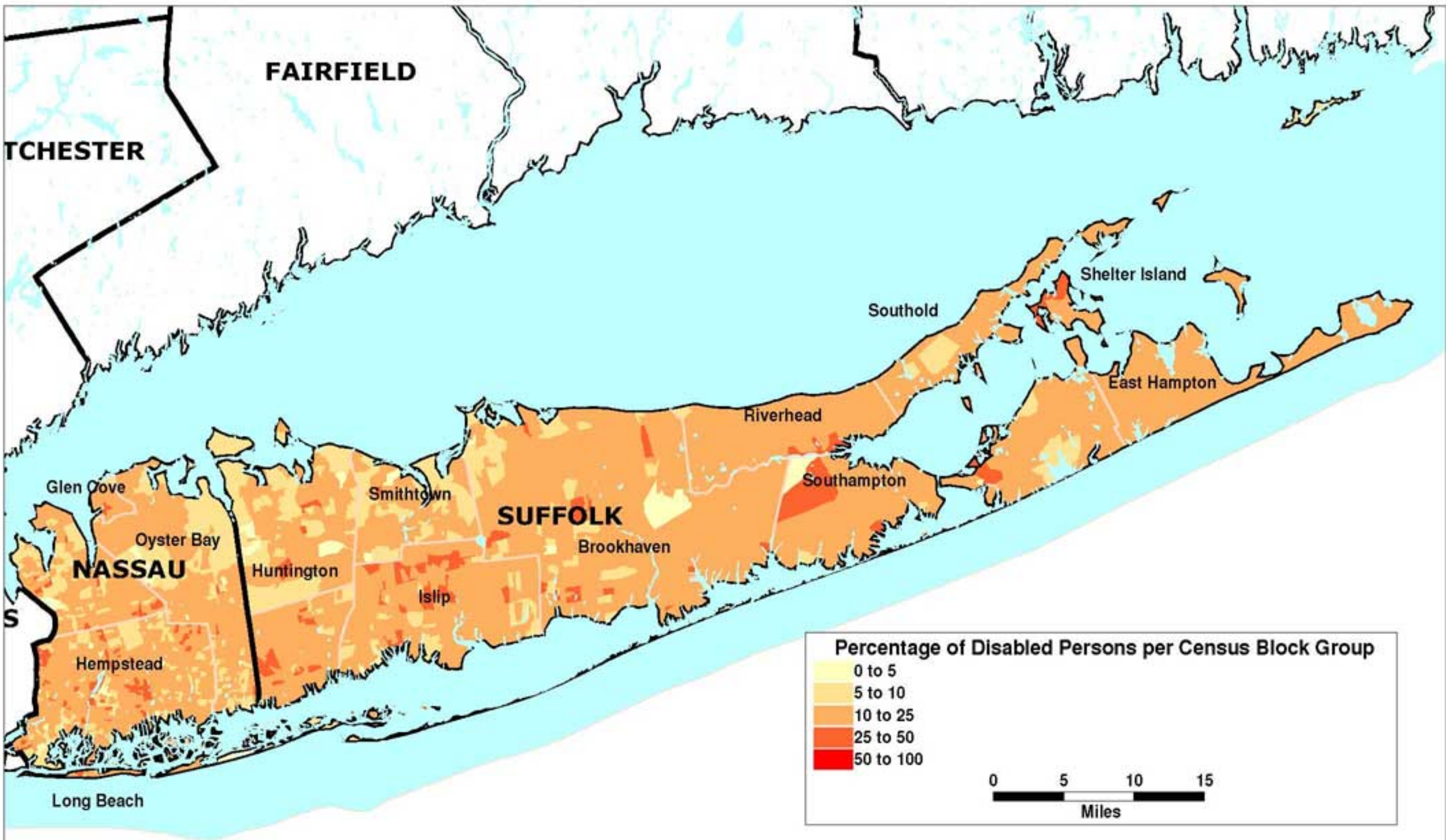
Map 3: Seniors per Square Mile, at the Census Block Group Level, 2000



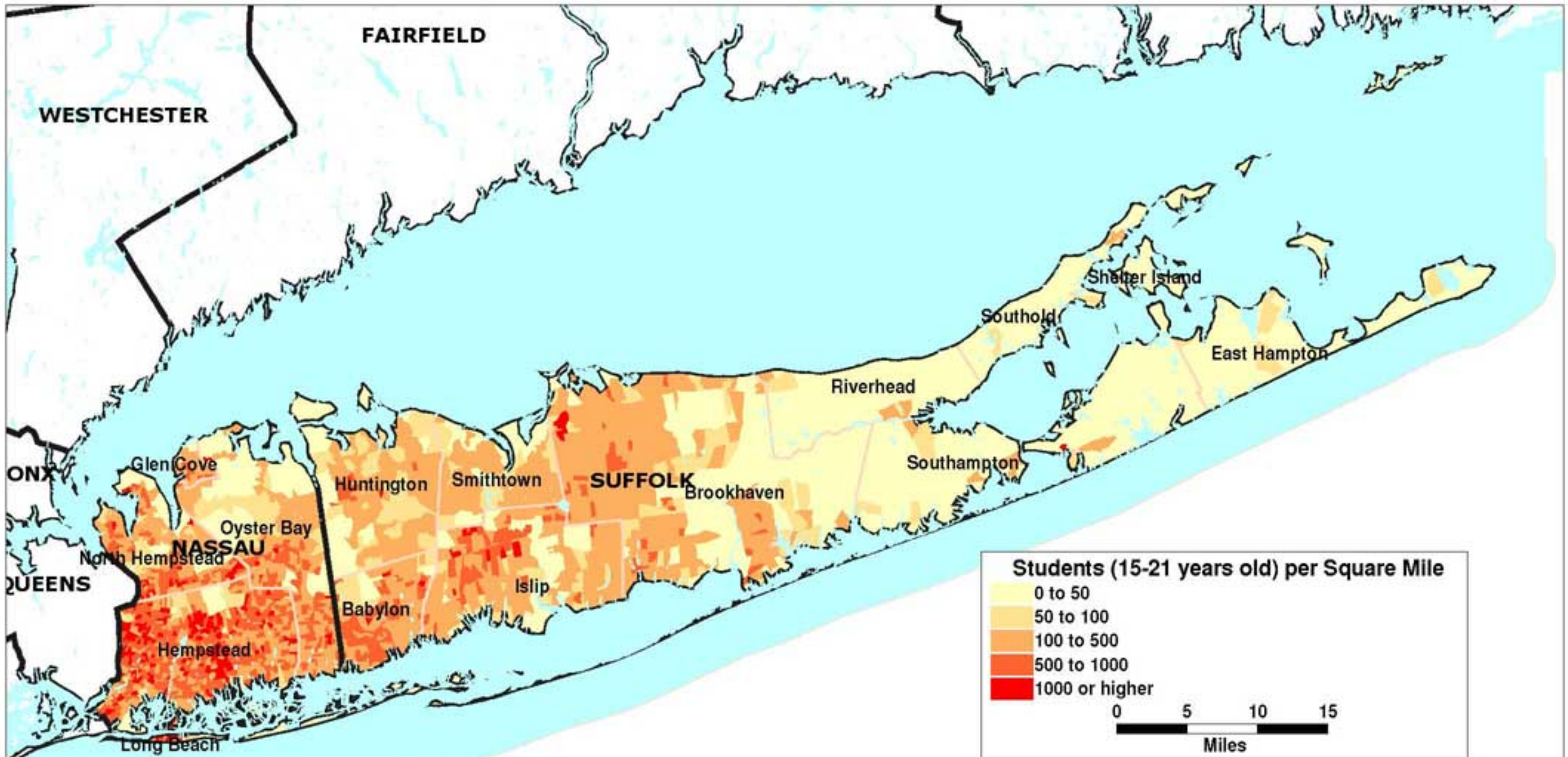
Map 4: Percentage of Seniors per Census Block Group, 2000



Map 5: Persons with Disabilities per Square Mile, by Census Block Group, 2000



Map 6: Percentage of Persons with Disabilities per Census Block Group, 2000



Data Source: 2000 US Census
 Map Prepared by TranSystems

Map 7: Persons Age 15- 21 per Square Mile, at the Census Block Group Level, 2000

is highest in the southern and western portions of Nassau County, as well as in the western portions of Suffolk County. Once again, it should be kept in mind that these are the areas where the total population is also the highest. Map 8 shows that the percentage of young people in Nassau and Suffolk Counties is more evenly distributed than the density of young people; however, there are very few isolated areas where the percentage of young people is greater than 50 percent of the total population.

Households Without Automobiles

Clearly, households without any available automobiles (i.e., “zero vehicle households”) will utilize public transportation services more frequently than the general population. Research has demonstrated that the single most important determinant of mode split is the availability of an automobile. Map 9 shows that the density of zero vehicle households is highest in the southwestern portion of Nassau County (i.e., in the Town of Hempstead and in the City of Long Beach), and in the areas of Nassau County closest to New York City. Map 10 shows that the percentage of zero vehicle households in Nassau and Suffolk Counties is more evenly distributed than the density of such households. Nonetheless, there are areas throughout Long Island where the percentage of zero vehicle households is relatively high, especially in southern and western Nassau County as well as in isolated pockets throughout Suffolk County.

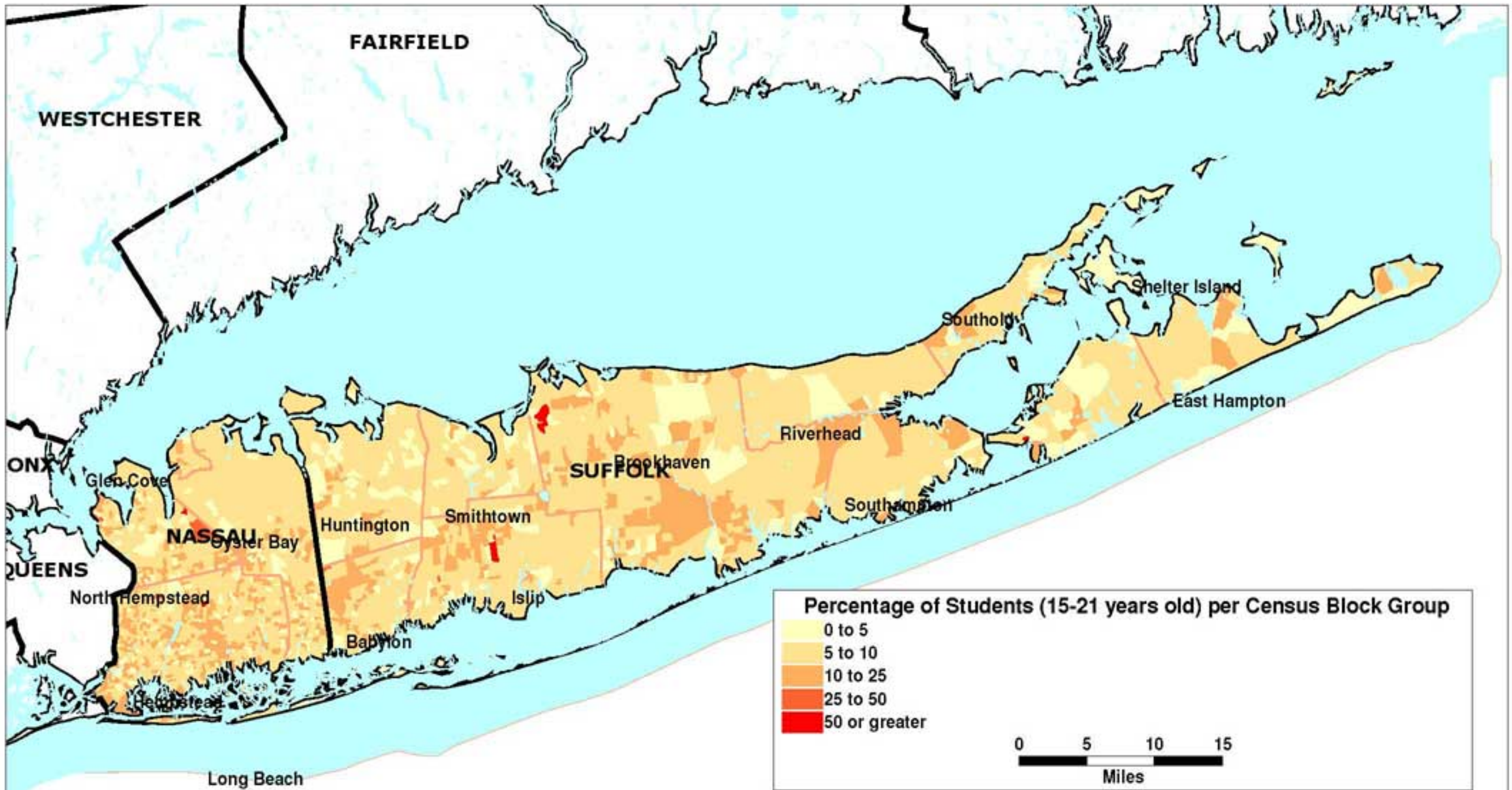
Low Income Households

Individuals who live in households with low annual incomes tend to utilize public transportation because of the lack of mobility choices associated with having a lower income (e.g., not being able to afford a car, or the ability to afford only a single automobile in a household with multiple drivers). Low income households are also included as part of this analysis because the U.S. Department of Transportation’s Environmental Justice guidelines and procedures focus on preventing or minimizing disproportionately high and/or adverse impacts on low income populations.

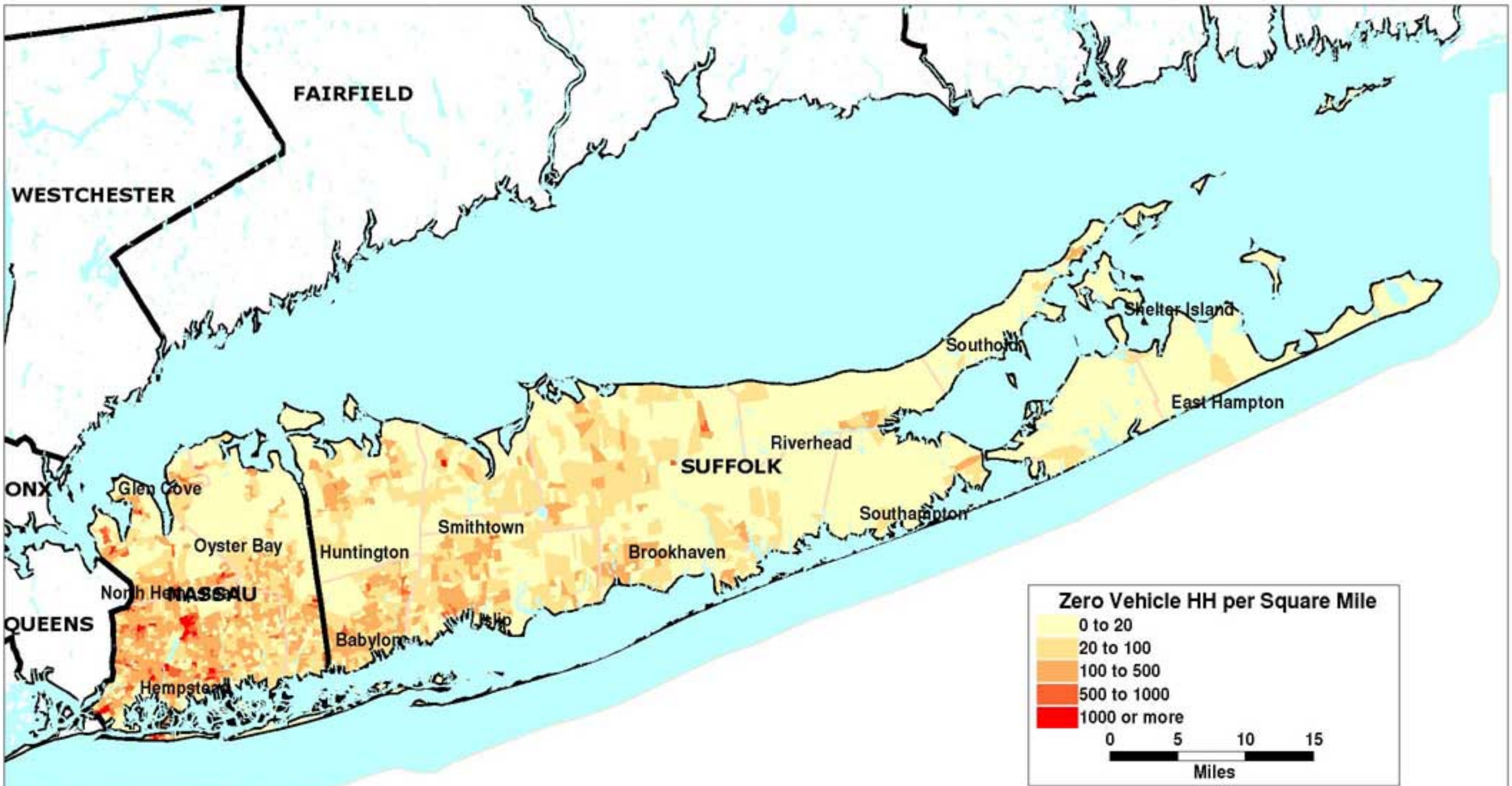
Low income households are defined here as those with an annual income of less than \$25,000 in 2000, or roughly 150% of the federal poverty guideline for a family of four in that year. This definition is generally in line with other income thresholds related to eligibility for transportation services in the Long Island area. The Job Access and Reverse Commute (JARC) plan that was prepared for the region in 2003 identified households with an annual income of \$20,000 or less (the federal JARC program sets eligibility for JARC transportation services at 150% of the federal poverty guidelines). The New York State Temporary Assistance for Needy Families (TANF) program, which is administered by the Nassau and Suffolk County Departments of Social Services, considers 200% of the poverty guidelines as the eligible level for receiving transportation services. The Environmental Justice assessment report prepared for NYMTC in 2005 defined low income as a median household income at or below the federal Department of Health and Human Services guidelines.

The federal poverty guidelines for 2000 are used here because 2000 Census data was used to identify the locations of low income households. For 2007, the federal poverty guideline for a family of four is \$41,300. Under the JARC and TANF programs, families of four earning \$61,950 and \$82,600 a year, respectively, would be considered eligible to receive transportation services.

It should be noted that higher levels of household income could reasonably be considered “low income” on Long Island given the high cost of living in Nassau and Suffolk Counties.

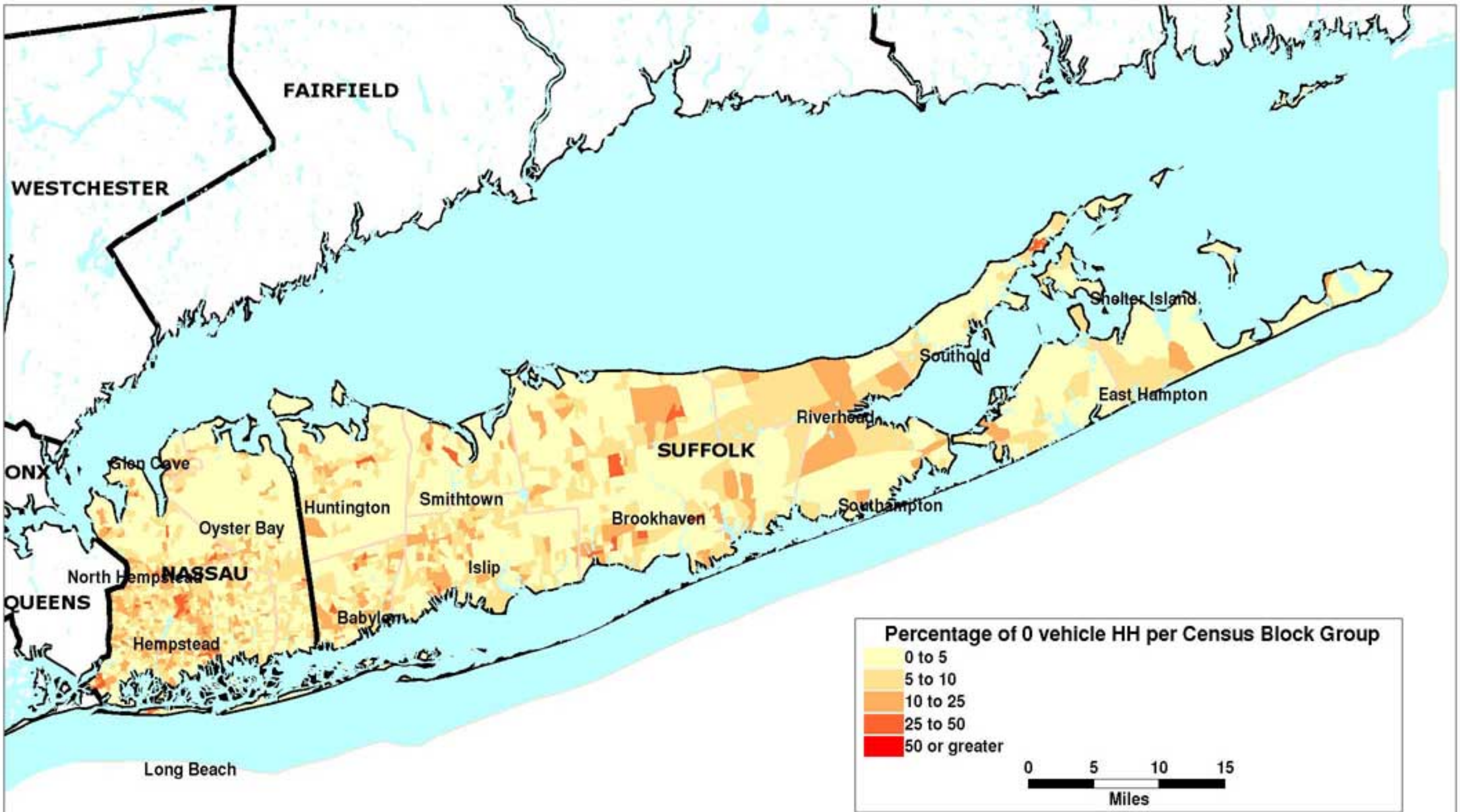


Map 8: Percentage of Persons Age 15- 21 per Census Block Group, 2000



Data Source: 2000 US Census
 Map Prepared by TranSystems

Map 9: Zero-Vehicle Households per Square Mile, by Census Block Group, 2000



Data Source: 2000 US Census
Map Prepared by TranSystems

Map 10: Percentage of Zero- Vehicle Households per Census Block Group, 2000

Map 11 shows that the density of households with incomes of \$25,000 or less in 2000 is highest in the southwestern portion of Nassau County (i.e., in the Town of Hempstead and in the City of Long Beach), and in the areas of Nassau County closest to New York City. The density of low income households is also notable as far east as the central portion of Suffolk County, with some isolated areas near Riverhead and on the East End. Map 12 shows that the percentage of low income households in Nassau and Suffolk Counties is more evenly distributed than the density of such households. However, there are census block groups throughout Long Island where the percentage of low income households is notably high, especially in southern and western Nassau County as well as in the areas in and around Riverhead in Suffolk County. It should be noted that the physical size of the census block groups increases in eastern Suffolk County, thus making a large physical space appear to satisfy certain criteria, even if the target market occupies only a small portion of that space.

Fast-Growing Minority Groups

According to the 2000 Census, Hispanics and Asians were the fastest-growing minority groups in Nassau and Suffolk Counties between 1990 and 2000. These minority groups are included as “target markets” in this analysis because the U.S. Department of Transportation’s Environmental Justice guidelines and procedures focus on preventing or minimizing disproportionately high and/or adverse impacts on minority populations. The percentage of minority residents is one of the measures that is important for determining compliance with Environmental Justice requirements. (More information about Environmental Justice requirements is provided in Appendix D.)

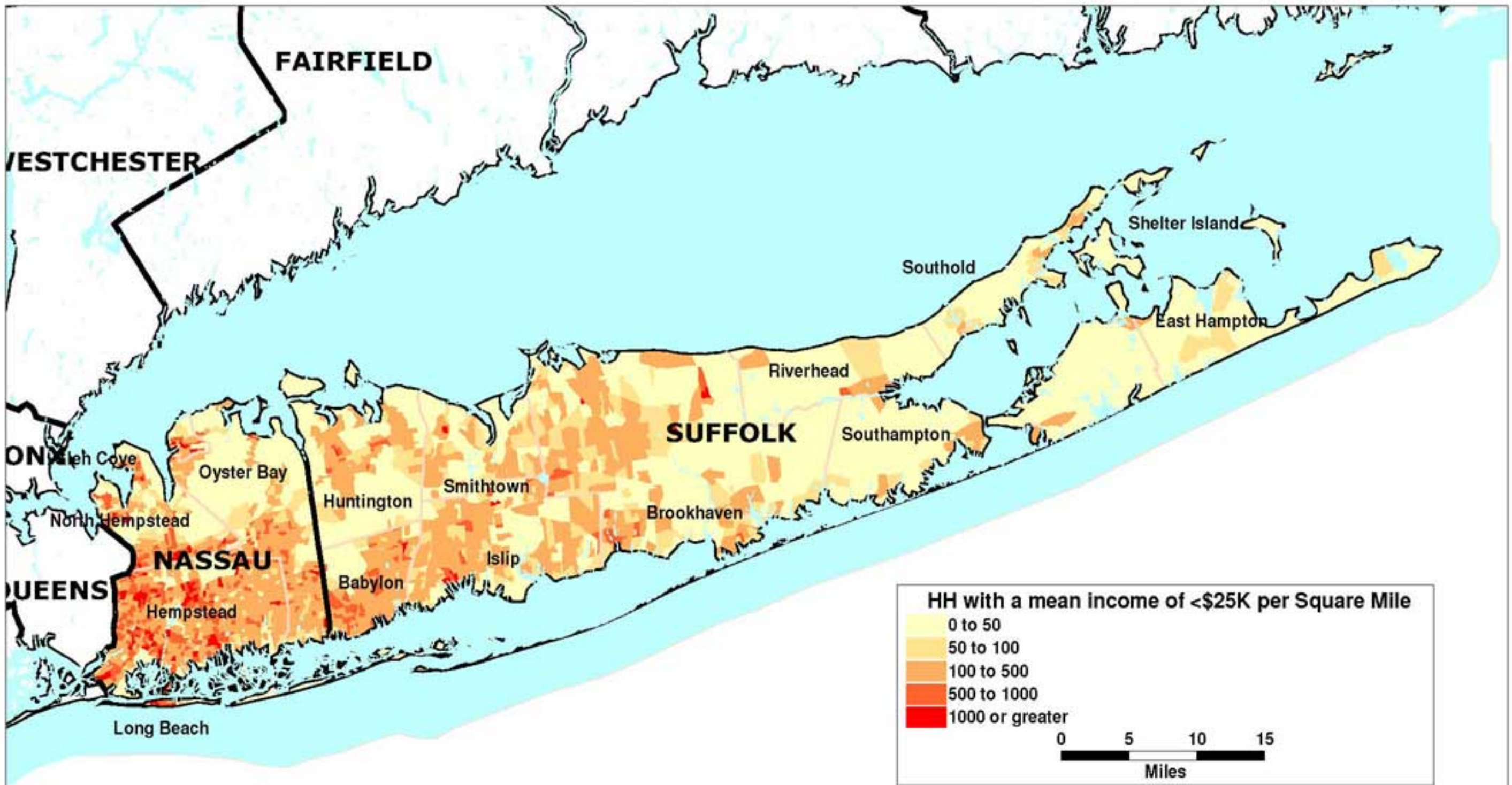
Hispanic Residents

Map 13 shows that the density of Hispanic residents is highest in the southwestern portion of Nassau County (i.e., in the Town of Hempstead and in the City of Long Beach), along the central “spine” of Nassau County near Mineola, in Glen Cove, Great Neck and Port Washington as well as in the areas of Nassau County closest to New York City. The density of Hispanic residents is also high in western Suffolk County, especially in the Town of Islip. The density of Hispanic residents is notable as far east as the central portion of Suffolk County, with some isolated areas near Riverhead and on the East End. Map 14 shows that the percentage of Hispanic residents is high in several census block groups in the Town of Islip in Suffolk County and in portions of the Town of Hempstead in Nassau County. However, there are census block groups throughout Long Island where the percentage of Hispanic residents is notably high, especially in the Town of Brookhaven and in portions of the South Fork in Suffolk County.

Suffolk County agencies have found that census data may not accurately account for the entire Hispanic population in the county. In areas without mail delivery, residents use post office boxes, and therefore do not receive census survey forms.

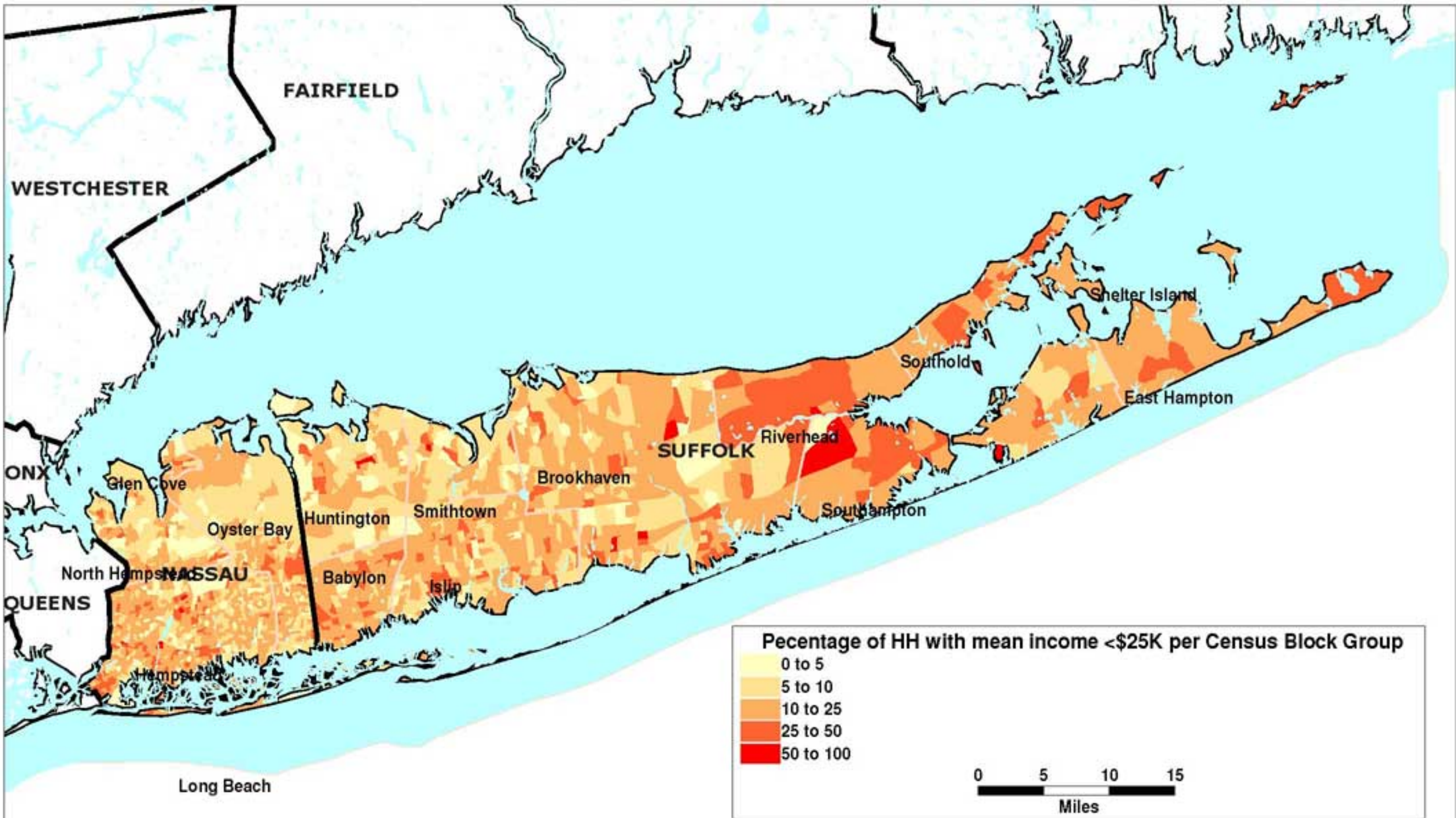
Asian Residents

Map 15 shows that the density of Asian residents is highest in those portions of Nassau County nearest New York City as well as in portions of eastern Nassau County. Increased densities of Asian residents are also apparent in the western half of Suffolk County. Map 16 shows that the percentage of Asian residents is high in several census block groups in the Town of North Hempstead in Nassau County as well as in parts of the Town of Brookhaven near Port Jefferson in Suffolk County.



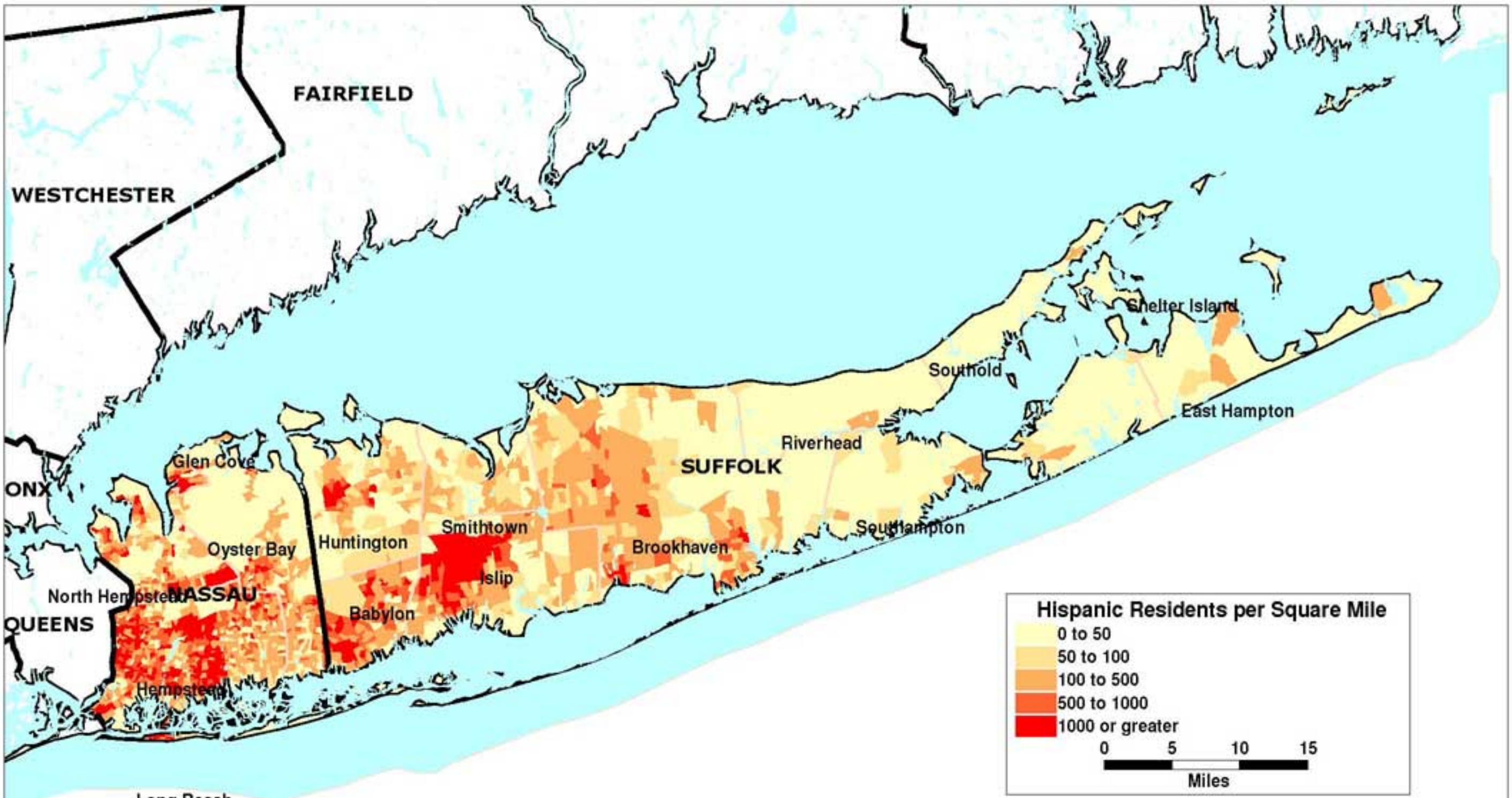
Data Source: 2000 US Census
Map Prepared by TranSystems

Map 11: Households with Annual Income of \$25,000 or Less per Square Mile, by Census Block Group, 2000



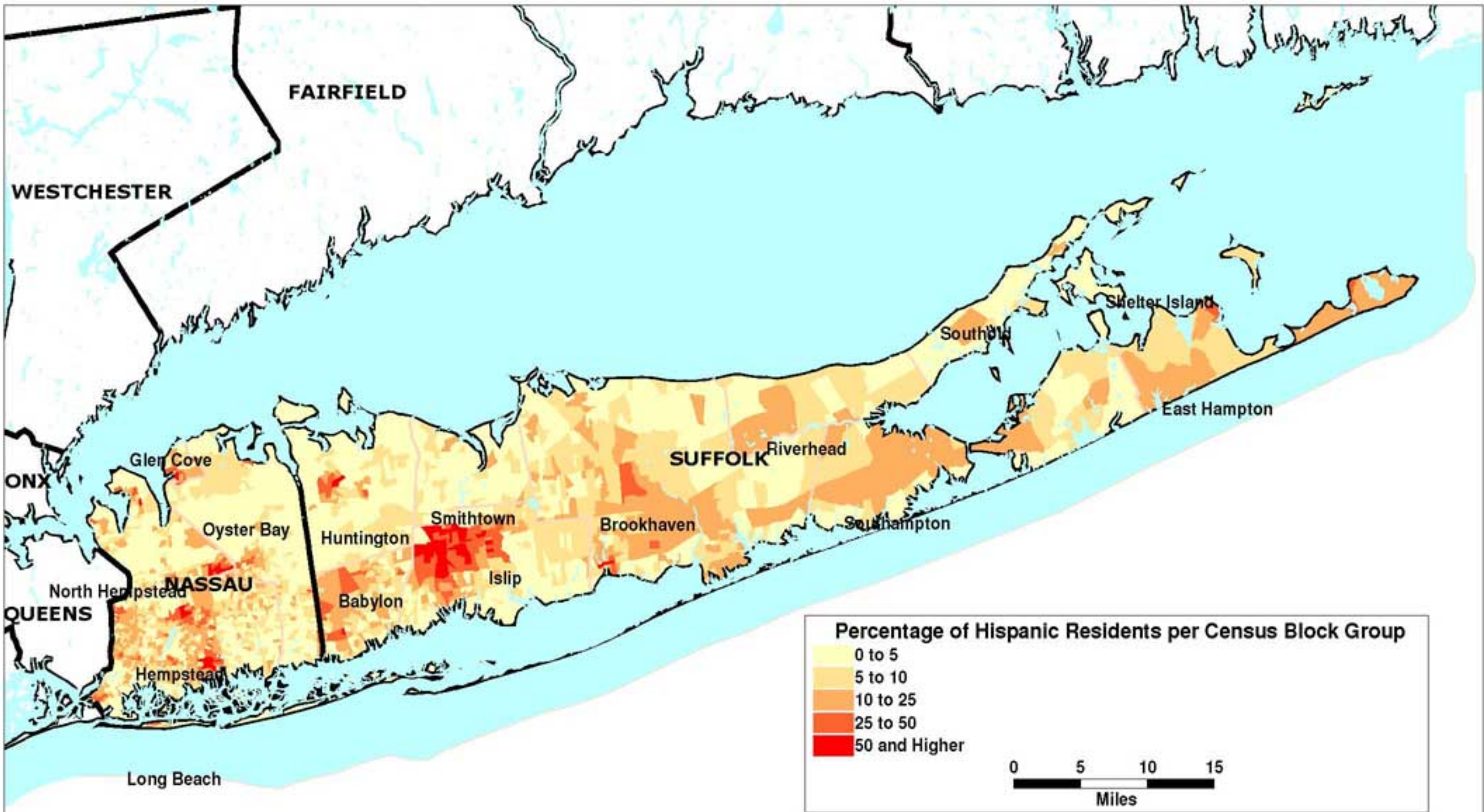
Data Source: 2000 US Census
Map Prepared by TranSystems

Map 12: Percentage of Households with Annual Income of \$25,000 or Less, per Census Block Group, 2000



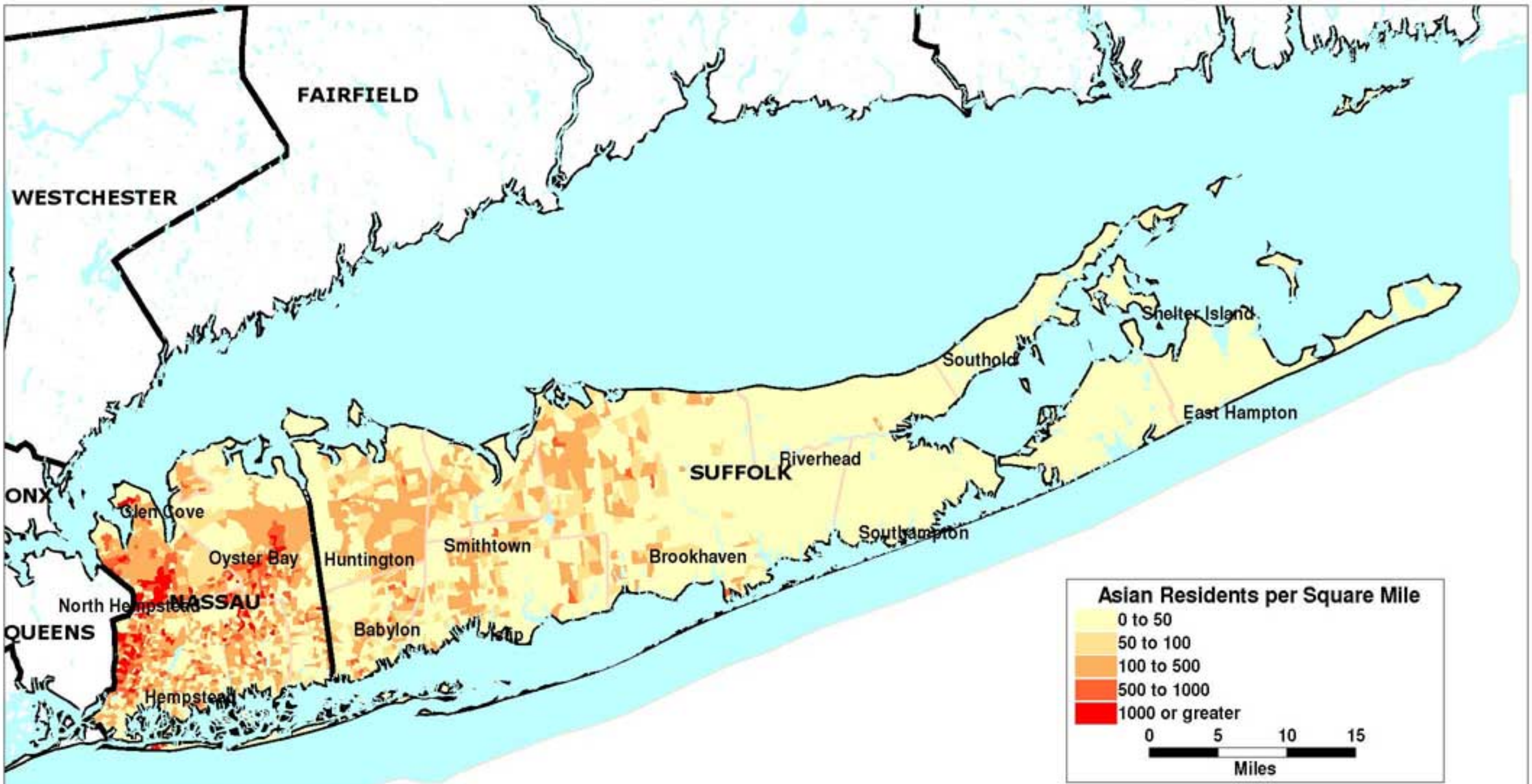
Data Source: 2000 US Census
Map Prepared by TranSystems

Map 13: Hispanic Residents per Square Mile, at Census Block Group Level, 2000



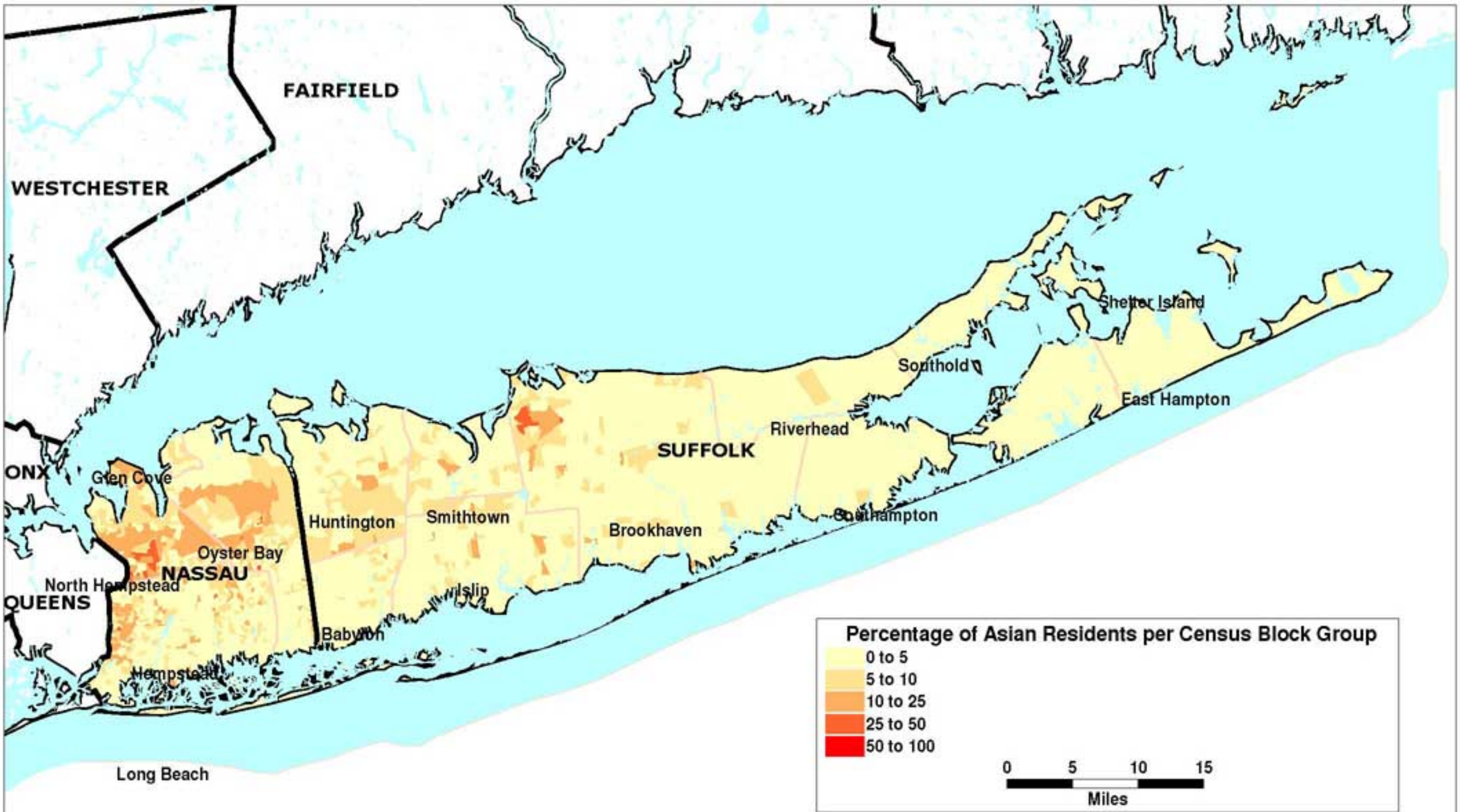
Data Source: 2000 US Census
Map Prepared by TranSystems

Map 14: Percentage of Hispanic Residents per Census Block Group, 2000



Data Source: 2000 US Census
Map Prepared by TranSystems

Map 15: Asian Residents per Square Mile, by Census Block Group, 2000



Data Source: 2000 US Census
Map Prepared by TranSystems

Map 16: Percentage of Asian Residents per Census Block Group, 2000

2.1.4 Summary

The results of the target market analysis suggest a recurring theme in terms of the location of these groups. Higher concentrations of target markets are typically observed in Nassau County, particularly adjacent to New York City, and in western Suffolk County. These are also areas with the highest population. When viewed on a percentage basis, these areas also are of interest. It should be recognized that the target markets are dispersed throughout Long Island, which suggests challenging areas of mobility needs.

2.2 *Transportation Services*

There currently exists in Nassau and Suffolk Counties an extensive public transportation system that consists of both fixed route services and demand responsive services, as well as other specialized transportation services. These services are provided by different operators and each serves certain markets. For example, the fixed route services range from the MTA Long Island Rail Road – which connects Nassau and Suffolk Counties with the metropolitan center of Manhattan – to the Long Beach Bus service, which circulates within the City of Long Beach itself. The various transportation services are described in this section of the report.

2.2.1 Fixed Route Services

There are several providers of fixed route public transportation services on Long Island. Various modes of fixed route public transportation are provided throughout Long Island, including bus services, ferry services and passenger rail services. With the exception of the tables describing MTA Long Island Bus services, which reflect service levels as of the autumn of 2006, this summary will describe the operations of these services in both Nassau County and Suffolk County during the autumn of 2005. Although service levels have not changed appreciably from the time of this inventory, MTA Long Island Bus provided updated information for the autumn of 2006 and requested it be included in this report. By comparing the demand for travel and mobility with most transit service, current deficiencies and future opportunities can be identified.

Major Bus Services

There are four major and publicly owned operators of fixed route bus services in both Nassau and Suffolk Counties. They are MTA Long Island Bus, Suffolk County Transit (county owned, planned, and managed public bus services operated by private bus companies under contract to Suffolk County), Huntington Area Rapid Transit and City of Long Beach Transit. Each of these operators is described in this section, as well as in the accompanying tables.

MTA Long Island Bus

The Metropolitan Transportation Authority operates bus service throughout Nassau County through MTA Long Island Bus. MTA Long Island Bus operates 54 bus routes, five “shuttle” bus routes and two “Jones Beach” special bus routes that only operate during the summer months. These bus routes are described in Table 1. Several of these routes operate into New York City to connect with both MTA Bus and MTA New York City Transit bus and subway services in Queens. Some routes also operate into western Suffolk County to serve major activity centers there and to allow for connections with Suffolk County Transit

Table 1: Route Descriptions, MTA Long Island Bus

Bus Route	Between	And
N1	Hewlett	Elmont/Jamaica
N2	Green Acres	Floral Park/Jamaica
N3	Malverne/Green Acres	Franklin Square/Jamaica
N4	Freeport LIRR Station	Jamaica
N6	Hempstead Transit Center (LIRR)	Jamaica
N8	Franklin Square	Green Acres
N14	Rockville Centre LIRR Station	De Mott Ave. & Long Beach Rd.
N15	Long Beach LIRR Station	Roosevelt Field
N16	Baldwin	Roosevelt Field
N17	Hempstead Transit Center (LIRR)	Rockville Centre LIRR Station
N19	Freeport LIRR Station	Babylon LIRR Station
N20	Hicksville LIRR Station	Flushing
N21	Glen Cove	Flushing
N22	Hicksville LIRR Station	Jamaica
N22A	Roosevelt Field	Jamaica
N23	Manorhaven	Mineola LIRR Station
N24	Roosevelt Field/East Meadow	Jamaica
N25	Great Neck LIRR Station	Lynbrook LIRR Station
N26	Great Neck	Jamaica
N27	Hempstead Transit Center (LIRR)	Glen Cove
N28	Roslyn LIRR Station	Roslyn North Industrial Park
N31	Hempstead Transit Center (LIRR)	Far Rockaway via West Broadway
N32	Hempstead Transit Center (LIRR)	Far Rockaway via Central Ave.

Table 1 (Continued)

Bus Route	Between	And
N33	Long Beach LIRR Station	Far Rockaway
N35	Hempstead Transit Center (LIRR)	Westbury
N36	Lynbrook LIRR Station	Freeport LIRR Station
N37	Hempstead Transit Center (LIRR)	Baldwin Harbor
N40	Freeport LIRR Station	Mineola LIRR Station via Main St.
N41	Freeport LIRR Station	Mineola LIRR Station via Babylon Turnpike
N43	Freeport LIRR Station	Roosevelt Field
N45	Bellmore	Roosevelt Field
N46	Hempstead Transit Center (LIRR)	Bellmore
N47	Hempstead Transit Center (LIRR)	East Meadow
N48	Hempstead Transit Center (LIRR)	Jericho Quadrangle via Westbury
N49	Hempstead Transit Center (LIRR)	Jericho Quadrangle via Levittown
N50	Hicksville	Bellmore
N51	Roosevelt Field	Merrick
N54	Hempstead Transit Center (LIRR)	Amityville LIRR Station via Washington Ave.
N55	Hempstead Transit Center (LIRR)	Sunrise Mall via Broadway
N57	Great Neck LIRR Station	Arrandale Ave. & Middle Neck Rd.
N58	Great Neck LIRR Station	Kings Point
N62	Freeport LIRR Station	Suffolk St. & South Long Beach Ave. <i>or</i> South Freeport AHRC
N65	East Rockaway	Uniondale/Hempstead
N66	East Rockaway	Mineola
N67	Roosevelt	Uniondale/Hicksville

Table 1 (Continued)

Bus Route	Between	And
N70	Hempstead Transit Center (LIRR)	Melville
N71	Hempstead Transit Center (LIRR)	Sunrise Mall
N72	Hempstead Transit Center (LIRR)	Babylon LIRR Station
N73	Hicksville LIRR Station	Wantagh via Gardiners Ave.
N74	Hicksville LIRR Station	Wantagh via East Levittown
N78	Mineola LIRR Station	Plainview
N79	Mineola LIRR Station	Walt Whitman Mall
N80	Hicksville LIRR Station	Sunrise Mall via Hicksville Rd.
N81	Hicksville LIRR Station	Sunrise Mall via Broadway
Shuttle Routes		
N52	Merrick LIRR Station	Camp Ave. & Maeder Ave.
N53	Merrick LIRR Station	Park Ave. & Jerusalem Ave.
N93	Roosevelt Field	Marriott Hotel
N94	Hicksville LIRR Station	Woodbury/Crossways
N95	Farmingdale LIRR Station	Melville
Jones Beach Buses (<i>Summer Only</i>)		
JB50	Jones Beach	Hicksville LIRR Station
JB62	Jones Beach	Freeport LIRR Station

services. MTA Long Island Bus services also connect with the transit services provided by the City of Long Beach. Various MTA Long Island Bus routes also connect MTA Long Island Rail Road train stations with the surrounding area and major activity centers; four of the five “shuttle” routes are specifically designed to serve this function. The summer-only Jones Beach bus routes connect MTA Long Island Rail Road stations directly with Jones Beach State Park.

As can be seen in Table 2, MTA LI Bus operates relatively frequent service. On weekdays, peak period service operates from every five minutes (on the N6 route) to every 60 minutes on some routes; most service runs approximately every 10 to 25 minutes. During the midday period, service on most routes operates approximately every 30 to 60 minutes, although several bus routes operate more frequently during the midday period, with as little as 10 minutes between trips. On Saturdays, service also operates approximately every 30 to 60 minutes, although a few bus routes operate more frequently. Finally, on Sundays service operates approximately every 60 minutes, with more frequent service on a few bus routes.

Table 2: Frequency of Service in Minutes -- MTA Long Island Bus

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
N1	15	30	15	30	45
N2	15	1 trip	30	60	--
N3	30	--	30	--	--
N4	8	17	10	20	30
N6	5	11	6	11	15
N8	45	45	60	45	--
N14	10	30	12	--	--
N15	10	15	10	15	30
N16	10	30	12	45	--
N17	45	90	53	--	--
N19	30	30	30	45	60
N20	10	25	11	60	60
N21	30	60	32	60	60
N22	10	30	18	30	40
N22A	26	5 trips	18	--	--
N23	24	30	30	60	60
N24	9	25	10	35	60
N25	11	30	14	60	60
N26	25	--	30	--	--
N27	25	60	30	50	60
N28	30	--	30	--	--
N31	18	30	20	40	--
N32	18	30	20	40	30

Table 2 (Continued)

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
N33	35	60	35	60	65
N35	15	30	20	35	45
N36	60	45	50	60	--
N37	25	30	30	30	60
N40	11	24	12	24	40
N41	11	24	12	24	40
N43	30	45	30	45	60
N45	40	60	60	75	--
N46	60	60	60	--	--
N47	60	--	60	--	--
N48	30	60	60	60	--
N49	45	60	35	60	70
N50	60	60	60	--	--
N51	43	60	60	100	--
N54	55	60	60	80	--
N55	50	60	45	80	60
N57	28	--	33	--	--
N58	23	30	23	60	60
N62	35	50	30	--	--
N65	4 trips	--	5 trips	--	--
N66	2 trips	--	2 trips	--	--
N67	2 trips	--	2 trips	--	--
N70	23	60	23	1 trip	--

Table 2 (Continued)

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
N71	60	60	60	50	60
N72	23	30	15	50	60
N73	60	60	60	75	--
N74	60	60	60	--	--
N78	35	60	50	--	--
N79	60	60	50	60	60
N80	60	60	80	75	--
N81	45	80	68	75	--
Shuttle Routes					
N52	35	--	35	--	--
N53	35	--	35	--	--
N93	--	3 trips	--	120	--
N94	35	--	45	--	--
N95	40	60	60	--	--
Jones Beach Buses (<i>Summer Only</i>)					
N87	--	77	77	77	77
N88	1 trip	30	19	30	30

Source: MTA Long Island Bus Timetables, Autumn 2006

MTA LI Bus provides 24-hour service, although most routes that serve Nassau County do not operate 24 hours a day. As seen in Table 3, service on weekdays tends to begin at approximately 5:30 AM and continues until approximately 11:00 PM. One route (i.e., the N6) operates service 24 hours a day, seven days a week. The shuttle routes tend to operate relatively limited spans of service during the morning and afternoon peak periods with the exception of the N93 bus route, which operates a midday period loop route connecting various shopping venues in the Roosevelt Field area (i.e., the "Nassau Hub"). On Saturdays, bus routes tend to start about an hour later and finish about an hour earlier than they do on weekdays. Fewer bus routes operate on Saturdays than on weekdays. Finally, spans of service are the most limited on Sundays, with many routes starting at about 8:00 AM and finishing before 8:00 PM. The fewest number of MTA Long Island Bus routes are operated on Sundays. The spans of service of the two special summer-only Jones Beach bus routes are designed to cater the needs of beachgoers, with both bus routes starting during the mid-morning period. One route ends during the late afternoon, but the other continues until almost 11:00 PM.

Table 3: Span of Service, MTA Long Island Bus

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
N1	Northbound	5:57AM	10:09PM	6:13AM	9:58PM	10:00AM	8:13PM
	Southbound	6:55AM	9:44PM	6:30AM	9:28PM	9:30AM	7:48PM
N2	Northbound	6:14AM	6:29PM	10:00AM	5:54PM	--	--
	Southbound	7:50AM	7:29PM	9:30AM	5:23PM	--	--
N3	Northbound	6:18AM 4:01PM	9:03AM 6:26PM	--	--	--	--
	Southbound	7:05AM 4:31PM	8:31AM 7:52PM	--	--	--	--
N4	Westbound	4:30AM	2:02AM	4:55AM	1:17AM	5:00AM	12:17AM
	Eastbound	5:26AM	2:17AM	5:30AM	2:17PM	6:00AM	1:17AM
N6	Westbound	24 hours a day		24 hours a day		24 hours a day	
	Eastbound	24 hours a day		24 hours a day		24 hours a day	
N8	Northbound	7:06AM	10:37PM	8:45AM	10:37PM	--	--
	Southbound	6:30AM	9:56PM	8:00AM	9:56PM	--	--
N14	Loop route	5:54AM	9:40PM	--	--	--	--
N15	Northbound	5:55AM	1:18AM	6:41AM	12:19AM	7:30AM	12:10AM
	Southbound	5:13AM	12:44AM	5:49AM	11:56PM	6:45AM	11:28PM
N16	Northbound	5:53AM	9:42PM	8:05AM	7:40PM	--	--
	Southbound	5:11AM	10:32PM	8:20AM	6:55PM	--	--
N17	Northbound	7:45AM	6:05PM	--	--	--	--
	Southbound	6:45AM	5:40PM	--	--	--	--
N19	Westbound	5:40AM	10:26PM	6:10AM	10:15PM	10:28AM	7:42PM
	Eastbound	5:15AM	9:15PM	5:20AM	9:03PM	9:22AM	6:36PM

Table 3 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
N20	Westbound	5:31AM	10:14PM	5:50 AM	9:02PM	5:50AM	6:51PM
	Eastbound	5:55AM	11:38PM	5:52AM	10:41PM	6:10AM	10:42PM
N21	Westbound	5:32AM	10:42PM	6:32AM	9:49PM	7:28AM	9:48PM
	Eastbound	5:40 AM	10:51PM	6:07AM	9:56PM	6:20AM	8:26PM
N22	Westbound	4:23AM	11:51PM	5:50AM	11:06PM	6:30AM	11:16PM
	Eastbound	5:05AM	12:50AM	5:28AM	1:00AM	6:40AM	12:05AM
N22A	Westbound	5:19AM	11:23PM	--	--	--	--
	Eastbound	6:36AM	9:10 PM	--	--	--	--
N23	Northbound	5:10AM	9:20 PM	6:29AM	7:21PM	9:28AM	6:20PM
	Southbound	6:03AM	10:15PM	7:23AM	8:18PM	10:22AM	7:11PM
N24	Westbound	4:29AM	11:31PM	5:29AM	12:13AM	6:15AM	11:40PM
	Eastbound	5:40AM	12:54AM	6:15AM	12:16AM	7:04AM	12:42AM
N25	Northbound	5:33AM	9:39PM	6:45AM	6:37PM	9:45AM	6:07PM
	Southbound	5:30AM	10:38PM	7:45AM	7:37PM	10:45AM	7:07PM
N26	Northbound	7:07AM	8:49AM	--	--	--	--
	Southbound	4:00 PM	5:20PM	--	--	--	--
N27	Northbound	5:27AM	7:45PM	6:12AM	7:23PM	8:17AM	7:24PM
	Southbound	5:17AM	8:41PM	6:03AM	8:23PM	9:20AM	8:24PM
N28	Northbound	6:50AM 3:52PM	9:34AM 6:02PM	--	--	--	--
	Southbound	7:05AM 3:34PM	9:18AM 6:18PM	--	--	--	--

Table 3 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
N31	Northbound	5:40AM	9:55PM	6:40AM	8:33PM	--	--
	Southbound	6:04AM	8:17PM	5:42AM	7:30PM	--	--
N32	Northbound	5:59AM	12:10AM	6:15AM	11:12PM	6:45AM	10:15PM
	Southbound	5:20AM	11:37PM	5:23AM	10:18PM	5:53AM	9:21PM
N33	Westbound	6:20AM	10:20PM	7:30AM	10:00PM	9:30AM	7:55PM
	Eastbound	6:20AM	9:50PM	7:00AM	9:30PM	9:00AM	7:25PM
N35	Northbound	6:15AM	10:55PM	6:45AM	10:56PM	9:15AM	7:31PM
	Southbound	6:45AM	11:22PM	7:15AM	11:25PM	9:34AM	7:49PM
N36	Westbound	6:17AM	9:05PM	7:15AM	6:58PM	--	--
	Eastbound	6:07AM	8:27PM	6:35AM	6:48PM	--	--
N37	Northbound	5:44AM	9:44PM	7:30AM	9:34PM	8:45AM	8:44PM
	Southbound	5:45AM	10:14PM	7:00AM	9:04PM	9:15AM	8:14PM
N40	Northbound	5:00AM	12:47AM	4:52AM	12:47AM	5:42AM	12:47AM
	Southbound	4:58AM	12:20AM	5:30AM	12:15AM	6:39AM	12:10AM
N41	Northbound	5:30AM	10:55PM	5:38AM	10:10PM	6:52AM	7:23PM
	Southbound	5:40AM	11:15PM	6:07AM	11:41PM	7:09AM	7:27PM
N43	Northbound	5:48AM	11:12PM	6:19AM	10:50PM	7:19AM	9:40PM
	Southbound	6:00AM	11:16PM	7:00AM	10:46PM	7:20AM	9:41PM
N45	Northbound	7:03AM	7:04PM	9:00AM	5:19PM	--	--
	Southbound	7:22AM	7:21PM	10:55AM	7:33PM	--	--
N46	Westbound	6:15AM	7:57PM	--	--	--	--
	Eastbound	5:38AM	7:40PM	--	--	--	--

Table 3 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
N47	Westbound	5:33AM	6:17PM	--	--	--	--
	Eastbound	5:15AM	8:24PM	--	--	--	--
N48	Westbound	7:17AM	10:02PM	6:45AM	8:02PM	--	--
	Eastbound	6:30AM	9:01PM	6:25AM	9:06PM	--	--
N49	Westbound	6:18AM	9:32PM	7:03AM	9:32PM	8:52AM	6:45PM
	Eastbound	5:41AM	8:48PM	7:15AM	8:48PM	8:18AM	7:09PM
N50	Northbound	6:50AM	8:11PM	--	--	--	--
	Southbound	6:30AM	8:00PM	--	--	--	--
N51	Northbound	6:30AM	8:04PM	10:30AM	6:43PM	--	--
	Southbound	5:58AM	6:44PM	9:45AM	5:56PM	--	--
N54	Westbound	5:25AM	8:58PM	7:00AM	6:53PM	--	--
	Eastbound	6:25AM	8:01PM	8:00AM	7:43PM	--	--
N55	Westbound	5:14AM	10:33PM	11:50AM	11:23PM	8:48AM	7:56PM
	Eastbound	6:18AM	10:20PM	10:40AM	10:34PM	9:07AM	8:13PM
N57	AM Loop	6:39AM	9:55AM	--	--	--	--
	PM Loop	2:38PM	7:53PM	--	--	--	--
N58	Northbound	6:31AM	12:15AM	7:03AM	10:20PM	7:03AM	10:20PM
	Southbound	6:48AM	12:35AM	7:23AM	10:40PM	7:23AM	10:40PM
N62	AM Loop	5:54AM	11:01AM	--	--	--	--
	PM Loop	12:02PM	8:15PM	--	--	--	--
N65	AM service	7:15AM	7:53AM	--	--	--	--
	PM service	3:10PM	6:23PM	--	--	--	--

Table 3 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
N66	AM service	7:10AM	7:55AM	--	--	--	--
	PM service	3:05PM	3:46PM	--	--	--	--
N67	AM service	7:15AM	8:00AM	--	--	--	--
	PM service	2:40PM	3:26PM	--	--	--	--
N70	Westbound	7:26AM	9:17PM	--	--	--	--
	Eastbound	6:07AM	8:06PM	--	--	--	--
N71	Westbound	6:05AM	10:30PM	8:51AM	10:28PM	8:53AM	8:58PM
	Eastbound	5:27AM	9:28PM	6:41AM	9:34PM	8:08AM	8:03PM
N72	Westbound	5:11AM	12:15AM	5:39AM	11:50PM	7:21AM	9:08PM
	Eastbound	5:30AM	11:35PM	6:15AM	11:10PM	6:44AM	9:09PM
N73	Northbound	5:50AM	7:34PM	8:53AM	6:38PM	--	--
	Southbound	6:27AM	9:12PM	9:08AM	5:58PM	--	--
N74	Northbound	6:19AM	7:51PM	--	--	--	--
	Southbound	6:53AM	8:10PM	--	--	--	--
N78	Westbound	7:46AM	6:05PM	--	--	--	--
	Eastbound	6:44AM	5:33PM	--	--	--	--
N79	Westbound	6:07AM	11:45PM	7:40AM	10:10PM	9:50AM	7:50PM
	Eastbound	6:13AM	10:35PM	7:14AM	9:04PM	10:35AM	7:28PM
N80	Northbound	7:00AM	6:26PM	8:00AM	7:35PM	--	--
	Southbound	8:07AM	8:00PM	8:04AM	6:50PM	--	--
N81	Northbound	7:21AM	8:45PM	7:20AM	7:17PM	--	--
	Southbound	6:30AM	7:04PM	8:34AM	6:25PM	--	--

Table 3 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
Shuttle Routes							
N52	AM shuttle	6:04AM	9:58AM	--	--	--	--
	PM shuttle	4:28PM	8:23PM	--	--	--	--
N53	AM shuttle	6:04AM	9:58AM	--	--	--	--
	PM shuttle	4:28PM	8:23PM	--	--	--	--
N93	Loop route	9:45AM	3:32PM	9:17AM	3:53PM	--	--
N94	AM shuttle	6:55AM	9:23AM	--	--	--	--
	PM shuttle	3:33PM	6:25PM	--	--	--	--
N95	Northbound	7:10AM	7:19PM	--	--	--	--
	Southbound	7:41AM	7:33PM	--	--	--	--
Jones Beach Buses (<i>Summer Only</i>)							
N87	Northbound	12:25PM	6:18PM	12:25PM	6:18PM	12:25PM	6:18PM
	Southbound	9:08AM	3:15PM	9:08AM	5:33PM	9:08AM	5:33PM
N88	Northbound	9:18AM	11:00PM	8:35AM	11:00PM	8:35AM	11:00PM
	Southbound	8:58AM	10:18PM	8:15AM	10:18PM	8:15AM	10:18PM

Source: MTA Long Island Bus Timetables, Autumn 2006

The fare structure for MTA Long Island Bus is shown in Table 4. What is interesting to note about MTA Long Island Bus is that it is the only bus operator in Nassau and Suffolk Counties that utilizes the MTA's MetroCard system for fare payment. The advantage of utilizing this system is that it allows MTA Long Island Bus passengers to transfer between MTA Long Island Bus routes for free as well as between the MTA Long Island Bus system and both MTA Bus and MTA New York City Transit bus and subway services in Queens for free. This is the only Long Island transit agency that participates in the MetroCard program.

MTA Long Island Bus, Suffolk County Transit and Huntington Area Rapid Transit also have reciprocal transfer agreements and accept each other's transfers. However, Suffolk County Transit and Huntington Area Rapid Transit cannot accept transfers if they encoded on a MetroCard; they can only accept the paper transfers issued by MTA Long Island Bus. MTA Long Island Bus offers patrons the "UniTicket" which allows for transfers to and from the MTA Long Island Rail Road.

Table 4: MTA Long Island Bus Fare Structure

Fare	Amount
One-way cash fare	\$2.00
One-way cash fare with transfer	\$2.25
Senior Citizen/Disabled one-way cash fare	\$1.00
Senior Citizen/Disabled one-way cash fare with transfer	\$1.10
Student fare	\$1.80
Student fare with transfer	\$2.05
Children under 44" tall	Free
MetroCard one-way fare (includes transfer)	\$2.00
Senior Citizen/Disabled MetroCard one-way fare (includes transfer)	\$1.00
7-day Unlimited Ride MetroCard	\$24.00
7-day Senior Citizen/Disabled Unlimited Ride MetroCard	\$12.00
30-day Unlimited Ride MetroCard	\$76.00
30-day Senior Citizen/Disabled Unlimited Ride MetroCard	\$38.00

Source: MTA Long Island Bus website, Autumn 2005

Suffolk County Transit

Suffolk County Transit provides bus service throughout Suffolk County. Suffolk County Transit provides 32 "Main Line" bus routes, 21 "Feeder" bus routes and one express route. Two of the "Main Line" routes only operate during the summer months. The Suffolk County Transit bus routes are described in Table 5. Two bus routes serve the Sunrise Mall in neighboring Nassau County (which also allows for connections with MTA Long Island Bus services), and the express route connects Greenport on the North Fork of Suffolk County with New York City. One of the "Main Line" routes (i.e., the Suffolk Clipper) also functions as an express bus, utilizing the Long Island Expressway for much of its route. Various Suffolk County Transit bus routes also connect MTA Long Island Rail Road train stations with the surrounding area and major activity centers; several bus routes also connect with the Huntington Area Rapid Transit bus services. One of the summer-only bus routes connects an MTA Long Island Rail Road station directly with Robert Moses State Park, while the other provides service to Montauk Point. Suffolk County Transit service is funded by Suffolk County, but the county does not directly operate any of the service. Instead, service is operated by various third party contractors who receive funding from the county and the state.

As can be seen in Table 6, on weekdays Suffolk County Transit operates peak period service approximately every 30 to 60 minutes. During the midday period, service operates approximately every 60 minutes, although several bus routes operate less frequently during the midday period.

Table 5: Route Descriptions, Suffolk County Transit

Bus Route	Between	And
Main Lines		
S1	Amityville LIRR Station	Halesite
S20	Babylon LIRR Station	Massapequa Park/Kohl's
S23	Babylon LIRR Station	South Huntington/Walt Whitman Mall
S25	Babylon LIRR Station	Northwest Babylon/Five Corners
S27	Babylon LIRR Station	Hauppauge
S29	West Babylon	South Huntington/Walt Whitman Mall
S31	Copiague	East Farmingdale
S33	Massapequa Park/Sunrise Mall	Hauppauge
S35	West Babylon/South Bay Shopping Center <i>or</i> Lindenhurst LIRR Station	North Lindenhurst/Crown Manor
S40	Babylon LIRR Station	Patchogue
S41	Bay Shore	Northport/V.A. Medical Center
S42	Babylon LIRR Station	Central Islip LIRR Station
S45	Bay Shore	Smithtown LIRR Station
S47 <i>(Summer)</i>	Babylon LIRR Station	Robert Moses State Park
S54	Patchogue LIRR Station	South Huntington/Walt Whitman Mall
S56	Commack	Lake Grove/Smith Haven Mall
S57	Lake Grove/Smith Haven Mall	Sayville (via L.I. MacArthur Airport)
S58	East Northport	Riverhead County Center
S59	Lake Grove/Smith Haven Mall	Sayville (via Holbrook)
S60	Lake Grove/Smith Haven Mall	Gordon Heights
S61	Patchogue LIRR Station	Port Jefferson Ferry Dock

Table 5 (Continued)

Bus Route	Between	And
Main Lines (Continued)		
S62	Hauppauge	Riverhead County Center
S63	Patchogue	Lake Grove/Smith Haven Mall
S66	Patchogue	Riverhead County Center
S68	Patchogue	Bellport <i>or</i> Center Moriches
S69	Lake Grove/Smith Haven Mall	Port Jefferson/SUNY Stony Brook
S71	Stony Brook LIRR Station	Shirley
S76	Stony Brook LIRR Station	Port Jefferson Station
S90	Center Moriches	Riverhead County Center
S92	Orient Point Ferry Dock <i>or</i> Greenport	East Hampton
S94 <i>(Summer)</i>	Montauk Village	Montauk Point Lighthouse
Suffolk Clipper	Farmingville/Exit 63 Park & Ride	SUNY Farmingdale
Feeder Routes		
1A	Amityville LIRR Station	North Amityville
1B	Copiague	Lindenhurst LIRR Station
2A	Wyandanch/Wheatley Heights	Bay Shore/South Shore Mall
2B	SUNY Farmingdale	Bay Shore
3A	Hauppauge/West Brentwood	Bay Shore/South Shore Mall
3B	Hauppauge/East Brentwood	Bay Shore/Gardiner Manor Plaza
3C	Central Islip	Bay Shore/South Shore Mall
3D	Brentwood LIRR Station	Stony Brook LIRR Station

Table 5 (Continued)

Bus Route	Between	And
Feeder Routes (Continued)		
5A	Port Jefferson LIRR Station	Middle Island
6A	Ronkonkoma LIRR Station	Coram
6B	Lake Grove/Smith Haven Mall	Farmingville
7A	Patchogue LIRR Station	Ronkonkoma LIRR Station
7B	Patchogue LIRR Station	Medford <i>or</i> Bellport
7D	Shirley/Shirley Mall	East Yaphank
7E	Shirley/Shirley Mall	Mastic Beach
8A	Calverton	Riverhead/Suffolk County Community College East
10A	Southampton	Sag Harbor <i>or</i> North Haven
10B	Bridgehampton/Plaza East	East Hampton/Springs
10C	East Hampton	Montauk
10D	Hampton Bays	East Quogue
10E	Hampton Bays	Ponquogue
Express Routes		
S192	Greenport	New York City

Source: Suffolk County Transit Timetables, Autumn 2005

Table 6: Frequency of Service in Minutes, Suffolk County Transit

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
Main Lines					
S1	15	30	15	60	--
S20	60	60	60	60	--
S23	45	60	60	60	--
S25	40	60	60	60	--
S27	40	60	60	60	--
S29	33	60	60	60	--
S31	1 trip	--	1 trip	--	--
S33	30	60	60	73	--
S35	30	60	60	--	--
S40	30	30	30	60	--
S41	60	60	60	60	--
S42	50	60	60	60	--
S45	30	60	30	45	--
S47	60	60	60	30	30
S54	30	60	30	60	--
S56	60	60	60	60	--
S57	60	60	60	60	--
S58	50	60	60	60	--
S59	30	60	60	60	--
S60	60	60	60	60	--
S61	40	60	30	60	--
S62	60	60	60	60	--

Table 6 (Continued)

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
Main Lines (Continued)					
S63	40	60	60	60	--
S66	60	60	60	60	--
S68	60	85	60	85	--
S69	<i>(operates evenings only)</i>		60	60	--
S71	95	95	95	95	--
S76	60	60	60	60	--
S90	150	150	150	150	--
S92	30	60	30	60	--
S94	60	60	60	60	--
Suffolk Clipper	40	--	20	--	--
Feeder Routes					
1A	20	60	60	60	--
1B	60	60	60	60	--
2A	60	60	60	60	--
2B	60	60	60	60	--
3A	50	60	60	60	--
3B	50	60	60	60	--
3C	60	60	60	60	--
3D	60	60	60	60	--
5A	70	70	70	70	--
6A	30	80	80	80	--
6B	60	60	60	55	--

Table 6 (Continued)

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
Feeder Routes (Continued)					
7A	60	80	70	80	--
7B	75	75	75	75	--
7D	165	165	165	165	--
7E	75	75	75	75	--
8A	70	70	70	70	--
10A	160	160	160	160	--
10B	100	100	100	100	--
10C	95	95	95	95	--
10D	120	120	120	--	--
10E	95	95	95	--	--
Express Routes					
S192	135	135	135	200	320

Source: Suffolk County Transit timetables, Autumn 2005

On Saturdays, service also operates approximately every 60 minutes, although again a few bus routes operate less frequently. Finally, on Sundays only two routes are operated: the summer-only bus route to Robert Moses State Park (i.e., S47) serves beachgoers every 30 minutes, and the express bus route (i.e., S192) into New York City operates infrequently, with only a few trips on weekends.

As seen in Table 7, on weekdays Suffolk County Transit service tends to begin at approximately 6:00 AM and continues until approximately 7:00 PM. Some bus routes operate later into the evening. The S31 bus route operates only during the morning and afternoon peak periods. Saturday service tends to see bus routes starting about an hour later and finishing at about the same time they do on weekdays. As was previously mentioned, only two bus routes operate on Sundays. Their spans of service are suited to the markets they serve, with the S47 allowing daytime access to Robert Moses State Park seven days a week and the S192 allowing for travel between the North Fork and New York City.

Finally, the fare structure for Suffolk County Transit is shown in Table 8. MTA Long Island Bus, Suffolk County Transit and Huntington Area Rapid Transit have reciprocal transfer agreements and accept each other's transfers.

Table 7: Span of Service, Suffolk County Transit

Bus Route	Direction	Weekday		Saturday	
		Start	End	Start	End
Main Lines					
S1	Northbound	5:40 AM	9:55PM	7:15AM	7:25PM
	Southbound	6:00 AM	10:05PM	7:30 AM	7:45PM
S20	Eastbound	7:00 AM	6:25PM	8:00 AM	6:25PM
	Westbound	7:25AM	6:50 PM	8:25AM	6:50 PM
S23	Northbound	6:45AM	7:20 PM	7:30 AM	6:20 PM
	Southbound	6:45AM	7:20 PM	7:30 AM	7:20 PM
S25	Loop route	7:05AM	7:25PM	9:05AM	7:25PM
S27	Northbound	5:15AM	7:47PM	6:30 AM	6:30 PM
	Southbound	5:35AM	8:05PM	7:10 AM	7:20 PM
S29	Northbound	6:00 AM	7:30 PM	7:10 AM	6:35PM
	Southbound	6:00 AM	7:55PM	7:30 AM	6:50 PM
S31	Northbound	7:10 AM 5:00 PM	7:50 AM 5:40 PM	--	--
	Southbound	8:00 AM 4:15PM	8:50 AM 5:00 PM	--	--
S33	Northbound	6:30 AM	7:10 PM	7:00 AM	6:15PM
	Southbound	6:45AM	7:00 PM	8:00 AM	5:30 PM
S35	Loop route	6:27AM	6:25PM	--	--
S40	Eastbound	5:30 AM	10:20 PM	5:30 AM	7:20 AM
	Westbound	5:30 AM	10:25PM	6:30 AM	8:25PM
S41	Northbound	5:35AM	6:30 PM	5:35AM	6:30 PM
	Southbound	6:45AM	7:30 PM	6:45AM	7:30 PM

Table 7 (Continued)

Bus Route	Direction	Weekday		Saturday	
		Start	End	Start	End
Main Lines (Continued)					
S42	Eastbound	7:05AM	6:10 PM	8:50 AM	6:10 PM
	Westbound	6:45AM	5:55PM	7:50 AM	5:55PM
S45	Northbound	6:00 AM	10:00 PM	7:30 AM	7:20 PM
	Southbound	6:00 AM	9:35PM	7:30 AM	7:05PM
S47	Loop route	8:45AM	6:55PM	8:30 AM	7:00 PM
(Summer)	<i>S47 also operates on Sundays utilizing the Saturday span of service</i>				
S54	Eastbound	6:30 AM	10:15PM	8:00 AM	7:15PM
	Westbound	6:30 AM	8:50 PM	7:50 AM	6:35PM
S56	Eastbound	8:00 AM	6:20 PM	8:00 AM	6:20 PM
	Westbound	7:10 AM	7:20 PM	7:10 AM	7:20 PM
S57	Northbound	7:00 AM	7:40 PM	7:25AM	7:40 PM
	Southbound	6:40 AM	8:20 PM	7:10 AM	7:20 PM
S58	Eastbound	6:50 AM	8:40 PM	7:30 AM	8:40 PM
	Westbound	5:40 AM	7:30 PM	6:20 AM	7:30 PM
S59	Northbound	5:45AM	7:55PM	7:15AM	7:55PM
	Southbound	7:00 AM	7:35PM	7:00 AM	7:35PM
S60	Eastbound	8:00 AM	8:20 PM	8:00 AM	8:20 PM
	Westbound	6:15AM	8:20 PM	6:15AM	8:20 PM
S61	Northbound	5:40 AM	7:55PM	7:50 AM	6:50 PM
	Southbound	5:55AM	8:20 PM	7:00 AM	7:20 PM

Table 7 (Continued)

Bus Route	Direction	Weekday		Saturday	
		Start	End	Start	End
Main Lines (Continued)					
S62	Eastbound	6:00 AM	7:00 PM	6:15AM	7:00 PM
	Westbound	6:20 AM	7:50 PM	7:00 AM	7:50 PM
S63	Northbound	7:20 AM	7:20 PM	7:20 AM	7:20 PM
	Southbound	6:55AM	7:20 PM	8:05AM	7:20 PM
S66	Eastbound	5:35AM	6:50 PM	5:35AM	6:50 PM
	Westbound	6:30 AM	7:20 PM	6:30 AM	7:20 PM
S68	Eastbound	7:00 AM	6:40 PM	7:00 AM	6:40 PM
	Westbound	6:35AM	6:15PM	6:35AM	6:15PM
S69	Eastbound	8:45PM	10:00 PM	8:45PM	10:00 PM
	Westbound	8:20 PM	10:20 PM	8:20 PM	10:20 PM
S71	Northbound	6:15AM	6:30 PM	7:45AM	6:30 PM
	Southbound	6:50 AM	8:00 PM	7:45AM	6:30 PM
S76	Eastbound	7:58AM	5:55PM	7:58AM	5:55PM
	Westbound	7:30 AM	5:35PM	7:30 AM	5:35PM
S90	Eastbound	8:00 AM	6:00 PM	8:00 AM	6:00 PM
	Westbound	7:45AM	5:50 PM	7:45AM	5:50 PM
S92	Eastbound	5:45AM	6:15PM	5:45AM	6:15PM
	Westbound	7:35AM	6:10 PM	7:35AM	6:10 PM
S94 <i>(Summer)</i>	Eastbound	10:05AM	5:20 PM	10:05AM	5:20 PM
	Westbound	10:30 AM	5:45PM	10:30 AM	5:45PM

Table 7 (Continued)

Bus Route	Direction	Weekday		Saturday	
		Start	End	Start	End
Main Lines (Continued)					
Suffolk Clipper	Eastbound	4:15PM	6:10 PM	--	--
	Westbound	6:30 AM	8:55AM	--	--
Feeder Routes					
1A	East Loop	5:45AM	7:15PM	7:35AM	7:15PM
	West Loop	7:05AM	8:10 PM	8:05AM	6:45PM
1B	Eastbound	6:25AM	6:35PM	7:20 AM	6:35PM
	Westbound	6:40 AM	6:00 PM	7:40 AM	6:00 PM
2A	Southbound	6:45AM	7:20 PM	7:30 AM	6:15PM
	Northbound	6:20 AM	7:15PM	8:30 AM	7:15PM
2B	Southbound	6:55AM	7:05PM	6:55AM	7:05PM
	Northbound	6:40 AM	6:53PM	7:40 AM	6:53PM
3A	Northbound	5:55AM	7:20 PM	6:45AM	7:20 AM
	Southbound	6:00 AM	7:45PM	7:30 AM	6:25PM
3B	Northbound	5:55AM	7:20 PM	6:45AM	7:20 PM
	Southbound	6:00 AM	7:25PM	7:45AM	6:25PM
3C	Northbound	6:05AM	6:55PM	7:00 AM	6:55PM
	Southbound	7:00 AM	6:55PM	7:00 AM	6:55PM
3D	Northbound	6:30 AM	7:15PM	6:30 AM	7:15PM
	Southbound	5:50 AM	7:50 PM	7:30 AM	7:50 PM
5A	Westbound	7:40 AM	6:50 PM	9:05AM	6:20 PM
	Eastbound	8:15AM	6:20 PM	8:15AM	6:20 PM

Table 7 (Continued)

Bus Route	Direction	Weekday		Saturday	
		Start	End	Start	End
Feeder Routes (Continued)					
6A	Eastbound	6:15AM	7:30 PM	7:20 AM	6:20 PM
	Westbound	5:50 AM	6:55PM	7:55AM	6:55PM
6B	Eastbound	7:00 AM	6:45PM	8:00 AM	6:45PM
	Westbound	7:00 AM	7:00 PM	8:00 AM	7:00 PM
7A	Northbound	6:30 AM	6:40 PM	8:30 AM	6:40 PM
	Southbound	7:00 AM	7:15PM	8:00 AM	6:05PM
7B	Northbound	6:45AM	6:45PM	7:50 AM	6:45PM
	Southbound	7:15AM	7:15PM	7:15AM	6:05PM
7D	East Loop	9:15AM	6:20 PM	9:15AM	6:20 PM
	West Loop	7:45AM	4:30 PM	7:45AM	4:30 PM
7E	East Loop	7:30 AM	6:25PM	8:20 AM	6:25PM
	West Loop	6:55AM	7:10 PM	8:25AM	7:10 PM
8A	Northbound	7:59AM	7:00 PM	9:09AM	5:57PM
	Southbound	7:00 AM	6:04PM	8:10 AM	6:04PM
10A	Eastbound	7:05AM	6:30 PM	7:05AM	6:30 PM
	Westbound	6:25AM	5:25PM	7:55AM	5:25PM
10B	Loop route	6:50 AM	7:00 PM	6:50 AM	7:00 PM
10C	Loop route	6:50 AM	7:50 PM	6:50 AM	7:50 PM
10D	Eastbound	8:55AM	5:25PM	--	--
	Westbound	8:30 AM	6:25PM	--	--
10E	Loop route	7:55AM	6:00 PM	--	--

Table 7 (Continued)

Bus Route	Direction	Weekday		Saturday		Sunday	
		Start	End	Start	End	Start	End
Express Routes							
S192	Eastbound	9:30 AM	9:00 PM	8:30 AM	11:45PM	11:00 AM	11:45PM
	Westbound	5:45AM	8:00 PM	5:45AM	9:30 PM	8:00 AM	9:30 PM

Source: Suffolk County Transit timetables, Autumn 2005

Table 8: Suffolk County Transit Fare Structure

Fare	Amount
One-way cash fare	\$1.50
Student fare	\$1.00
Senior citizen/handicapped fare	\$0.50
Transfers	\$0.25
Children under 5 years old	Free
Personal Care Attendants (with disabled passengers)	Free
One-way S192 express bus fare	\$16.00

Source: Suffolk County Transit website, Autumn 2005

Huntington Area Rapid Transit

Huntington Area Rapid Transit (HART) provides bus service throughout the Town of Huntington, located in western Suffolk County. As seen in Table 9, HART operates four bus routes, two MTA Long Island Rail Road “Feeder” bus routes and one summer-only bus route serving the beach. HART’s Feeder bus routes are specifically designed to connect the Huntington Station of the MTA Long Island Rail Road with the surrounding area and major activity centers. The HART bus routes also connect with the Suffolk County Transit bus routes in the service area.

Table 9: Route Descriptions, Huntington Area Rapid Transit

Bus Route	Between	And
H-4	Northport Harbor	Walt Whitman Mall
H-6	Cold Spring Harbor <i>or</i> Huntington	Commack (Macy's Plaza)
H-9A (clockwise loop)	Walt Whitman Mall	Huntington Hospital
H-9B (counterclockwise loop)	Walt Whitman Mall	Huntington Hospital
MTA Long Island Rail Road Feeder Routes		
H-1A	Huntington LIRR Station	New York Avenue and Old Country Road
H-2A	Huntington LIRR Station	Little Plains Road and Manor Road
Extra "Summer Bus"		
Summer Bus	Huntington	Centerport Beach

Source: Town of Huntington website, Autumn 2005

As can be seen in Table 10, on weekdays HART's regular bus routes operate service every hour, while the Feeder bus routes operate every 15 minutes during the morning peak period and every 25 minutes during the afternoon peak period. The Feeder bus routes are designed to connect with MTA Long Island Rail Road train departures and arrivals; they do not operate during the weekday midday period. During the summer months, the extra "Summer Bus" operates four trips during the weekday midday period serving Centerport Beach. On Saturdays, HART's regular bus routes operate service every two hours; no other HART services are operated on Saturdays. Finally, there is no HART service on Sundays.

As seen in Table 11, on weekdays service on HART's regular routes tends to begin at approximately 7:00 AM and continues until approximately 7:00 PM. Service on the Feeder bus routes only operates during the weekday morning and afternoon peak periods. The summer-only bus route serving the beach only operates during the weekday midday period. On Saturdays HART's regular bus routes start between 9:00 AM and 10:00 AM and are all finished by 7:00 PM. No other HART bus routes operate on Saturdays. There is no HART service at all on Sundays.

Table 10: Frequency of Service in Minutes, Huntington Area Rapid Transit

Bus Route	AM Peak	Midday	PM Peak	Saturdays
H-4	60	60	60	120
H-6	60	60	60	120
H-9A (clockwise loop)	60	60	60	120
H-9B (counterclockwise loop)	60	60	60	120
MTA Long Island Rail Road Feeder Routes				
H-1A	15	--	25	--
H-2A	15	--	25	--
Extra "Summer Bus"				
Summer Bus	--	4 trips	--	--

Source: Town of Huntington website, Autumn 2005

Table 11: Span of Service, Huntington Area Rapid Transit

Bus Route	Direction	Weekdays		Saturdays	
		Start	End	Start	End
H-4	Northbound	7:00 AM	6:55PM	9:00 AM	5:55PM
	Southbound	7:00 AM	6:52PM	10:00 AM	6:52PM
H-6	Westbound	6:55AM	6:50 PM	10:00 AM	6:50 PM
	Eastbound	7:00 AM	6:45PM	9:00 AM	5:45PM
H-9A	Loop route	7:00 AM	6:55PM	9:00 AM	5:55PM
H-9B	Loop route	7:00 AM	6:53PM	10:00 AM	6:55PM
MTA Long Island Rail Road Feeder Routes					
H-1A	AM Loop	6:10 AM	7:40 AM	--	--
	PM Loop	6 trips starting at 5:38PM		--	--
H-2A	AM Loop	6:10 AM	7:40 AM	--	--
	PM Loop	6 trips starting at 5:38PM		--	--
Extra "Summer Bus"					
Summer Bus	To Beach	9:25AM	10:50 AM	--	--
	From Beach	2:00 PM	3:25PM	--	--

Source: Town of Huntington website, Autumn 2005

HART’s fare structure is shown in Table 12. HART offers patrons the “UniTicket” which allows for transfers to and from the MTA Long Island Rail Road. MTA Long Island Bus, Suffolk County Transit and HART also have reciprocal transfer agreements and accept each other’s transfers.

Table 12: HART Fare Structure

Fare	Amount
One-way cash fare	\$1.25
Student fare	\$0.75
Senior citizen/disabled fare	\$0.50
Transfers	\$0.10
Children under 4 years old	Free
Regular 10-trip ticket book	\$10.00
Senior citizen/disabled 10-trip ticket book	\$4.00
Monthly pass	\$28.00
Monthly youth pass (through age 18)	\$15.00

Source: Town of Huntington website, Autumn 2005

City of Long Beach Transit

The City of Long Beach operates four bus routes throughout Long Beach that all utilize the Long Beach train station on the MTA Long Island Rail Road as their “hub”. One Long Beach bus route goes as far east as Point Lookout and is also known as the “N69”. Another route is known as the “Shoppers’ Special” and operates two distinct loops. The City of Long Beach Transit bus routes are described in Table 13.

As can be seen in Table 14, on weekdays the Shoppers’ Special and the Point Lookout bus routes operate hourly service; the Shoppers’ Special only operates during the weekday midday period. The remaining two bus routes operate every 15 to 20 minutes during the peak periods and every 40 minutes during the midday period. On Saturdays, the Point Lookout route operates hourly service while the remaining two bus routes operate every 35 minutes. No other bus routes operate on Saturdays. Finally, on Sundays the Point Lookout route is not operated and the remaining two bus routes operate every 35 minutes.

As seen in Table 15, on weekdays and on Saturdays the Point Lookout route operates between about 7:00 AM and 8:00 PM; this bus route does not operate on Sundays. The Shoppers’ Special operates only during the weekday midday period between approximately 10:00 AM and 3:00 PM. Finally, the two remaining routes operate between approximately 5:30 AM and 11:15PM on weekdays and between about 6:30 AM and 9:30 PM on both Saturday and Sunday.

Table 13: Route Descriptions, City of Long Beach Transit

Bus Route	Between	And
East Loop	Long Beach LIRR Station	East Broadway & Maple Blvd.
West End	Long Beach LIRR Station	West Beech St. & Nevada Ave.
Shoppers' Special	Long Beach LIRR Station	East Broadway & Maple Blvd. <i>or</i> Lindell Blvd. & West Hudson St.
Point Lookout (N69)	Long Beach LIRR Station	Point Lookout

Source: City of Long Beach Website, Autumn 2005

Table 14: Frequency of Service in Minutes, City of Long Beach Transit

Bus Route	AM Peak	Midday	PM Peak	Saturday	Sunday
East Loop	15	40	20	35	35
West End	15	40	20	35	35
Shoppers' Special <i>(East Side)</i>	--	60	--	--	--
Shoppers' Special <i>(West Side)</i>	--	60	--	--	--
Point Lookout (N69)	60	60	60	60	--

Source: City of Long Beach Website, Autumn 2005

Table 15: Span of Service, City of Long Beach Transit

Bus Route	Direction	Weekday		Weekend	
		Start	End	Start	End
East Loop	Eastbound	5:45AM	11:10 PM	6:30 AM	9:15PM
	Westbound	5:12AM	11:25PM	6:45AM	9:30 PM
West End	Eastbound	5:12AM	11:25PM	6:45AM	9:30 PM
	Westbound	5:00 AM	11:10 PM	6:30 AM	9:15PM
Shoppers' Special <i>(East Side)</i>	Eastbound	9:30 AM	2:45PM	--	--
	Westbound	9:45AM	3:00 PM	--	--
Shoppers' Special <i>(West Side)</i>	Eastbound	10:15AM	3:30 PM	--	--
	Westbound	10:00 AM	3:15PM	--	--
Point Lookout (N69) <i>(Saturday only on weekend)</i>	Eastbound	6:45AM	8:00 PM	6:45AM	8:00 PM
	Westbound	7:00 AM	8:22PM	7:00 AM	8:22PM

Source: City of Long Beach Website, Autumn 2005

The fare structure for the City of Long Beach Transit service is shown in Table 16. The City of Long Beach Transit service also offers the "UniTicket" which allows for transfers to and from the MTA Long Island Rail Road.

Table 16: City of Long Beach Transit Fare Structure

Fare	Amount In Long Beach	Amount To Point Lookout
Base cash fare	\$1.50	\$2.00
Student fare (through Grade 12)	\$0.50	\$0.75
Senior citizen fare (except weekday peak periods)	\$0.50	\$0.75
Handicapped fare	\$0.50	\$0.75
Children under 5 years old	Free	Free

Source: City of Long Beach Website, Autumn 2005

Other Bus Services

There are several other bus services operating throughout Nassau and Suffolk Counties. These operations are described below.

Stony Brook University

As seen in Table 17, Stony Brook University operates an on-campus bus service connecting the various parts of the campus with each other, with remote parking lots and with the MTA Long Island Rail Road train station. There is no fare for this service.

Table 17: Route Descriptions, Stony Brook University Service

Bus Route	Between	And
Hospital/Chapin Route	South "P" Lot	Child Care
Outer Loop	Student Activity Center	Circle
Inner Loop	Student Activity Center	Dining Hall
Express	Student Activity Center	South "P" Lot
Railroad	Student Activity Center	Stony Brook LIRR Station
Alternate (<i>Weekends</i>)	South "P" Lot	Dental School
Mall 1 (<i>Saturdays</i>)	South "P" Lot	Target
Mall 2 (<i>Sundays</i>)	South "P" Lot	Sears
Railroad 1 (<i>Sundays</i>)	South "P" Lot	Stony Brook LIRR Station <i>via</i> H Quad
Railroad 2 (<i>Sundays</i>)	South "P" Lot	Stony Brook LIRR Station <i>via</i> Dining Hall

Source: Stony Brook University website, Autumn 2005

Adelphi University

Adelphi University operates a shuttle service that connects students to local transportation facilities and retail and entertainment centers. The shuttle provides approximately 100,000 trips per year. Service is provided by a fleet of small busses. As illustrated in Table 18, the current shuttle operates a circulator service with up to twelve stops, seven days per week, between the hours of 7:15 AM and 12:30 AM, depending on the day of the week. Shuttle schedules are set at the beginning of each semester, but are subject to change if the local public transportation's schedule changes. There is no fare for this service.

Village of Patchogue

The Village of Patchogue operates four bus routes that circulate throughout the Village, as shown in Table 19. The fare for this service is always \$0.25 for each boarding passenger.

Table 18: Adelphi University Shuttle Service

Shuttle Stop	Monday-Thursday Service		Friday Service		Saturday Service		Sunday Service	
	AM	PM	AM	PM	AM	PM	AM	PM
Adelphi University-between Post Hall & Alumnae Hall	X	X	X	X				
Adelphi University-University Center, East Side		X		X	X	X	X	X
Nassau Boulevard LIRR Station	X	X			X	X	X	X
Mineola LIRR Station	X	X	X	X				X
Hempstead Bus Terminal	X	X	X	X	X	X	X	X
Roosevelt Field Mall-Macy's, south entrance		X		X (Incl. 12:00 AM)		X (Incl. 12:00 AM)	X	X
Roosevelt Field Mall-Loews Movie Theater				X (Incl. 12:08 AM)				
The Source Mall-Fortunoff's, west entrance					X	X	X	X
Target					X	X		X
Liquidators on Hempstead Turnpike, west side of store						X		X
Seventh St. & Franklin Ave.					X	X	X	X
Cherry Valley Shopping Center- Astoria Federal Savings Bank		X		X	X	X	X	X

Source: Adelphi University website, Autumn 2006

Table 19: Route Descriptions, Village of Patchogue

Bus Route	Between	And
1 South	Downtown*	South Ocean and Smith
2 South	Downtown*	River and Bayview Apts.
3 North	Downtown*	Northwood Village
4 North	Downtown*	Sunwave Plaza

* Downtown Terminal located in municipal parking lot at Terry Street and Taylor Lane.

Source: Village of Patchogue website, Autumn 2005

City of Glen Cove

As shown in Table 20, Glen Cove operates two bus routes: one which circulates throughout the city and another which connects downtown with an MTA Long Island Rail Road station. The fare for this service is always \$1.00 for each boarding passenger.

Table 20: Route Descriptions, City of Glen Cove

Bus Route	Between	And
Glen Cove Loop Bus	Morgan Park	Landing Road
Glen Cove Commuter Bus	City Hall	Sea Cliff LIRR Station

Source: City of Glen Cove website, Autumn 2005

Greyhound Lines

This national intercity bus operator operates relatively little service on Long Island; one route connects Islip with New York City. The fare for this service varies greatly depending on the final destination; however, Greyhound charges approximately \$5.00 for travel between Islip and the Port Authority Bus Terminal in Manhattan.

Hampton Jitney

This operator provides service between Manhattan and either Westhampton or Montauk. Additional service is also provided during the summer months. The fare structure is presented in Table 21.

The Hampton Jitney service, as well as the Hampton Luxury Liner described subsequently, operate frequencies of service that vary throughout the year depending on the overall level of demand for travel. The number of trips operated can vary depending on the day of the week, the time of the year, and whether or not it is a holiday weekend, among several other factors. This type of service is too complex to comprehensively illustrate on a summary table.

It should be kept in mind that these bus services provide a premium product connecting New York City with the Hamptons beach communities in Suffolk County and may not be an entirely accurate indicator of the use of transit service within Suffolk County communities, especially since these bus lines are oriented to providing “express” (i.e., non-stop) service between the Hamptons and New York City. It would be very difficult to utilize these services to travel around communities on Long Island, which is the focus of the current study effort. In fact, only several buses in the Hampton Jitney fleet are wheelchair accessible, and reservations for their use must be made at least two days in advance. This contrasts significantly with Suffolk County Transit, which has a bus fleet that is entirely wheelchair accessible.

Table 21: Hampton Jitney Fare Structure

Fare Type	One Way	Round Trip
Daily	\$29.00	\$51.00
<i>Special Tuesday through Thursday Fares on Montauk Line</i>		
Senior Citizens/Children under 12	\$25.00	\$47.00
<i>Special Tuesday through Thursday Fares on Westhampton Line</i>		
General Public	\$25.00	\$47.00
Senior Citizens/Children under 12	\$20.00	\$40.00 same day \$42.00 open return

Source: Hampton Jitney website, Autumn 2005

Hampton Luxury Liner

This operator provides service between Manhattan and Southampton. Additional service is also typically provided during the summer months. The fares are \$34.00 one-way, \$62.00 round trip and a ten-trip book for \$259.00. Senior citizens receive a ten percent discount on all fares.

Bus Services Provided by Other Private and Institutional Entities

Additional bus services are currently offered by Hofstra University, Dowling College, Shortline Coach USA, and Adirondack Trailways. Some of these services function as local shuttles and circulators on campuses, while others focus on service between Long Island communities and Manhattan or other destinations.

Rail Service

Passenger rail service in both Nassau and Suffolk Counties is provided by the Metropolitan Transportation Authority through the MTA Long Island Rail Road. The “LIRR”, as it is popularly known, is primarily a commuter railroad. As such, its mission is oriented to serving east-west patterns of movement through Long Island that connect the various suburban communities with New York City.

Providing for “intra-Island” movement via the LIRR can at times be difficult, especially if the desire is to travel in a north-south pattern of movement. As can be seen in Table 22, 10 of the LIRR’s

Table 22: Route Descriptions, MTA Long Island Rail Road

Route	Between	And
Babylon Branch	City Terminal Zone	Babylon
Belmont Park Spur (Racing Season Only)	City Terminal Zone	Belmont Park
City Terminal Zone	Pennsylvania Station Flatbush Avenue Long Island City Hunterspoint Avenue	Jamaica
Far Rockaway Branch	City Terminal Zone	Far Rockaway
Hempstead Branch	City Terminal Zone	Hempstead
Long Beach Branch	City Terminal Zone	Long Beach
Montauk Branch	City Terminal Zone	Montauk via Babylon, Patchogue and Speonk
Oyster Bay Branch	City Terminal Zone	Oyster Bay
Port Jefferson Branch	City Terminal Zone	Port Jefferson via Huntington
Port Washington Branch	Pennsylvania Station	Port Washington
Ronkonkoma Branch	City Terminal Zone	Greenport via Ronkonkoma
West Hempstead Branch	City Terminal Zone	West Hempstead

Source: MTA Long Island Rail Road timetables, Autumn 2005

branches serve Nassau and Suffolk Counties. Although Belmont Park is in Nassau County, the Belmont Park Spur has only one station in Nassau County (i.e., at the racetrack itself) and is connected directly with Jamaica, in Queens.

Of the 10 branches that serve Nassau and Suffolk Counties, only the Port Washington Branch connects directly with Pennsylvania Station in Manhattan without first traveling through Jamaica. The remaining nine branches all travel between various locations in Nassau and Suffolk Counties and Jamaica station in Queens, which is the “hub” of the LIRR. The trains operate between their respective branches and Jamaica; they then continue to operate as a “City Terminal Zone” train between Jamaica and one of the four western terminals. Most trains serve Pennsylvania Station in Manhattan, with Flatbush Avenue in Brooklyn having the next most frequent service.

Most of the LIRR is electrified; only the Oyster Bay Branch and the Montauk Branch are not electrified. The Port Jefferson Branch is electrified as far east as Huntington, and the Ronkonkoma Branch is electrified as far east as Ronkonkoma. As can be seen in Table 23, the availability of

Table 23: Frequency of Service in Minutes, MTA Long Island Rail Road

Railroad Route	AM Peak	Midday	PM Peak	Weekends
Babylon Branch	5	20	5	30
Belmont Park Spur (Racing Season Only)	--	2 trips	2 trips	4 trips
City Terminal Zone (Pennsylvania Station)	4	8	3	10
City Terminal Zone (Flatbush Avenue)	7	30	7	30
City Terminal Zone (Long Island City)	31	--	37	--
City Terminal Zone (Hunterspoint Avenue)	19	--	25	--
Far Rockaway Branch	10	30	10	30
Hempstead Branch	18	60	23	60
Long Beach Branch	14	30	14	60
Montauk Branch (up to the Patchogue Station)	25	60	30	60
Montauk Branch (up to the Montauk Station)	1 trip	2 trips	88	120
Oyster Bay Branch	30	60	36	120
Port Jefferson Branch (up to the Huntington Station)	8	24	7	26
Port Jefferson Branch (up to the Port Jefferson Station)	30	90	22	90
Port Washington Branch	10	30	10	60
Ronkonkoma Branch (up to the Ronkonkoma Station)	13	60	16	60
Ronkonkoma Branch (up to the Greenport)	1 trip	2 trips	1 trip	2 trips
West Hempstead Branch	43	120	35	120

Source: MTA Long Island Rail Road timetables, Autumn 2005

electrification affects the frequency of service that is operated. However, the LIRR utilizes “dual mode” locomotives that allow at least a few “one-seat rides” to be operated during the peak periods between most of the non-electrified areas and Pennsylvania Station.

In the aggregate, the LIRR operates a very frequent level of service. The frequency of service for each branch is shown in Table 23. Some branches of the LIRR operate very frequently (e.g., Babylon, Port Washington, Port Jefferson as far as Huntington, etc.); however, it should be noted that some branches are broken up into “zones” and not all stations are served by all trains, especially during the peak periods. Although this facilitates quick travel to and from Manhattan, it makes it more difficult to travel within Long Island on the LIRR, as was previously mentioned. Where the LIRR is least frequent is on the “East End” of Suffolk County, on the North and South Forks. The North Fork - served by that portion of the Ronkonkoma Branch between Ronkonkoma and Greenport - sees very few trains each day. The South Fork, served by the Montauk Branch, sees only a few more trains than the North Fork. It should be noted that the LIRR typically increases service to and from the South Fork during the summer months, especially on weekends, to serve the Hamptons beach communities. Nonetheless, the use of the MTA Long Island Rail Road as a regular commuter service is significantly more difficult on the East End than at other locations on Long Island. In fact, the comparatively low frequency of train service on the East End and the difficulty of making reverse commute trips were also identified as service gaps by participants in issue and focus group meetings, as presented in Section 3.3.3.

It should be noted that, for the portion of the Montauk Branch between Patchogue and Montauk, Table 23 indicates a weekend frequency of 120 minutes. However, as was previously mentioned, some branches are broken up into “zones” and not all stations are served by all trains. This is the case on this portion of the Montauk Branch, where service between Patchogue and Speonk operates more frequently than service between Speonk and Montauk. Table 23 indicates the situation during late 2005, and the frequency of service indicated includes service at Speonk as well as points east of that location.

However, as was also previously mentioned, service east of Speonk to the South Fork communities on the East End of Long Island has a comparatively low frequency of train service (i.e., less service is provided than at points west of Speonk or west of Patchogue on the Montauk Branch). In fact, according to the MTA Long Island Rail Road timetable effective February 26th, 2007, there are only four eastbound and three westbound weekend trains on the outermost (i.e., easternmost) portion of the Montauk Branch serving the East End’s South Fork communities.

Table 24 illustrates the span of service provided by the LIRR. As can be seen, with only some limited exceptions (e.g., the East End of Suffolk County), service on the MTA Long Island Rail Road operates essentially 24 hours a day, seven days a week. The times shown in Table 24 refer to the departure of the first train from the originating station and the arrival of the last train at the originating station. Therefore, for all intents and purposes, the MTA Long Island Rail Road is a “round the clock” operation.

Finally, the LIRR’s fare structure is too complex to fully illustrate in one table. As a commuter railroad, the LIRR divides itself into various fare zones. Each fare zone has a set fare structure in relation to every other zone. In addition, there are at least nine different fare instruments for each zone. Table 25 provides an example of the fares between New York City and two Long Island locations.

Table 24: Span of Service, MTA Long Island Rail Road

Railroad Branch	Direction	Weekdays		Weekends	
		Start	End	Start	End
Babylon	Westbound	12:57AM	11:45PM	12:57AM	11:45PM
	Eastbound	12:06AM	11:36PM	12:06AM	11:36PM
Belmont Park (seasonal)	Westbound	4:25PM	5:40 PM	4:25PM	5:40 PM
	Eastbound	11:45AM	1:09PM	11:37AM	12:30 PM
Penn Station	Westbound	12:04AM	11:52PM	12:12AM	11:53PM
	Eastbound	12:06AM	11:54PM	12:06AM	11:48PM
Flatbush Avenue	Westbound	12:04AM	11:33PM	12:19AM	11:53PM
	Eastbound	12:18AM	11:30 PM	12:18AM	11:48PM
Long Island City	Westbound	7:09AM	9:14AM	--	--
	Eastbound	3:24PM	5:52PM	--	--
Hunterspoint Avenue	Westbound	6:20 AM	8:53AM	--	--
	Eastbound	4:06PM	6:41PM	--	--
Far Rockaway	Westbound	12:39AM	11:27PM	12:39AM	11:47PM
	Eastbound	12:18AM	11:54PM	12:18AM	11:48PM
Hempstead	Westbound	12:05AM	11:01PM	12:05AM	11:23PM
	Eastbound	12:35AM	11:29PM	12:35AM	11:48PM
Long Beach	Westbound	12:28AM	10:51PM	12:28AM	11:16PM
	Eastbound	12:35AM	11:54PM	12:35AM	11:48PM
Montauk (to Patchogue)	Westbound	4:37AM	9:59PM	5:35AM	11:57PM
	Eastbound	6:36AM	10:29PM	7:27AM	11:05PM
Montauk (to Montauk)	Westbound	12:58AM	10:38PM	6:55AM	7:34PM
	Eastbound	12:35AM	8:30 PM	12:35AM	8:48PM

Table 24 (Continued)

Railroad Branch	Direction	Weekdays		Weekends	
		Start	End	Start	End
Oyster Bay	Westbound	5:12AM	11:28PM	6:03AM	10:03PM
	Eastbound	1:04AM	11:16PM	1:04AM	11:14PM
Port Jefferson (up to Huntington)	Westbound	12:16AM	11:06PM	12:16AM	11:34PM
	Eastbound	12:18AM	11:04PM	12:18AM	11:14PM
Port Jefferson (up to Port Jefferson)	Westbound	4:19AM	11:21PM	4:40 AM	11:39PM
	Eastbound	1:44AM	11:42PM	1:46AM	11:42PM
Port Washington	Westbound	12:39AM	11:39PM	12:39AM	11:39PM
	Eastbound	12:21AM	11:49PM	12:21AM	11:22PM
Ronkonkoma (up to Ronkonkoma)	Westbound	12:42AM	11:24PM	12:42AM	11:24PM
	Eastbound	12:18AM	11:16PM	12:18AM	11:14PM
Ronkonkoma (up to Greenport)	Westbound	5:30 AM	9:55PM	1:17PM	6:17PM
	Eastbound	7:39AM	5:41PM	9:14AM	2:14PM
West Hempstead	Westbound	5:37AM	11:31PM	6:46AM	10:46PM
	Eastbound	12:18AM	10:34PM	12:18AM	10:36PM

Source: MTA Long Island Rail Road timetables, Autumn 2005

Table 25: Sample MTA Long Island Rail Road Fares

Ticket Type	Between New York/Zone 1 and:	
	Mineola	Ronkonkoma
Monthly	\$178.00	\$267.00
Weekly	\$57.00	\$85.00
Off-Peak Ten-Trip	\$51.00	\$80.75
Peak Ten-Trip	\$82.50	\$130.00
Peak One-Way	\$8.25	\$13.00
Off-Peak One-Way	\$6.00	\$9.50
Senior Citizen/Disabled One-Way	\$4.00	\$6.50
Onboard Peak One-Way	\$13.00	\$18.00
Onboard Off-Peak One-Way	\$11.00	\$15.00

Source: MTA Long Island Rail Road timetables, Autumn 2005

In addition to the zone-based fares above, the LIRR - in conjunction with three of the four bus operators - also offers Long Island commuters a "UniTicket" program. The UniTicket is a special combination bus/rail ticket which is sold in conjunction with the LIRR's monthly and weekly passes. It allows commuters to connect between various bus routes and the LIRR without utilizing an additional fare instrument. The cost of a UniTicket varies depending on the zone for which it is valid. UniTickets are available for combination bus/rail travel on MTA Long Island Bus, Huntington Area Rapid Transit and the City of Long Beach Transit services.

Ferry Services

Table 26 describes the various ferry services connecting Long Island with other locations. These include services to Fire Island, across Long Island Sound, and to and from Montauk and Shelter Island.

Fire Island

Several ferry services connect the south shore of Long Island with various locations on Fire Island. These ferries tend to operate from Bay Shore, Sayville or Patchogue. Additional service is also typically provided during the summer months. Fare information was obtained for Fire Island Ferries and Sayville Ferry Service, as shown in Table 27.

Table 26: Route Descriptions, Ferry Services

Ferry Operator	Between	And
Fire Island National Seashore Ferry Services		
Bay Point Navigation Co.	Bay Shore	Point O'Woods
Davis Park Ferry Co.	Patchogue	Davis Park
Davis Park Ferry Co.	Patchogue	Watch Hill
Fire Island Ferries, Inc.	Bay Shore	Atlantique
Fire Island Ferries, Inc.	Bay Shore	Dunewood
Fire Island Ferries, Inc.	Bay Shore	Fair Harbor
Fire Island Ferries, Inc.	Bay Shore	Kismet
Fire Island Ferries, Inc.	Bay Shore	Ocean Bay Park
Fire Island Ferries, Inc.	Bay Shore	Ocean Beach
Fire Island Ferries, Inc.	Bay Shore	Saltaire
Fire Island Ferries, Inc.	Bay Shore	Seaview
Town of Islip	Sayville	Barrett Beach
Sayville Ferry Service, Inc.	Sayville	Cherry Grove
Sayville Ferry Service, Inc.	Sayville	Fire Island Pines
Sayville Ferry Service, Inc.	Sayville	Water Island
Sayville Ferry Service, Inc.	Sayville	Sunken Forest/Sailor's Haven
Long Island Sound Ferry Services		
Bridgeport & Port Jefferson Steamboat Co.	Port Jefferson	Bridgeport, CT
Cross Sound Ferry	Orient Point	New London, CT
Montauk Ferry Services		
Viking Ferry Lines	Montauk	Block Island, RI
Viking Ferry Lines	Montauk	Martha's Vineyard, MA
Viking Ferry Lines	Montauk	New London, CT
Shelter Island Ferry Services		
North Ferry	Greenport	Shelter Island Heights
South Ferry	North Haven	Shelter Island

Source: Various ferry operator websites, Autumn 2005

Table 27: Fire Island Ferry Service Fares

Fare Type	Fire Island Ferries	Sayville Ferry Service
One-Way Adult	\$7.25	--
Round-Trip Adult	\$14.00	\$12.00
40-Trip Adult Ticket Book	\$217.50	--
One-Way Child	\$3.50	--
Round-Trip Child	\$6.50	\$6.00
40-Trip Child Ticket Book	\$101.50	--
One-Way Senior Citizen/Disabled	\$5.75	--
Round-Trip Senior Citizen	--	\$8.00
Shopping Carts/Luggage Carriers	\$3.00 each	--

Long Island Sound

Two services operate between Long Island and Connecticut across Long Island Sound. One connects Port Jefferson with Bridgeport and the other connects Orient Point with New London. The ferry service to New London also has high speed passenger-only ferries known as the "Sea Jets". The fares for these services are shown in Table 28. It should be noted that various levels of fares for different types of vehicles are available; however, we are only illustrating those for passengers and automobiles due to space constraints.

Montauk Ferry Services

One ferry operator - Viking Ferry Lines - connects Montauk with Block Island, New London and Martha's Vineyard. This ferry service is primarily recreation-oriented. Service to Block Island operates between Memorial and Labor Day, with service to New London only operating regularly between approximately mid-June and early September. The service between Montauk and Martha's Vineyard is only offered during July and August. The fare to Block Island and Martha's Vineyard is \$25.00 each way. The fare to New London is \$45.00 round trip (no one-way fares are available to New London).

Shelter Island

Two ferries connect Shelter Island with Long Island. The North Ferry connects Greenport on the North Fork of Long Island with Shelter Island Heights, and the South Ferry connects Shelter Island with North Haven, on the South Fork of Long Island. Service on these ferries operates throughout the year. The fares for these services are shown in Table 29. It should be noted that various levels of fares for different types of vehicles are available; however, we are only illustrating those for passengers and automobiles.

Table 28: Long Island Sound Ferry Service Fares

Fare Type	Orient Point Ferry	Port Jefferson Ferry
Automobile and Driver	\$42.00	\$41.00
Auto and Unlimited Passengers	--	\$56.00
10-Trip Auto and Driver Book	\$333.00	--
Bicycles	\$3.00	--
Auto Passenger Adult One-Way	\$12.00	\$12.00
10-Trip Passenger Adult One-Way	\$90.00	--
Auto Passenger Adult Round Trip	\$20.00	--
Auto Passenger Child One-Way	\$6.00	Free
Auto Passenger Child Round Trip	\$10.00	--
Sea Jet Adult One-Way	\$17.50	--
10-Trip Sea Jet Adult One-Way	\$139.50	--
Sea Jet Adult Round Trip	\$28.00	--
Sea Jet Child One-Way	\$8.75	--
Sea Jet Child Round Trip	\$14.00	--
Foot Passenger - Adult	--	\$15.00 \$20.00 round trip
Foot Passenger - Child Age 6-12	--	\$5.00 \$8.00 round trip
Foot Passenger - Child to Age 6	--	Free
Foot Passenger - Senior Citizen	--	\$11.00 \$15.00 round trip
Foot Passenger - Monthly Pass	--	\$214.75

Source: Various ferry operator websites, Autumn 2005

Table 29: Shelter Island Ferry Service Fares

Fare Type	South Ferry	North Ferry
Auto One-Way Cash	\$10.00	\$9.00
Auto Round Trip Cash	\$12.00	\$13.00
Auto Passenger Each Way	--	\$1.00
10 Round Trip Auto Book	\$73.00	\$72.00
10 Round Trip Auto Book (Resident)	\$47.00	\$48.00
10 One-Way Auto Book	\$62.00	\$57.00
10 One-Way Auto Book (Resident)	\$45.00	\$45.00
5 Day Commuter Ticket	\$20.00	\$28.00 \$22.00 Resident
6 Day Commuter Ticket	\$23.00	\$33.00 \$26.00 Resident
7 Day Commuter Ticket	\$28.00	--
One-Way Foot Passenger	\$1.00	--
Round Trip Foot Passenger	\$2.00	--
30 Trip Book	\$25.00	--
30 Trip Book (Resident)	\$17.00	--
20 Tokens	--	\$20.00

Source: Various ferry operator websites, Autumn 2005

Service Levels

As shown in the previously mentioned service inventory tables, not only was the location of the various transit services presented, but the characteristics of the various services – such as the frequency of service and the span of service – were also considered. Maps were prepared illustrating much of this information; these maps were prepared utilizing route information obtained from the electronic transit geographic information systems files from the New York Metropolitan Transportation Council’s Best Practice regional travel model, which has route information for 2002.

The frequency of service was considered in terms of the morning and afternoon peak periods, as well as for the midday period. The span of service was considered for both the first and last trip on each service day, as well as for the days on which service was operated.

Service Days and Span of Service

As shown in Map 17, most of Nassau County has fixed route bus service every day (i.e., weekdays, Saturday and Sunday), with some parts of Nassau County having no Sunday service. However, some bus routes in the vicinity of Hempstead only operate on weekdays. Map 17 also indicates that most of Suffolk County sees fixed route bus service on weekdays and Saturdays, although the Huntington Area Rapid Transit feeder bus routes to LIRR stations operate only on weekdays. Finally, the MTA Long Island Rail Road operates seven days a week.

In terms of the time of the first transit service, Map 18 indicates that weekday bus service begins in most of Nassau County before 6:00 AM or between 6:00 AM and 8:00 AM. In Suffolk County, most bus service begins between 6:00 AM and 8:00 AM. Most MTA Long Island Rail Road service operates 24 hours a day, with some limited exceptions.

In terms of the time of the last transit service, Map 19 indicates that weekday bus service ends in most of Nassau County between 8:00 PM and 10:00 PM, or later than 10:00 PM. In Suffolk County, most bus service ends by 8:00 PM. As was previously mentioned, most MTA Long Island Rail Road service operates 24 hours a day, with some limited exceptions.

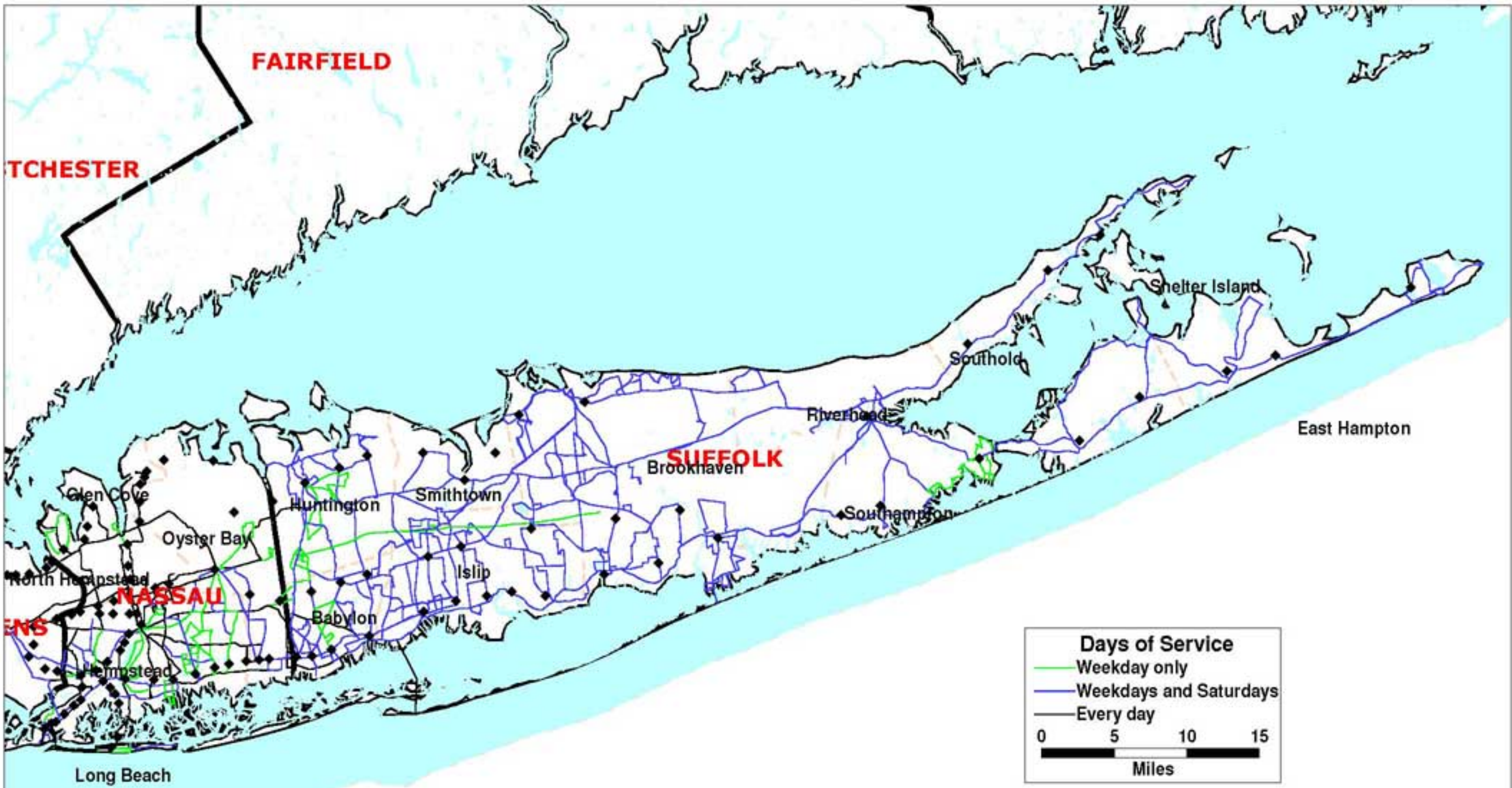
Frequency of Service

As can be seen in Map 20, the frequency of service during the morning peak period varies greatly both in terms of the mode of transit as well as in terms of geography. In Nassau County, the frequency of bus service during the morning peak period varies from 30 minutes or less in the western part of the county to between 30 and 90 minutes in the eastern part of the county. In Suffolk County, the frequency of bus service during the morning peak period ranges from every 30 minutes to every 90 minutes or greater. In terms of the MTA Long Island Rail Road, morning peak period frequencies are typically every 30 minutes or less in the electrified portions of the system (i.e., most areas west of central Nassau County, with the major exception of the Oyster Bay Branch). However, areas on the East End typically see only one train during the peak period.

As shown in Map 21, a similar pattern in terms of frequency of service during the afternoon peak period, with frequent service in the western part of Nassau County giving way to less frequent service as you move towards eastern Long Island.

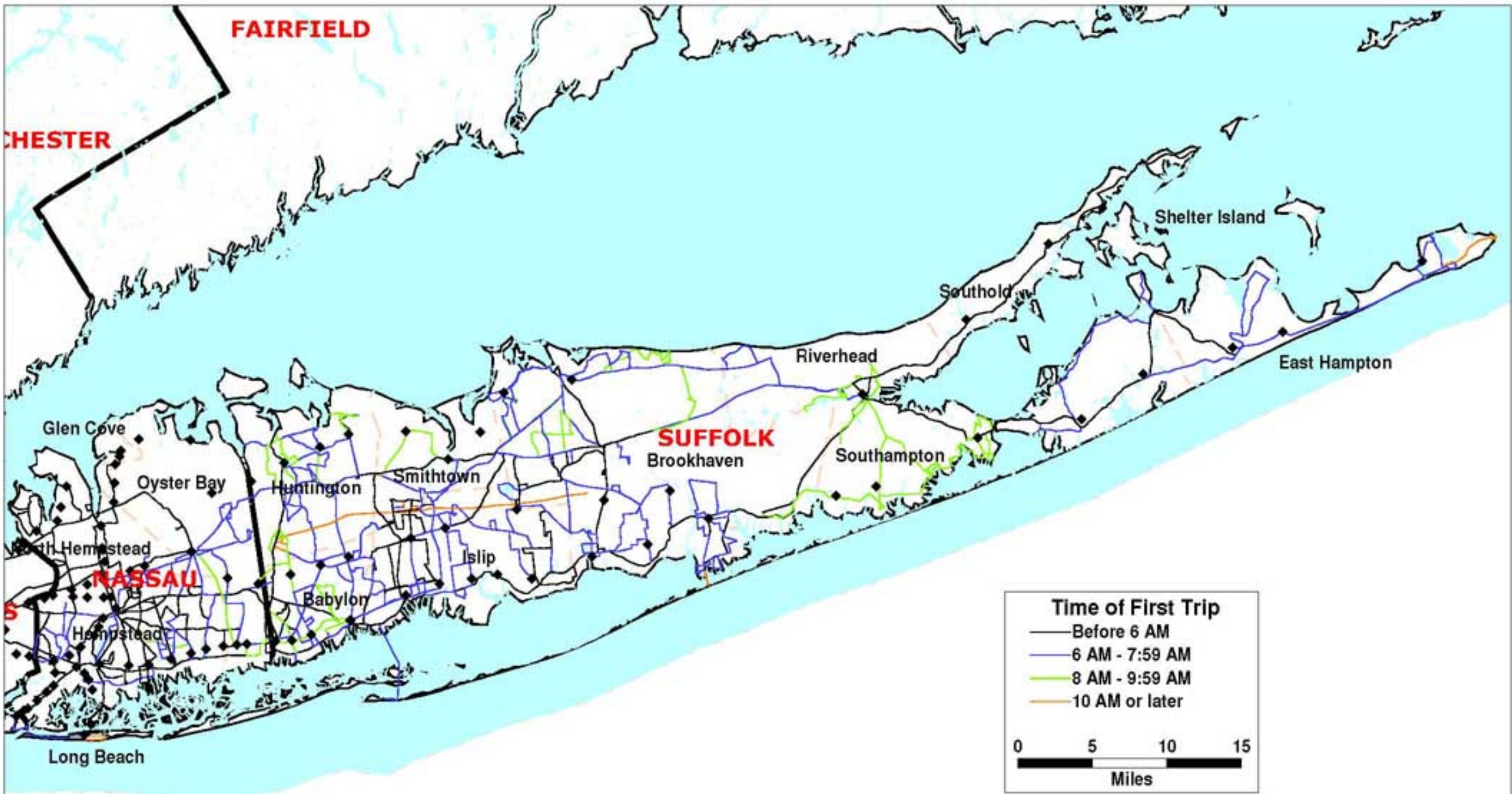
As observed in Map 22, the frequency of service during the midday period is similar to that during the peak periods in that the most frequent service occurs in western Nassau County, with service operating less frequently in eastern Nassau County and in Suffolk County. Overall, the time between trips during the midday period is greater than during the peak periods. The MTA Long Island Rail Road again exhibits characteristically frequent service in its electrified territory, with less frequent service on its diesel-powered branch lines.

As discussed earlier in Section 2, a general standard of three or more households per acre or four jobs /acre is used within the transit industry to identify areas that have enough density to support hourly fixed route bus service (although high density does not guarantee use of transit service, and fixed route service may succeed in lower density areas for a number of reasons). In the aggregate, the examination of both the transit services and their service levels indicate first that the fixed route transit services in Nassau and Suffolk Counties cover most transit-supportive areas. As seen in Map 23, the areas with densities supportive of fixed route service are also the areas that generally have the most fixed route transit service in terms of coverage, frequency and span of service.



Data Source: Provider Schedules
 Map Prepared by TranSystems

Map 17: Days of Service for Rail and Bus Service in Nassau and Suffolk Counties



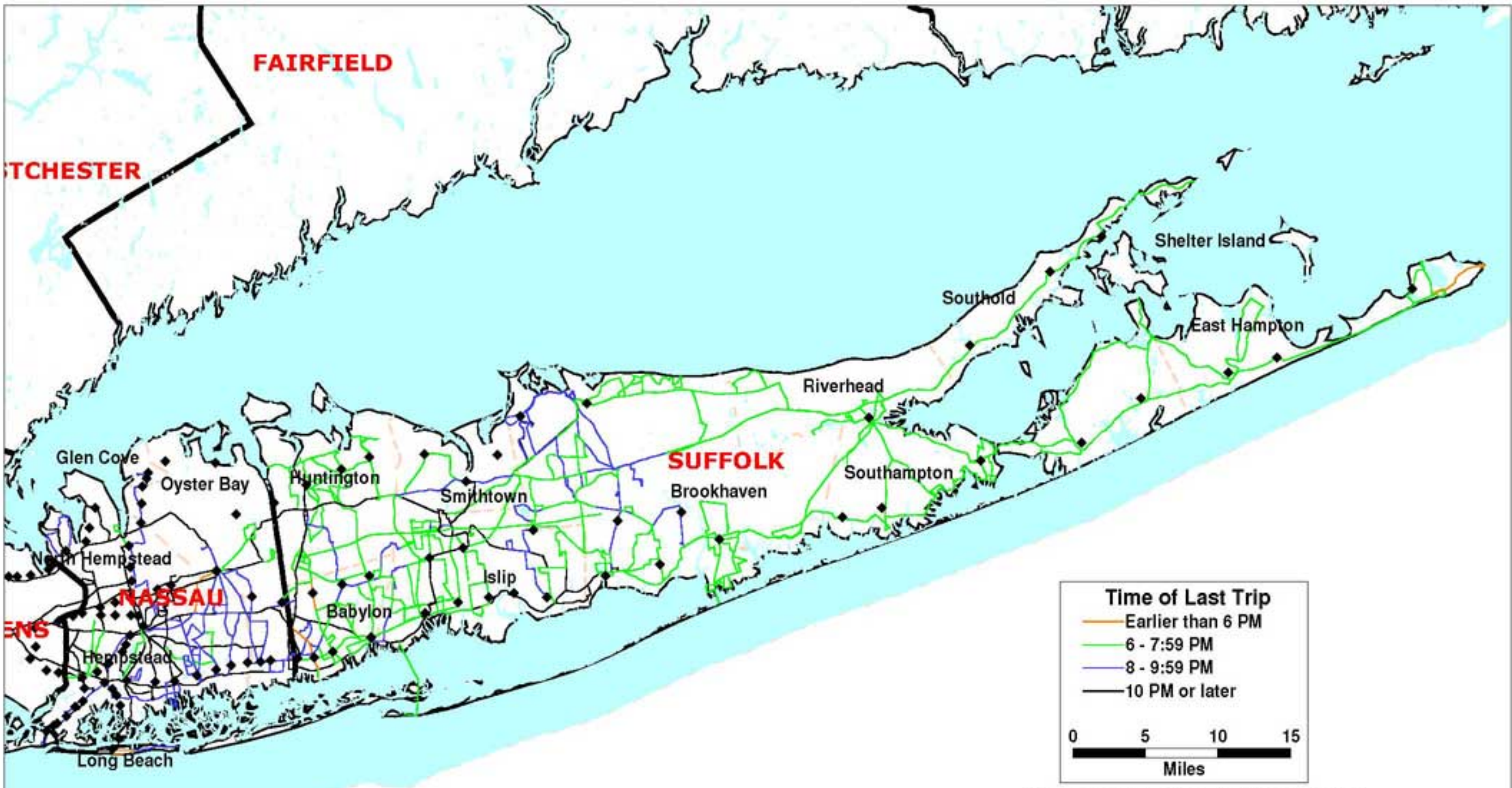
Time of First Trip

- Before 6 AM
- 6 AM - 7:59 AM
- 8 AM - 9:59 AM
- 10 AM or later

0 5 10 15
Miles

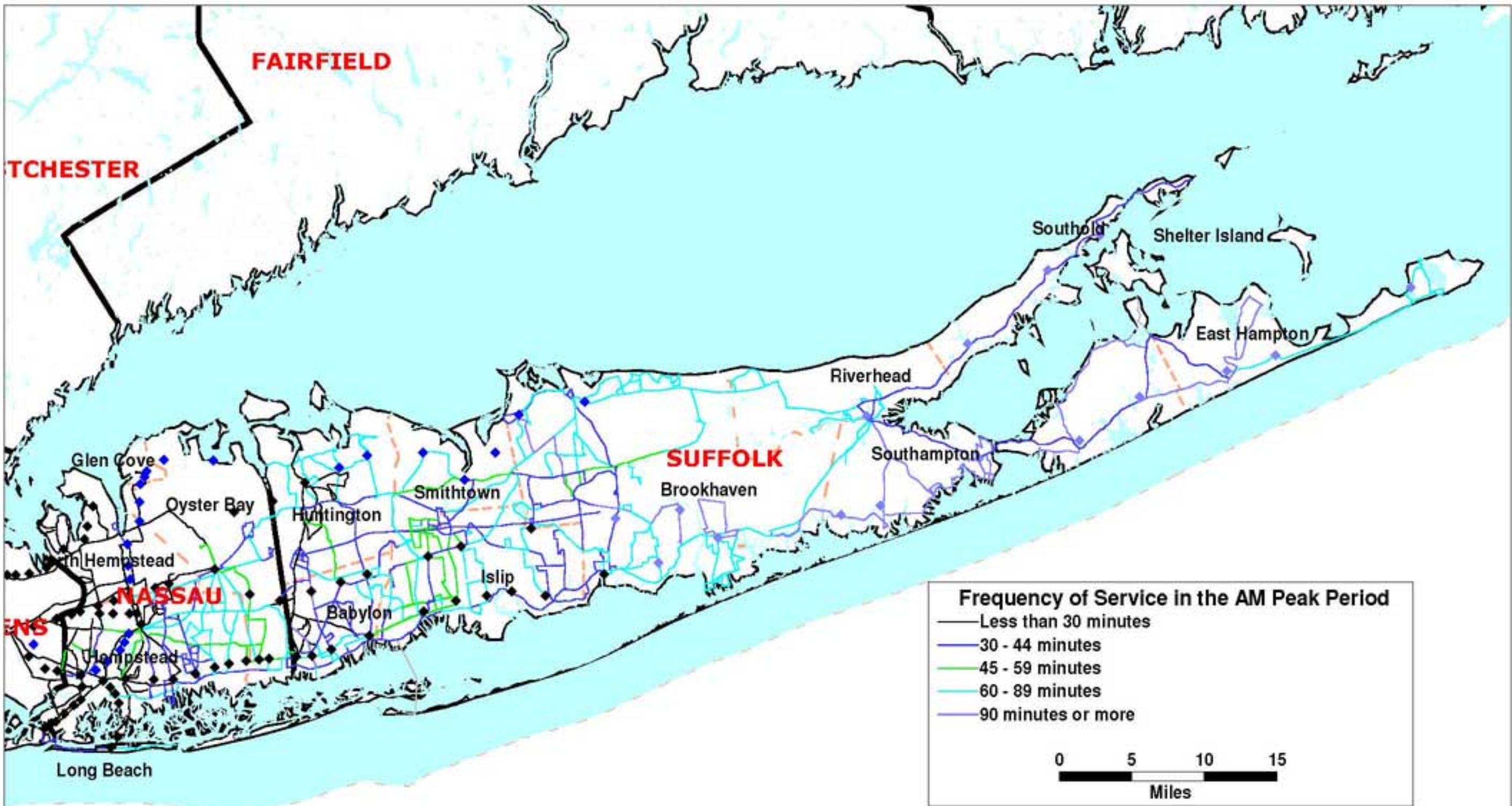
Data Source: Provider Schedules
Map Prepared by TranSystems

Map 18: Time of First Trip, Rail and Bus Service in Nassau and Suffolk Counties



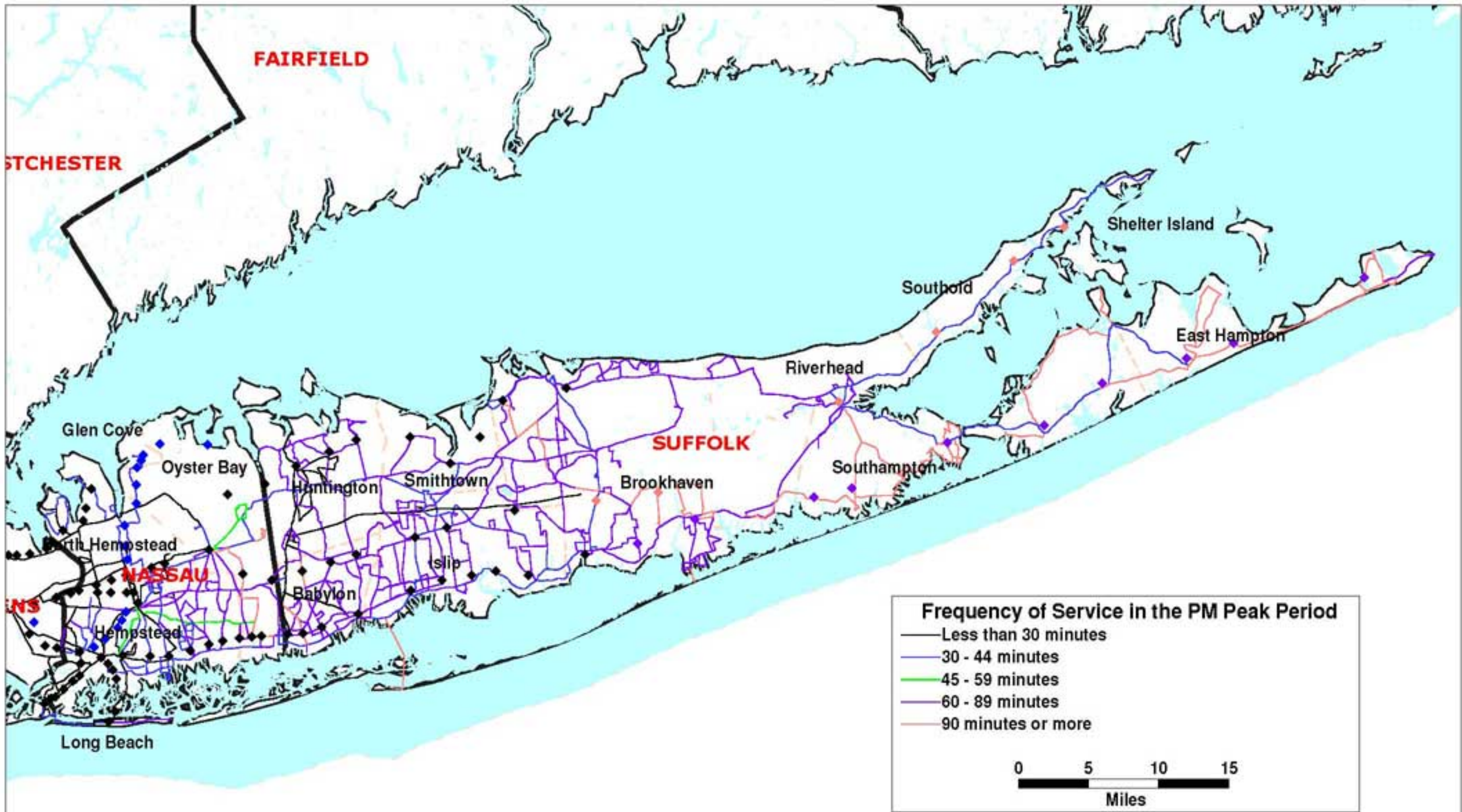
Data Source: Provider Schedules
 Map Prepared by TranSystems

Map 19: Time of Last Trip, Rail and Bus Service in Nassau and Suffolk Counties



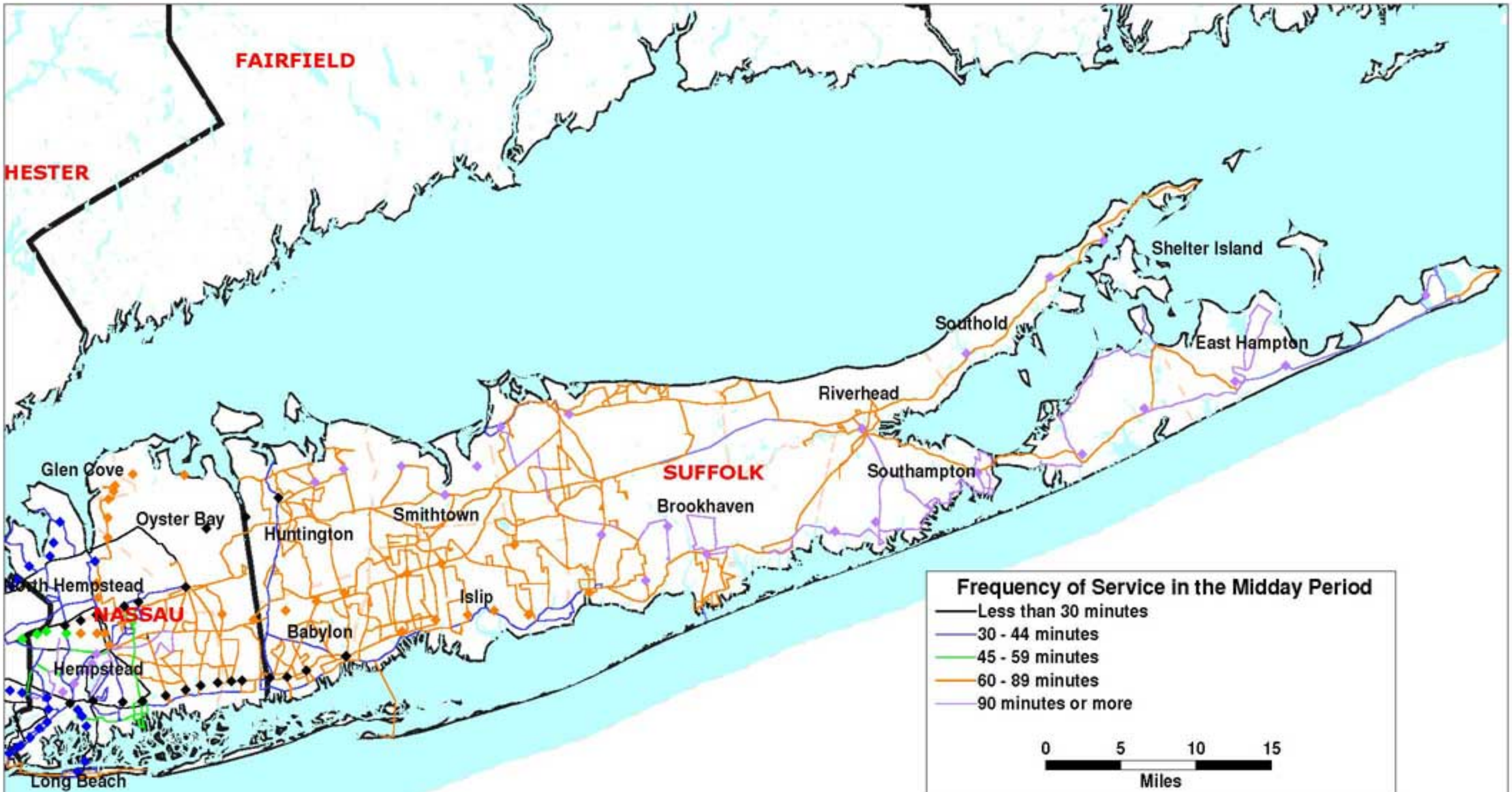
Data Source: Provider Schedules
 Map Prepared by TranSystems

Map 20: Frequency of Rail and Bus Service in the AM Peak Period



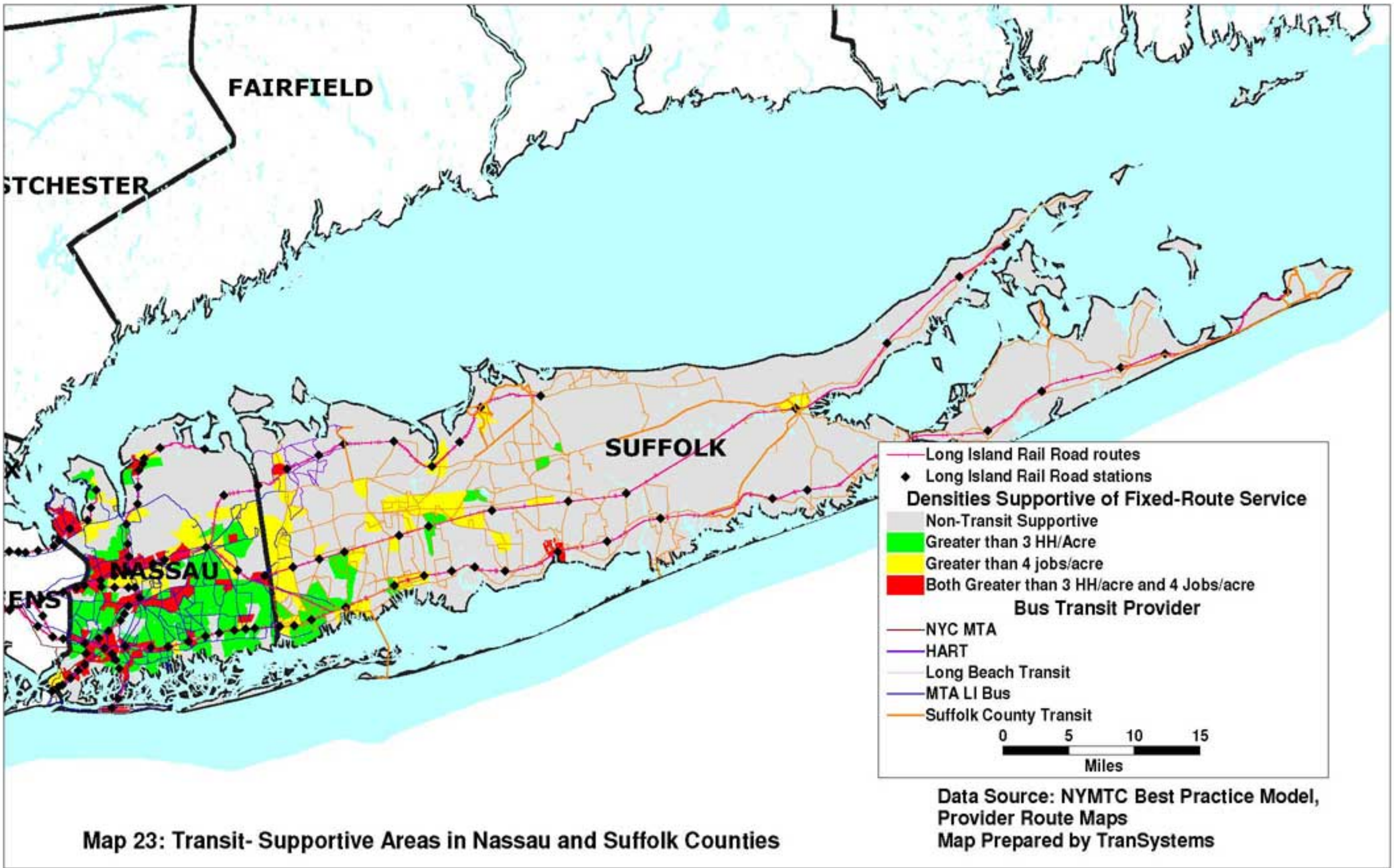
Data Source: Provider Schedules
Map Prepared by TranSystems

Map 21: Frequency of Rail and Bus Service in the PM Peak Period



Data Source: Provider Schedules
Map Prepared by TranSystems

Map 22: Frequency of Rail and Bus Service in the Mid-day Period



Map 23: Transit-Supportive Areas in Nassau and Suffolk Counties

Data Source: NYMTC Best Practice Model, Provider Route Maps
 Map Prepared by TranSystems

2.2.2 Demand Response Services

A number of demand response transportation services are available to Long Island residents. These services are provided by public transportation agencies, human service agencies, non-profit organizations, and other private entities. Many of these services are targeted to a specific population, such as seniors and/or persons with disabilities. Some services are limited to a specific geographic area or a certain type of trip purpose, such as trips to medical appointments.

Over two dozen demand response transportation providers were identified during the Access to Transportation on Long Island study; those providers are listed in Table 30. Specific information about services, however, was difficult to obtain. Several of the providers responded to a survey designed to gather more facts about available services; other information was compiled from online and printed sources. Service information is summarized in Table 31. The limited number of providers for which data was available operate 185 vehicles, provide nearly 526,000 one-way passenger trips per year, and have combined operating budgets of \$1.1 million.

The four fixed route bus operators each provide complementary paratransit services for individuals with disabilities within $\frac{3}{4}$ mile on each side of their bus routes as required by the Americans with Disabilities Act (ADA). Note that Able-Ride service in Nassau County is not restricted to a corridor surrounding LI Bus routes. ADA complementary paratransit service is available to individuals who are unable to use accessible fixed route transportation because of a disability.² Rides are available during the same operating hours as the fixed route service, and services meet other criteria that ensure comparability with the fixed route services.

The majority of other demand response services are provided by town senior citizen divisions or departments of human services, and serve seniors and/or persons with disabilities. Eligibility is established by the service provider and often requires town residency or a minimum age. Rides from these providers are often limited to origins and destinations within the town's boundaries and typically are available only on weekdays. The purpose of the trips allowed is also at the discretion of the provider, with many concentrating on medical, shopping or recreational trips.

² Section 223 of the ADA requires the provision of paratransit service:

(i) to any individual with a disability who is unable, as a result of a physical or mental impairment (including a vision impairment) and without the assistance of another individual (except an operator of a wheelchair lift or other boarding assistance device), to board, ride, or disembark from any vehicle on the system which is readily accessible to and usable by individuals with disabilities;

(ii) to any individual with a disability who needs the assistance of a wheelchair lift or other boarding assistance device (and is able with such assistance) to board, ride, and disembark from any vehicle which is readily accessible to and usable by individuals with disabilities if the individual wants to travel on a route on the system during the hours of operation of the system at a time (or within a reasonable period of such time) when such a vehicle is not being used to provide designated public transportation on the route; and

(iii) to any individual with a disability who has a specific impairment-related condition which prevents such individual from traveling to a boarding location or from a disembarking location on such system.

Table 30: Demand Response Transportation Providers on Long Island

Long Island Bus – Able-Ride	Town of Brookhaven, Senior Citizen Division
Suffolk County Transit – Suffolk County Accessible Transportation	Town of East Hampton, Senior Citizen Division and Department of Human Services
Huntington Area Rapid Transit	Town of Hempstead, Department of Senior Enrichment
Long Beach Transit	Town of Huntington, Senior Citizen Division and Department of Human Services
Jewish Association for Services for the Aged:	Town of Islip, Senior Citizen Division
○ Long Beach, Senior Center	Town of North Hempstead, Department of Senior Enrichment
○ Nassau County Service Center	Town of Oyster Bay, Oyster Bay Senior Community Service Center
○ Smithtown Jewish Association Senior Service Center	Town of Riverhead, Senior Citizen Division
○ AZORS Social Adult Day Program	Town of Shelter Island, Senior Citizen Division and Department of Human Services
○ Commack Senior Center	Town of Smithtown, Senior Citizen Division and Office of Handicapped Services
Economic Opportunity Commission	Town of Southampton, Senior Citizen Division and Department of Human Services
Nassau County Department of Social Services	Town of Southold, Senior Citizen Division and Department of Human Services
Suffolk County Department of Social Services	Disabled Veterans Volunteer Transportation Network
City of Glen Cove, Glen Cove Senior Community Service Center	Friends in Service to Humanity (FISH)
Town of Babylon, Senior Citizen Division	

**Table 31:
Long Island Demand Response Transportation Service Information**

Service Provider	Type of Service*	Service Area	Eligibility	Trip Purposes	Level/Span of Service	One Way Fare	Annual Operating Budget	Annual Pass. Trips	Fleet Size	Vehicle Accessibility
1 Able-Ride Operated by Long Island Bus	Curb-to-curb ADA paratransit service	Within Nassau County. Also, from Nassau County to points east in Suffolk County or points west in NYC by transferring to SCAT or NYC's Access-A-Ride	People with disabilities who are unable to use fixed route bus service for some or all of their trips. Age, distance from bus stop, or inability to drive are not taken into consideration in making eligibility determinations	All types	Mon-Fri 7AM to 11PM Sat 8AM to 9PM Sun 9AM to 6:30 PM. All other times, Able-Ride only provides trips that start & end within ¼ mile of fixed route service that is operating at the time the customer wishes to travel.	\$3.50 - one-way Personal care attendant (PCA) rides for free.	N/R	318,377	96	N/R
2 SCAT operated by Suffolk County Transit	Curb-to-curb ADA paratransit service	Pick-up and drop off between any two points in Suffolk County within ¼ mile of a SCT or HART bus route.	Permanent or temp disability that prevents person from using regular SCT bus service	Social, recreational, medical, work, and shopping	Mon-Fri 6AM to 8:30 PM Sat 7AM to 8:30 PM Sun & holiday service is available only to and from points within ¼ mile of SCT routes that operate on those days.	\$3.00 Companion - \$3.00 PCAs ride for free Children under five ride for free	N/R	167,404	64	N/R
3 HART ADA operated by Huntington Area Regional Transit	Curb-to-curb ADA paratransit service	Within the Town of Huntington	Persons who cannot use regularly scheduled fixed route bus service because of disability. Must be approved by health care professional before utilizing service.	Health/medical, nutrition, social, recreation, education/ training, social services	Mon-Fri 6AM to 8PM Sat 9AM to 7PM Sun no service	\$1.25 each way	\$606,000	16,300	39,178	All
4 Long Beach Transit	Curb-to-curb ADA paratransit service	Long Beach, Lido, and Point Lookout	Persons who cannot use regularly scheduled fixed route bus service because of disability. Must be approved by health care professional before utilizing service.		Mon-Fri 5:30AM to 11:30PM Sat 6:15AM to 9:30PM Sun 6:15AM to 9:30PM	\$0.50	N/R	7,660	2	N/R
6 Commack Senior Center Y-JCC	Home-to-center service for members	Based on membership	Center membership	Visiting center for multiple purposes: nutrition, exercise, lectures, entertainment	N/R	N/R	N/R	N/R	3 vans	N/A
7 Oyster Bay Senior Community Service Center	Door-to-door demand response	Oyster Bay area	Medical and shopping	Seniors only	N/R	N/R	N/R	N/R	N/R	N/R
8 Southold Senior Transportation Program operated by the Southold Senior Citizen Division	Demand responsive trips for disabled residents/seniors	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
9 Glen Cove Senior Community Service Center	Food shopping shuttle	City of Glen Cove	Seniors	Shopping	N/R	N/R	N/R	N/R	N/R	N/R

	Service Provider	Type of Service*	Service Area	Eligibility	Trip Purposes	Level/Span of Service	One Way Fare	Annual Operating Budget	Annual Pass. Trips	Fleet Size	Vehicle Accessibility
20	Town of East Hampton Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of East Hampton	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
21	Town of Shelter Island Dept. of Human Services, Senior Citizens Affairs Council	Demand responsive trips for disabled residents/seniors	Town of Shelter Island	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
22	Disabled Veterans Volunteer Transportation Network	Demand responsive trips for disabled residents/seniors	Suffolk County	N/R	N/R	N/R	Free	N/R	N/R	N/R	N/R
23	Medicaid Nassau County DSS - contract through Globe Ground Transportation	Demand responsive service for eligible Medicaid recipients	5 mile radius beyond Nassau County line	Medicaid eligible individuals approved for transportation	Health/medical	24 hours 7 days per week	N/A	N/A	3,094	N/A	N/A
24	Nassau County Dept of Mental Health, Retardation, and Developmental Disabilities	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
25	Suffolk County DSS	Demand responsive Medicaid transportation	Suffolk County	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

NA Not applicable

\$1,129,842 525,993 39,340

NR Not available/no response

Human service agencies and other non-profit organizations on Long Island also provide demand response service for clients. Agencies with transportation programs include state or county agencies and private non-profit organizations. Nassau and Suffolk County Departments of Social Services both offer transportation to Medicaid recipients. The rides are limited to medical appointments in or within a set distance of the county boundaries. The Nassau Department of Mental Health, Retardation, and Developmental Disabilities; Developmental Disabilities Institute; Family Service League; EOC; Community Housing Innovations; and UCP Suffolk, to name a few agencies, also provide rides to their clients. One volunteer organization provides veterans with non-emergency medical transportation within Suffolk County. A number of faith-based organizations (such as individual parish outreach programs and Dominican Sisters of Nassau County), medical facilities and organizations, and residential facilities also operate vehicles or administer volunteer driver programs to provide rides for certain types of individuals or trip purposes.

A number of these demand response service providers, along with other non-profit organizations have received capital assistance from the Federal Transit Administration's Section 5310 program, which supports service for older adults and persons with disabilities, and is administered by the New York State Department of Transportation. Section 5310 recipients are listed in Table 32.

2.2.3 Other Transportation Resources

In addition to fixed route and demand response transportation services, other modes of transportation contribute to adequate access on Long Island. Data was collected on topics including ridesharing (or carpooling), car-sharing, school transportation, bicycling, and taxi services.

Ridesharing

Several organizations currently administer ridesharing programs on Long Island. Long Island Transportation Management (LITM) is a not-for-profit agency that administers to the commuting needs of employers and employees with at least one end of their commute in Long Island. LITM offers carpooling and vanpooling assistance through its Commuter Choice Program. LITM maintains an online database of individuals who are interested in being matched with other commuters to create a car- or vanpool. One can also use the LITM database to locate ride-sharing for long-distance and one- time trips.

Other elements of the Commuter Choice Program include:

- **Bicycle Locker Program:** LITM maintains enclosed lockers at fifteen Long Island Railroad stations and one Park-and-Ride lot. Users pay a one-time refundable key deposit of \$20.00 and an annual rental fee of \$60.00 for use of a single, enclosed locker for bicycle storage at one of the sixteen locations.
- **Long Island Region Improving Commuting (LIRIC) Grants:** Partners are eligible to apply for grants funded by the New York State Department of Transportation and administered through LITM. These grants are designed to provide financial assistance to employers wishing to implement commuter alternative programs aimed at reducing traffic congestion. Eligible projects include carpool incentive programs, vanpools, guaranteed ride programs, parking management, employer-provided transit fare subsidy programs, telecommute programs, bike to work programs, and programs that bridge gaps in existing transit services between worksites and park-and-ride lots. Grants cannot exceed \$100,000, can fund up to 90% of a project, and require a 10% company match.

Through a contract with NYSDOT, NuRide, a for-profit company, partners with LITM to administer ridesharing programs on Long Island. NuRide provides the web-based system and technical support for the partnership, and also provides training, marketing materials, and customer support. LITM markets the

Table 32: Section 5310 Recipients in Nassau and Suffolk Counties

Recipient Agency Name	City	County	Date of Last
			Award
Barry & Florence Freedberg, JCC	Oceanside	Nassau	2002
CHS Ambulance Services Inc.	Farmingdale	Nassau	1999
Five Towns Community Center	Lawrence	Nassau	2002
Franklin Hospital	Valley Stream	Nassau	2003
JCC of the Greater Five Towns	Cedarhurst	Nassau	2002
Jewish Assoc. for Services for the Aged	Mineola	Nassau	1999
L.I. Center for Independent Living	Levittown	Nassau	1998
Long Beach Housing Seniors, Inc.	Long Beach	Nassau	1996
Long Beach Medical Center	Long Beach	Nassau	2002
Saint Brigid Outreach	Westbury	Nassau	2002
St. John's United Methodist Church	Valley Stream	Nassau	2002
Trustees of the Jones Fund	Bayville	Nassau	2001
Central Suffolk Hospital	Riverhead	Suffolk	2006
Community & Family Residence	Islandia	Suffolk	2005
Developmental Disabilities Inst.	Smithtown	Suffolk	2003
Elderly Day Services on the Sound, Inc.	Northport	Suffolk	2002
Family Residencies and Essential Enterprises, Inc.	Hauppauge	Suffolk	2005
Fed. Of Org. NYS Mentally Disabled	West Babylon	Suffolk	2006
Gurwin Jewish Geriatric Center	Commack	Suffolk	2002
Human Resources Research Mngmt.	Lake Grove	Suffolk	2005
Huntington Human Services Inst, Inc.	Huntington Station	Suffolk	1996
Independent Transporters, Inc.	East Moriches	Suffolk	2003
John T. Mather Memorial Hospital	Port Jefferson	Suffolk	2002
Little Flower Children's Service of NY	Wading River	Suffolk	1995
Maryhaven Transportation Services, Inc.	Port Jefferson Stat	Suffolk	2003
Mercy Haven, Inc.	Islip Terrace	Suffolk	2002
NYSARC, Inc. - Suffolk Chapter	Bohemia	Suffolk	1997
Rides Unlimited Nassau/Suffolk	Islandia	Suffolk	1998
Siena Village	Smithtown	Suffolk	2002
St. Charles Hosp. & Rehab. Ctr.	Port Jefferson	Suffolk	2001
Suffolk County United Veterans	Patchogue	Suffolk	2002
Suffolk Y Jewish Community Ctr.	Commack	Suffolk	1993
The Community Programs Center of L.I.	Edgewood	Suffolk	2004
Town of Babylon Sr Ctzn Cmnty Sv	North Babylon	Suffolk	1995
Town of Brookhaven	Farmingville	Suffolk	2000
Town of East Hampton	East Hampton	Suffolk	2000
Town of Riverhead	Riverhead	Suffolk	2000
Town of Smithtown	Smithtown	Suffolk	1997
Town of Southampton	Southampton	Suffolk	1997
U.C.P. of Greater Suffolk	Hauppauge	Suffolk	2006

ridesharing opportunities. Through the LITM web site, users can link to the NuRide web site at www.NuRide.com. Each trip arranged through NuRide earns incentive points--like frequent-flyer miles--that can be redeemed for rewards from corporate sponsors.

In the future, NuRide hopes to expand their services by using cell phone text messaging technology or other smart-phone based options. In addition, it is anticipated that ridesharing will be used for an increasing number of non-commuting trips as the program grows.

Car-Sharing

At this time, there are no car-sharing programs on Long Island. ZipCar, however, operates in New York City and could potentially expand to Long Island. Flexcar, another car-sharing company, is not located in the New York area at this time.

School Transportation

In New York State, non-city school districts are required to provide transportation (for a maximum distance of 15 miles) for all children in both public and private schools in grades K through 8 who live more than two miles from school, and for all children in grades 9 through 12 who live more than three miles from school. Services other than those that are required may also be provided. For example, city school districts may choose to provide transportation, and any district may choose to provide service to students who live closer than two miles (for grades K-8) or three miles (for grades 9-12) from school, as long as students in similar circumstances have access to the same transportation services. Additional services that are provided beyond the required limits must be approved by voters in the school district.

All school districts are required to provide transportation for students with disabilities whose Individual Education Plans (IEPs) call for transportation. No minimum or maximum distances apply to transportation for students with disabilities. If the IEP includes attendance at special classes or programs located up to 50 miles from the student's home and calls for transportation, that service must be provided.

Vehicles used by school districts or public or private schools to provide school transportation must undergo a safety inspection by NYSDOT at least every six months. NYSDOT Region 10 staff is responsible for conducting inspections of school transportation vehicles (as well as other types of vehicles) that are used in Nassau and Suffolk Counties. A listing of school transportation operators and the number of vehicles in each fleet, provided by Region 10, is shown in the table in Appendix B. Over 10,000 vehicles are used by 240 school transportation providers on Long Island. (Note that nearly 50 operators on the list are duplicate names – typically companies that may have more than one operating address.) Since school transportation typically operates during limited hours, these vehicles may represent a significant resource to be considered when options for expanding mobility through coordinated transportation services are identified.

Bicycling

Currently, NYMTC, through the Long Island Non-Motorized Transportation Study (LINMTS) is developing a plan to expand the network of bicycle facilities on Long Island through the addition of 113 new bike corridors. Full implementation of this plan would add over 970 miles of on- and off-road bicycle paths and lanes to the existing network. Ten corridors have been selected for further development pending project sponsor approval and funding availability. NYMTC's Regional Transportation Plan (RTP) provides information such as maps of all existing and proposed bicycle routes on Long Island as well as stating the principal goals for expanded non-motorized access on Long Island as developed by the NYMTC Nassau-Suffolk Transportation Coordinating Committee.ⁱⁱⁱ These are the following:

- Increase usage – to double the current percentage of total trips made by walking and bicycling and simultaneously increase the safety of bicyclists and pedestrians

ⁱⁱⁱ Ibid.

- Increase safety – to simultaneously increase usage and reduce the number of bicycle and pedestrian fatalities and injuries by 10%
- Integrated and continuous system – integrate roadway, transit (bus, rail, ferry), and park-and-ride facilities with non-motorized facilities
- Increase access to activity centers – major generators include shopping, education, employment and parks
- Increase recreational travel opportunities and support tourism

Bicycle access is also provided by MTA Long Island Rail Road, which allows bicycles on most off-peak trains with a permit. Permits can be obtained by mail or in person and require an application form and a \$5.00 registration fee. Permits are also valid on MTA Metro-North Railroad. Regulations, available on the MTA LIRR web site, state the hours during which bicycles are allowed on trains and set limits for the number of bicycles permitted on train, and where they should be stored on the train. On weekends, certain trains are designated as “Bicycle Trains” to allow for carrying a larger number of cyclists. Bicycles are not permitted on trains during holidays.

MTA Long Island Bus does not currently allow bicycles on their buses. The only bike-on-bus use found in the study area is at SUNY Stony Brook. According to the July 2004 *Long Island Non-Motorized Transportation Study Bike on Bus Final Report* by NYS DOT and NYMTC, SUNY Stony Brook operates a bus fleet of 15 buses with bike racks on the front of the buses.^{iv}

Taxis

A majority of local municipalities within Nassau and Suffolk Counties license taxis and limousines. In addition, Nassau County, under its Taxi and Limousine Commission formed in 2005, requires all taxi operators to register with the county, in addition to being appropriately licensed by their home municipality. Taxi operators who operate within Nassau County without being registered can have their vehicles confiscated. Typically, taxis are not permitted to pick up street hails, with all rides being pre-arranged.

There does not appear to be a centrally located list of taxi operators on Long Island. The MTA Long Island Railroad website does provide a list of connecting services at each LIRR station. This typically includes the telephone number of a taxi service. To find taxi service, county phone directories or local communities should be consulted.

2.3 Trip Generators and Attractors

Appendix C provides lists of different land uses in Nassau and Suffolk Counties, provided by the Suffolk County Planning Department, that generate or attract trips.^v The plan for this study included the mapping of these trip generators and attractors to provide a visual analysis of significant land uses. Unfortunately, the data was not available in a format that would allow for conversion for use with mapping software and thus can only be provided in the tables provided in the Appendix.

^{iv} *Long Island Non-Motorized Transportation Study, Bike on Bus Final Report*, NYS DOT & NYMTC, July 2004, p. 16

^v Please note that this information, particularly for Nassau County, may be somewhat dated and does not include all facilities built within the past several years.

Data for Suffolk County trip generators and attractors in the following categories is maintained by the Suffolk County Planning Department:

- Cooperative Apartment Complexes of 10 or More Units
- Condominiums and Homeowners Associations of 10 or More Units
- Apartment Complexes of 10 or More Units
- Subsidized Apartment Complexes of 10 or More Units
- Senior Citizen Multi-Unit Housing Complexes
- Major Non-Government Office Buildings
- Shopping Centers and Central Business Districts (CBDs)
- Hotels and Motels

The Planning Department also compiles readily available information about similar types of generators and attractors in Nassau County.

Table 33 provides a summary of the total apartment complexes, office buildings or hotels, by type, in each county (Shopping Centers and CBDs are in a format that does not allow for this tally). It should be noted, however, that apartment categories are *not* mutually exclusive. For example, a 12-unit, subsidized complex for seniors would be listed under several categories.

Table 33: Number of Travel Generators in Selected Categories

Land Use Category	Nassau County	Suffolk County
Cooperative Apartment Complexes of 10 or More Units	249	109
Condominiums and Homeowners Associations of 10 or More Units	183	278
Apartment Complexes of 10 or More Units	380	298
Subsidized Apartment Complexes of 10 or More Units	86	53
Senior Citizen Multi-Unit Housing Complexes	103	151
Major Non-Government Office Buildings	459	401
Hotels and Motels	53	302

Due to the volume of information included in the Planning Department database, Appendix C contains lists of selected types of trip generators: apartment complexes, subsidized apartment complexes, and senior multi-unit housing complexes.

Within each category, land uses are grouped and subtotaled by town. Within each town, uses are grouped by community and specific information on each apartment or business is provided. For apartments, the

Access to Transportation on Long Island

name of the building, the address, the number of units, and age of the building is provided. Subsidized Apartments and Senior Housing also provide information on the housing type.

3.0 Service Gaps and Mobility Needs

One of the primary objectives of this project was to identify those people for whom fixed route transit service is not a feasible option. To that end, both the target markets (i.e., the manifest and latent travel market) and the fixed route transit services (i.e., the supply of bus and rail services in Nassau and Suffolk Counties) have already been described. In this stage of the analysis, both of these elements were examined jointly to determine if any concentrations of the target markets did not have access to fixed route transit service.

“Service gaps” may be geographical (i.e., no service is physically available, or service is not within walking distance), temporal (i.e., service days, the span of service or the frequency of service may be limited) or some combination of these two. However, it should be kept in mind that because certain groups may not be served by the fixed route transit system it does not imply that the fixed route system should serve them. Their mobility needs may best be served by other forms of public transportation.

3.1 Fixed Route Service Gaps

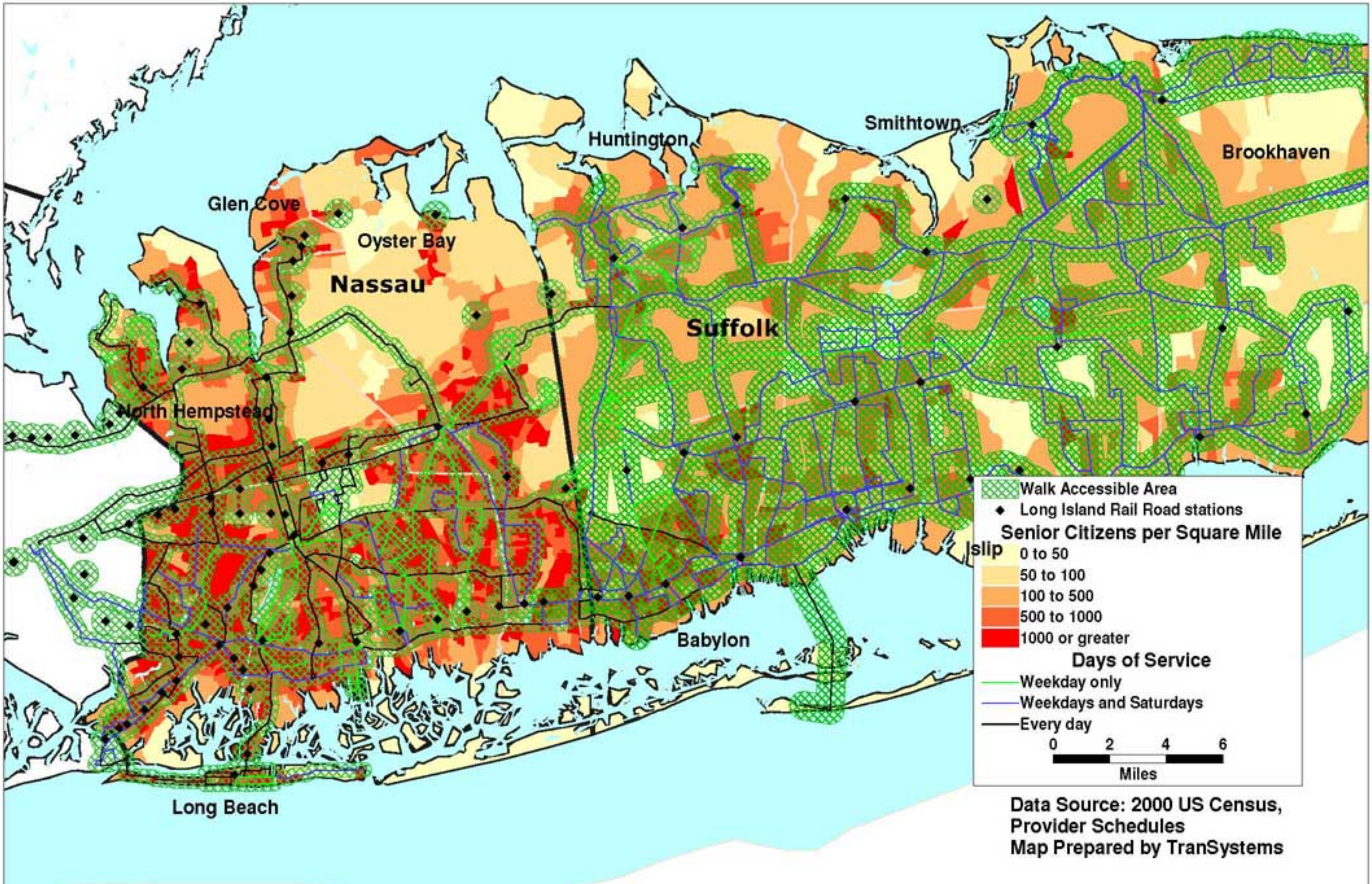
Comparing the location of target markets for transportation services to existing bus routes and rail lines shows that fixed route services currently operate in most areas in which those groups are concentrated. Only a very few areas containing concentrations of groups such as seniors or persons with disabilities do have no bus routes or rail lines running through them. Those areas are located in Oyster Bay, Brookhaven, and, to a lesser extent, Riverhead. In fact, most areas in which target populations are concentrated in Suffolk County are located outside of the transit-supportive area yet are provided with bus and/or rail service; the same is true for many areas in the eastern portion of Nassau County.

However, in some areas where bus and rail service are provided, days and hours of service and service frequency may be limited, as described in Section 2.2. Service in the evening hours and on weekends, in particular, is not available in all areas. In lower density communities, the time between bus and rail trips reduces the convenience of public transportation as a travel option.

Bus stops and rail stations are not within walking distance for some potential users. Concentrations of individuals or households in the target market groups (defined as 100 or more individuals or households per square mile) are located outside of the “walk accessible area”, defined as one-quarter mile around Nassau County bus routes and one-half mile around both Suffolk County bus routes and all railroad stations, in a number of communities.

To illustrate such service gaps, several maps were prepared which compare the existing fixed route services with the locations of concentrations of population in several of the target markets. These maps, which are presented in this section, show the location of bus and rail routes, selected service characteristics (such as days of service, time of first or last trip, or frequency), the density of the selected target markets by census block group, and the “walk accessible” area.

As can be seen in Map 24 (showing western Long Island) and in Map 25 (showing eastern Long Island), most, but not all, areas in which seniors are concentrated also have fixed route service that is within walking distance. Seniors living in the Berry Hill Road corridor in the eastern portion of the Town of Oyster Bay (i.e., between the Oyster Bay and Syosset MTA Long Island Rail Road stations) in Nassau County are outside of the walk accessible area. In Suffolk County, seniors living in parts of Brookhaven, areas near Stony Brook and Port Jefferson in Smithtown, and in parts of Riverhead, Southold, and Southampton in Suffolk County are outside of the walk accessible area.



Map 24: Density of Seniors, Bus Routes and Rail Stations by Days of Service, and Walk Access Area, Western Long Island

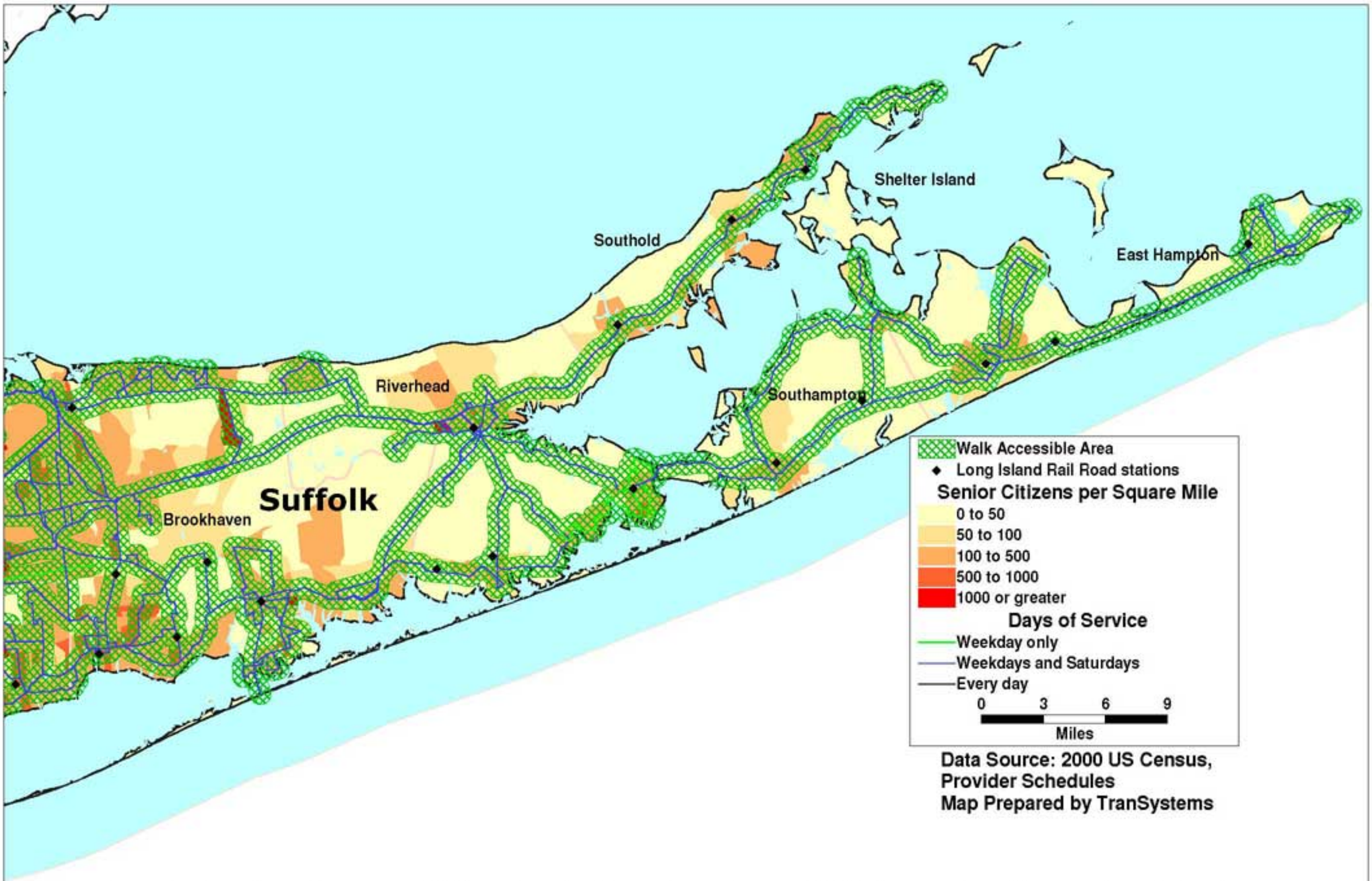


Figure 25: Density of Seniors, Bus Routes and Rail Stations by Days of Service, and Walk Access Area, Eastern Long Island

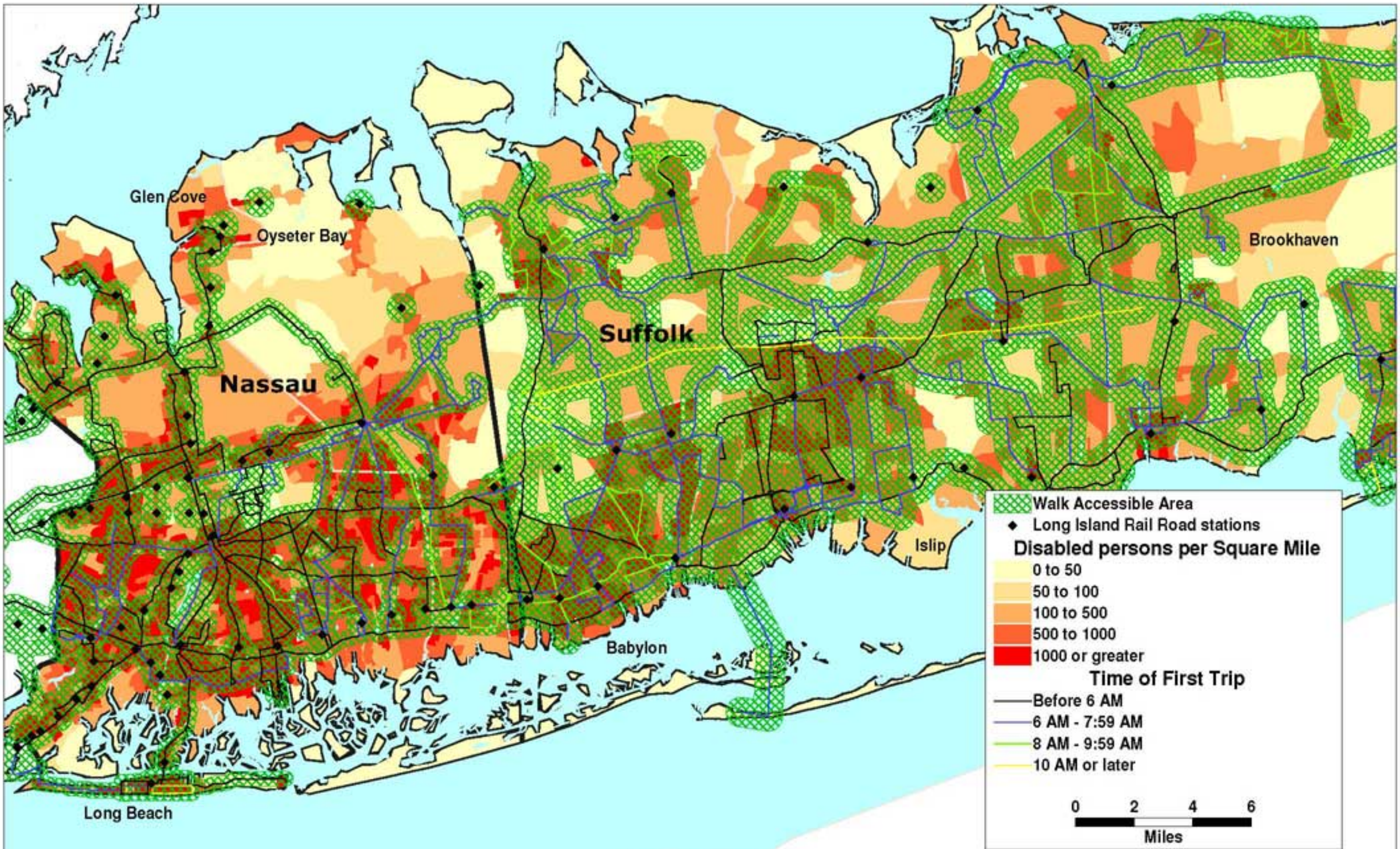
Maps 24 and 25 also code each bus route and rail station by the days of service that are available. The maps illustrate that the areas with the highest densities of senior citizens also tend to have the most days of available fixed route transit service. In northern Nassau County and much of Suffolk County, days of service are more limited.

Map 26 (showing western Long Island) and Map 27 (showing eastern Long Island) illustrate the densities of disabled persons in relation to the walk accessible area around bus and rail services. Similar to those showing concentrations of senior citizens, these maps indicate that there are concentrations of persons with disabilities throughout Long Island that are outside the walk accessible area for bus and rail service. Maps 26 and 27 also show the time of the first trip on each bus or rail route, while Maps 28 and 29 show the time of the last fixed route trip. As can be seen, the areas with the highest densities of persons with disabilities tend to have the longest spans of service. People with disabilities who reside in the eastern portion of Long Island and other less densely populated areas have less access to transit service in the early morning or late evening hours than individuals in other areas.

Map 30 (showing western Long Island) and Map 31 (showing eastern Long Island) show the location of concentrations of households that do not have access to a car in relation to bus and rail services and the walk accessible area. In contrast to concentrations of seniors and persons with disabilities, there are very few areas in which concentrations of carless households are located outside of the walk accessible area for transit service.

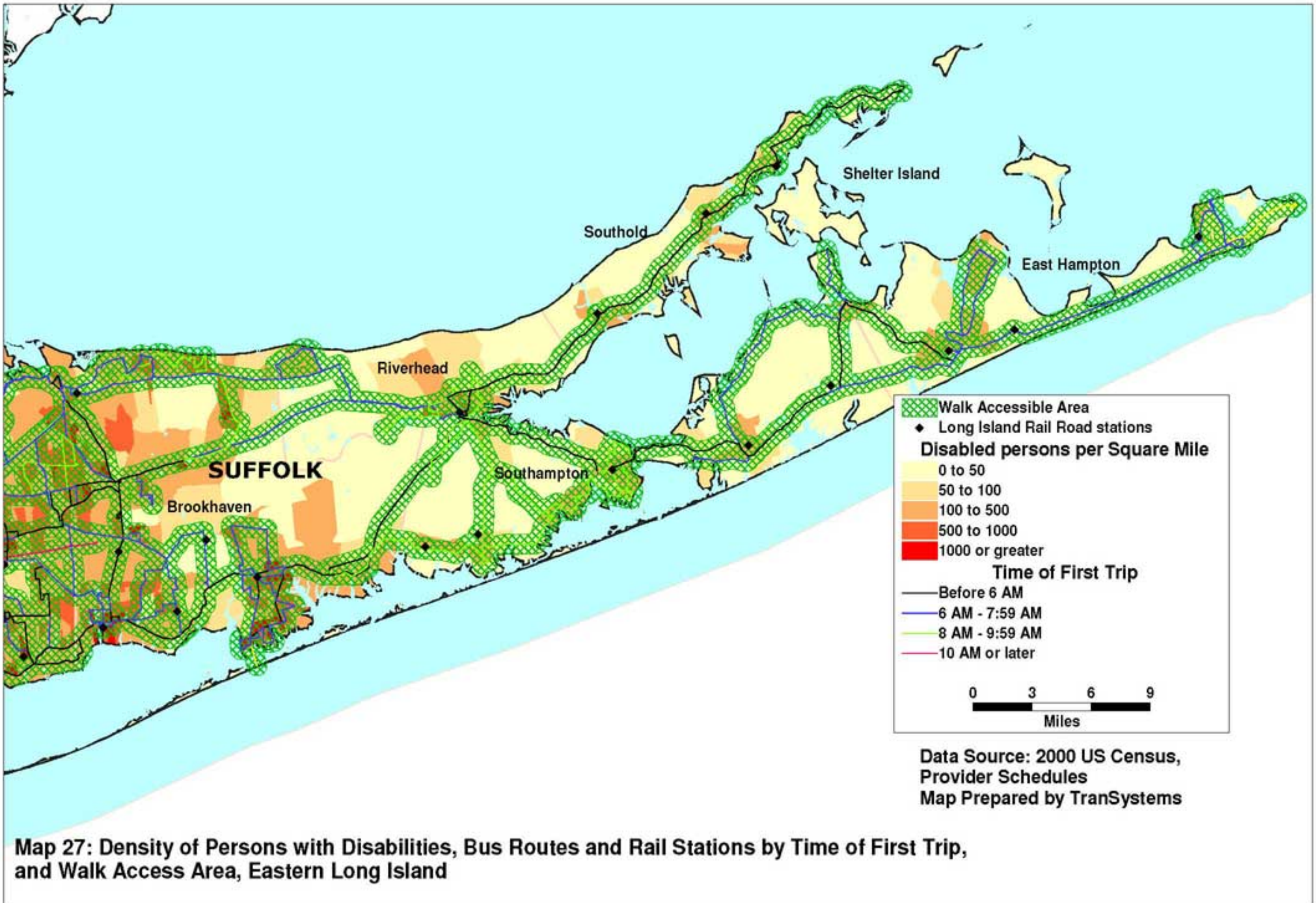
Maps 30 and 31 also depict the frequency of bus and rail service during the morning peak period, and show that less frequent service is available in the eastern portion of Nassau County and on many routes in Suffolk County. Much of the service that is available to members of carless households in those areas operates with 60 or more minutes between trips during morning peak hours.

Another method of identifying people for whom fixed route transit service is not a feasible option is to examine locations outside of the previously-defined "fixed route transit-supportive areas" where there are concentrations of members of the target populations. Map 32 illustrates the densities of senior citizens outside of the transit-supportive areas, and Map 33 illustrates the same information for persons with disabilities. Finally, Map 34 illustrates the densities of zero car households outside of the transit-supportive areas. Taken together, these maps show that there are a number of communities where there are concentrations of the target populations outside of the areas typically associated with being able to support hourly fixed route transit service. These communities include areas of North Hempstead, parts of Glen Cove, parts of the Towns of Oyster Bay, Huntington and Babylon, the southern portions of Islip, parts of Brookhaven, the area west of downtown Riverhead and parts of the East End (i.e., Southold, Southampton and East Hampton). As these maps also show, transit service is provided and utilized in many areas, primarily in Suffolk County, where density is below that generally considered necessary to support a minimum level of fixed route bus service.

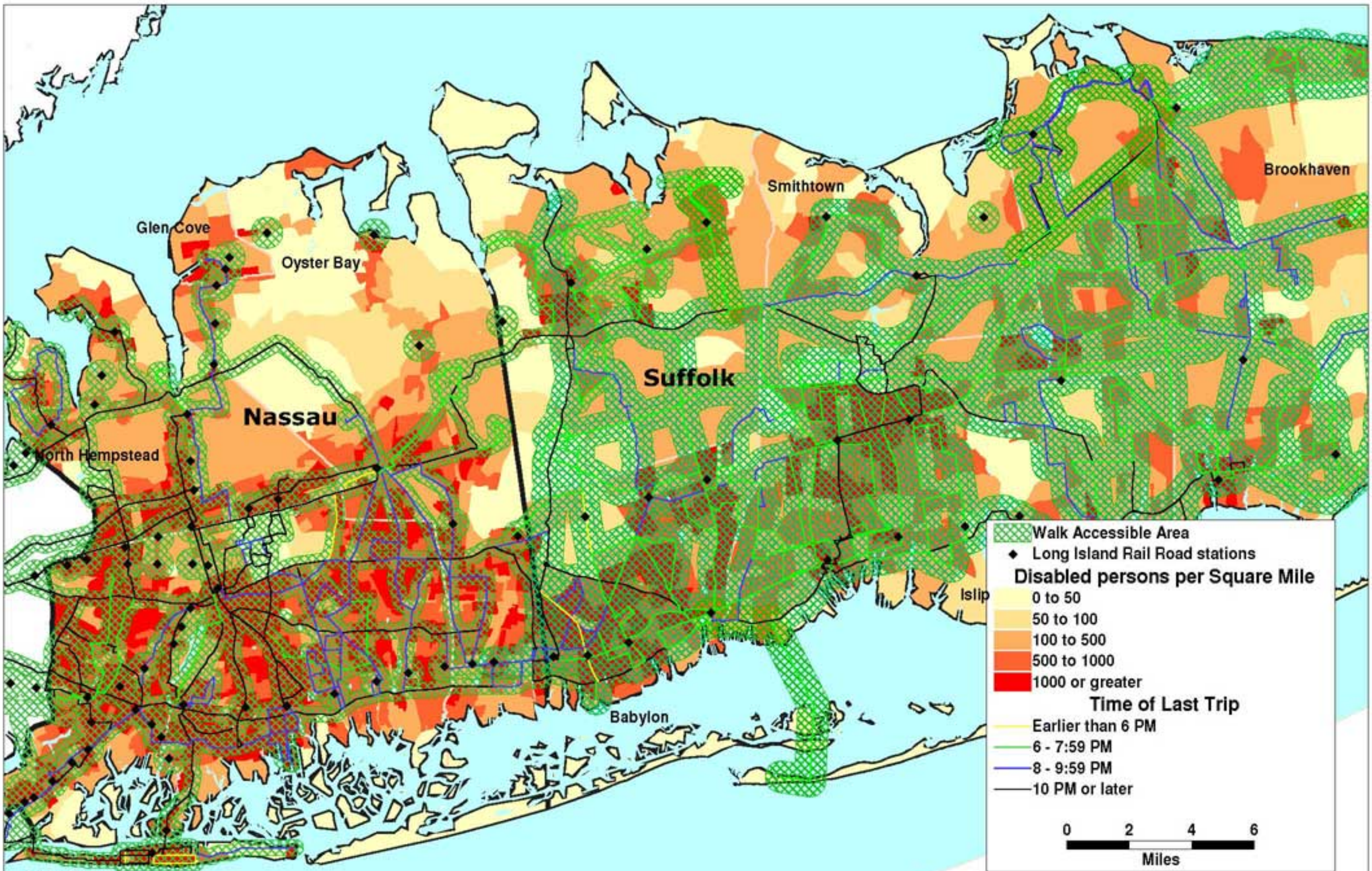


Data Source: 2000 US Census, Provider Schedules

Map 26: Density of Persons with Disabilities, Bus Routes and Rail Stations by Time of First Trip, Map Prepared by TranSystems and Walk Access Area, Western Long Island

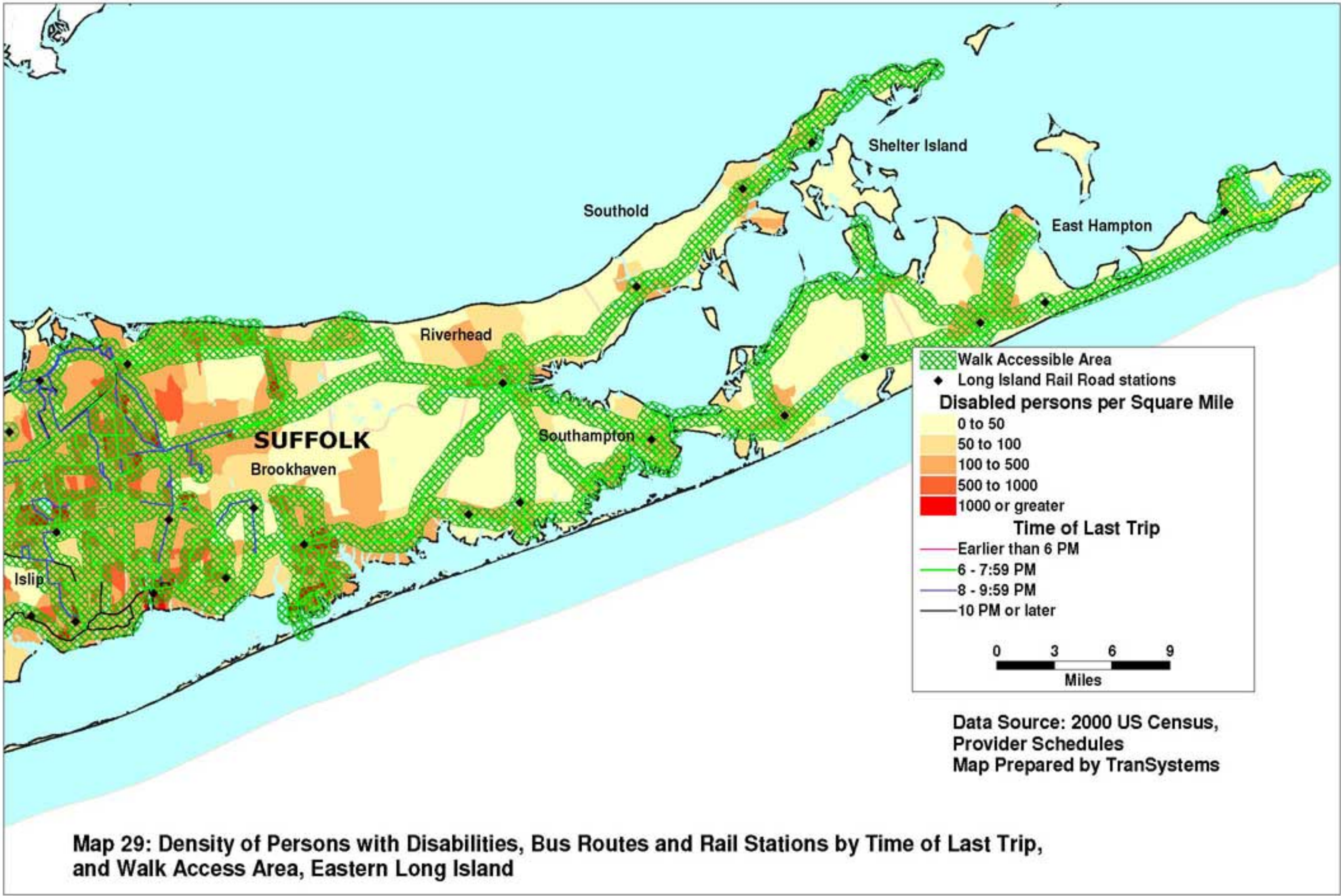


Map 27: Density of Persons with Disabilities, Bus Routes and Rail Stations by Time of First Trip, and Walk Access Area, Eastern Long Island

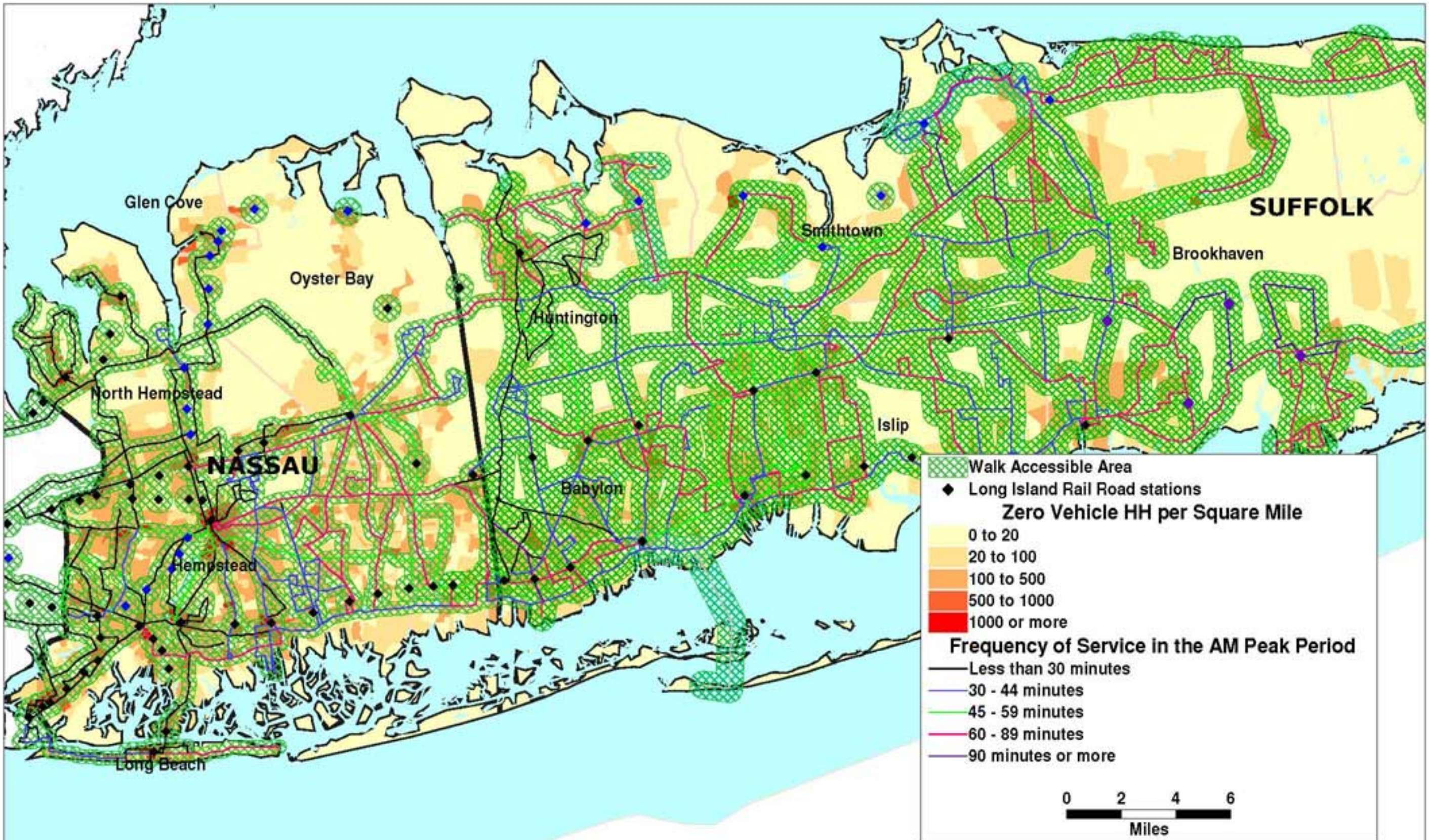


Map 28: Density of Persons with Disabilities, Bus Routes and Rail Stations by Time of Last Trip, and Walk Access Area, Western Long Island

Data Source: 2000 US Census, Provider Schedules
Map Prepared by TranSystems

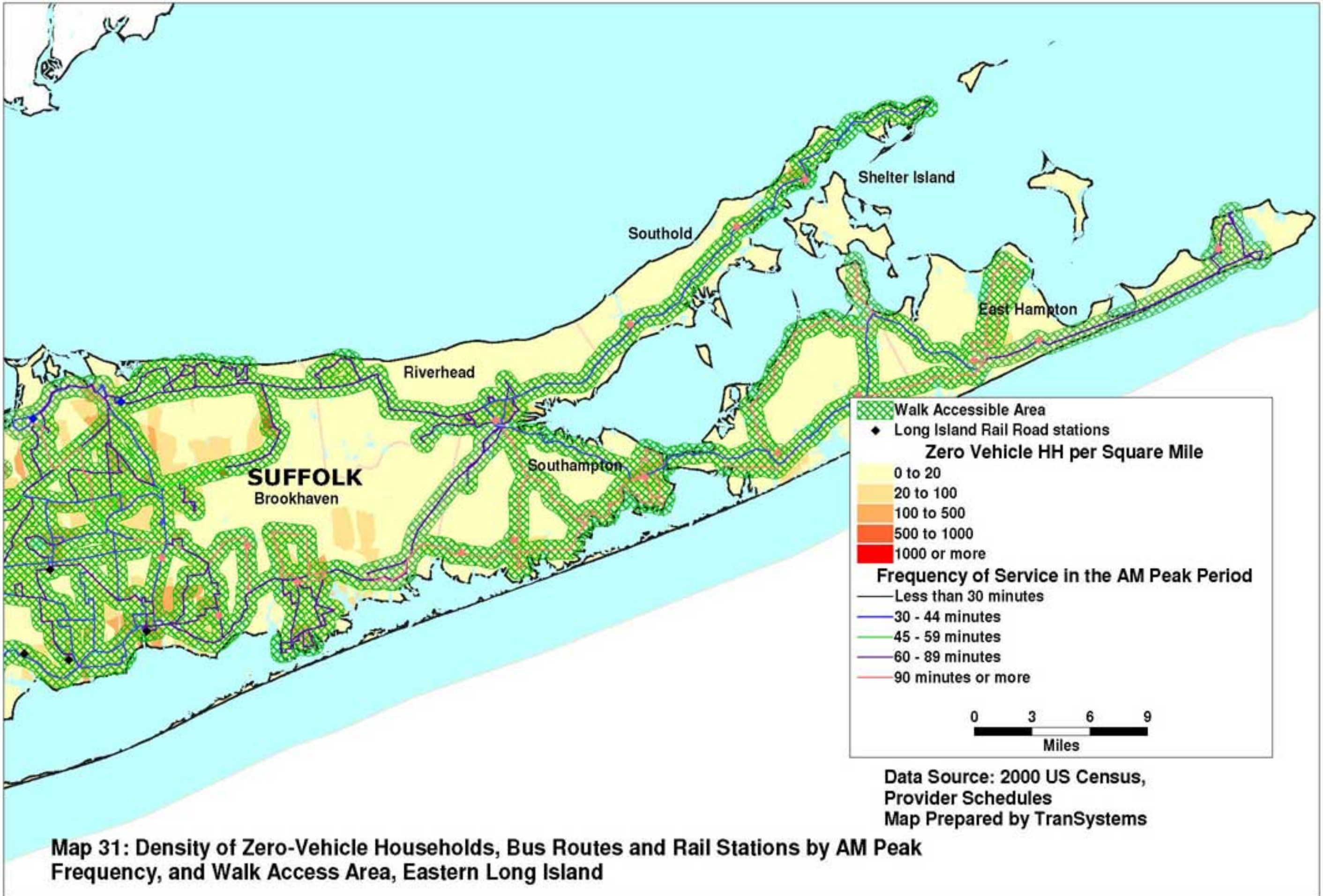


Map 29: Density of Persons with Disabilities, Bus Routes and Rail Stations by Time of Last Trip, and Walk Access Area, Eastern Long Island

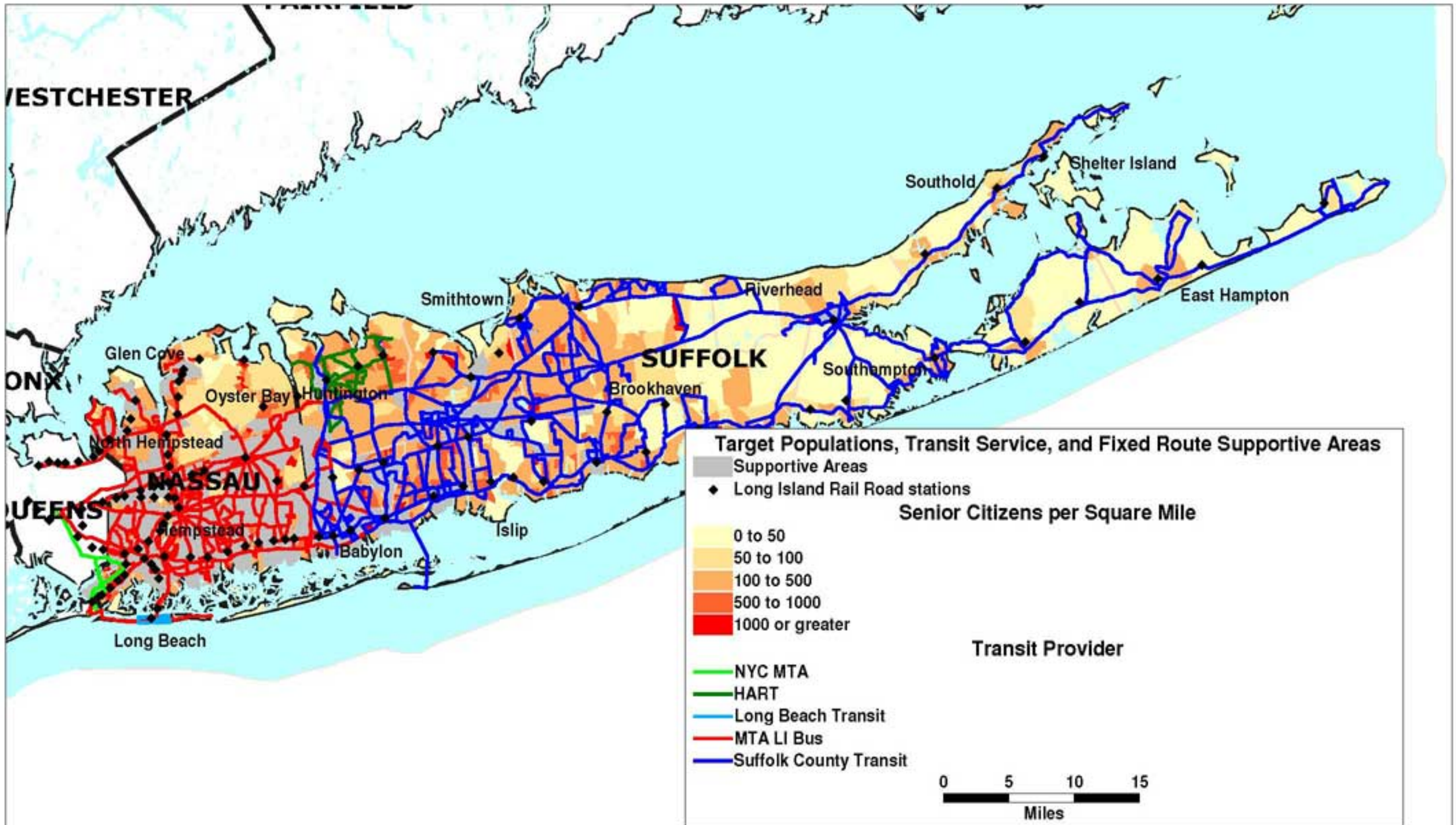


Map 30: Density of Zero-Vehicle Households, Bus Routes and Rail Stations by AM Peak Frequency, and Walk Access Area, Western Long Island

Data Source: 2000 US Census,
Provider Schedules
Map Prepared by TranSystems

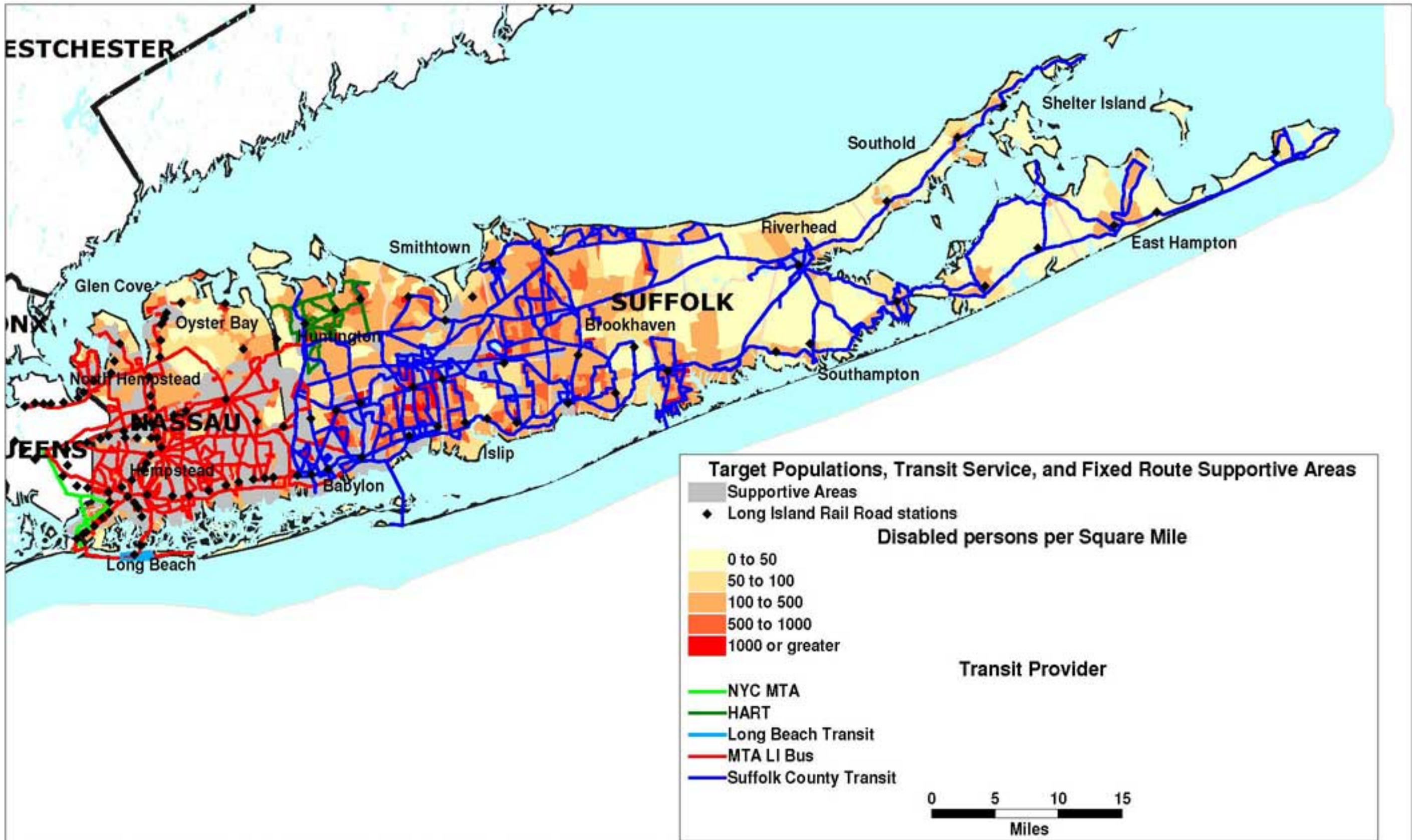


Map 31: Density of Zero-Vehicle Households, Bus Routes and Rail Stations by AM Peak Frequency, and Walk Access Area, Eastern Long Island



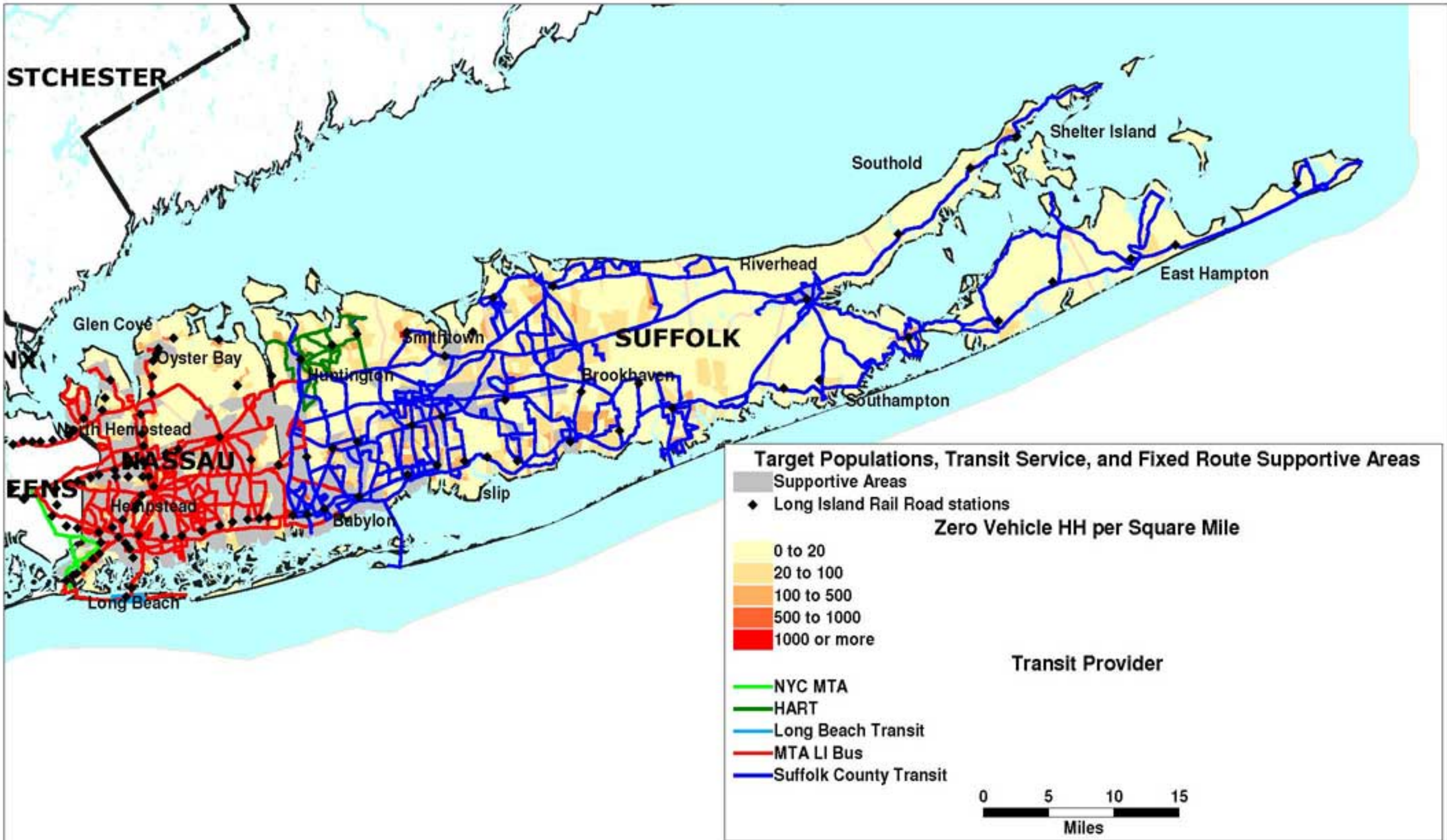
Data Source: 2000 US Census, NYMTC Best Practice Model,
 Provider Route Maps
 Map Prepared by TranSystems

Map 32: Density of Seniors, Transit Service, and Transit-Supportive Areas



Map 33: Density of Persons with Disabilities, Transit Service, and Transit-Supportive Areas

Data Source: 2000 US Census, NYMTC Best Practice Model, Provider Route Maps
Map Prepared by TranSystems



Map 34: Density of Zero- Vehicle Households, Transit Service, and Transit- Supportive Areas

Data Source: 2000 US Census, NYMTC Best Practice Model, Provider Route Maps
Map Prepared by TranSystems

3.2 Demand Response Service Gaps

As summarized in Section 2.2, a number of public and private entities provide demand response service in Nassau and Suffolk Counties.

Most services are provided for a particular type of eligible rider or trip. This means that an individual may be eligible for transportation for some of the trips he or she needs to make and not others – a Medicaid recipient will have transportation service for medical appointments, for instance, but will not have a way to get to work. A senior may be able to get a ride to a program or activity at the local senior center, but will not have transportation for medical trips or to do personal errands. Another result is that some residents of a community are eligible for service while others who are without transportation options are not. For example, seniors and persons with disabilities may have access to a town's demand response service, but low-income individuals who do not meet minimum age requirements or do not have a disability will not be eligible to use the service.

Services also tend to be limited to a particular geographic area and do not cross town or county boundaries. This makes inter-community travel either impossible or time-consuming.

As is the case with bus and rail services, more demand response services are available in Nassau County and the western end of Suffolk County than on the East End of Suffolk County. If services operate at all in the East End, it is at a lower level of service than in other locations.

Demand response service hours are more limited than those of fixed route services. Except for the ADA paratransit services provided by the fixed route bus operators, most demand response services end during the afternoon. Evening and weekend service is not available for individuals who are not eligible for ADA paratransit service.

Two barriers to use of the fixed route service network for some Long Island residents also apply to demand response service. Fares may be higher than potential users can afford, particularly for trips that need to be made on a regular basis. Information about available transportation options is also very important, in formats that individuals can access. Given the variety of demand response services that are provided by various entities and their differing eligibility requirements and service characteristics, it can be very difficult for an individual to identify the services that he/she could use to make necessary trips.

3.3 Public Input: Issue Group and Focus Group Meetings

This project featured a public involvement effort that was designed to gather diverse and relevant stakeholder input and provide various opportunities for a broad range of stakeholders to share ideas, participate in the study, and offer suggestions to improve access to transportation in Suffolk and Nassau counties. Outreach efforts were conducted throughout the project and incorporated a variety of techniques. Some of the findings of two of those efforts are summarized below. A complete description of the public involvement activities associated with the project is contained in the *Access to Transportation on Long Island Public Involvement Report*.

Three issue group meetings were conducted to discuss transportation issues and needs of seniors, persons with disabilities, and those who are transit dependent. The purpose of those meetings was to facilitate an open discussion with organizations who serve target population groups.

Five focus group meetings were also conducted, to obtain direct public input on transportation issues and needs and on a possible definition for "adequate access to transportation" for Long Island. Meetings were

held with seniors in Nassau County, seniors in Suffolk County, persons with disabilities, students, and immigrants.

Discussion topics with both issue and focus group participants included barriers that prevent travelers from making use of existing services, transportation service gaps and unmet needs, and access to information about transportation options.

It should be noted that this section reports the comments made by participants in the issue and focus group meetings, which represent the perceptions and views of the participants, but may include some inaccuracies about current transportation services.

3.3.1 Barriers to Existing Transportation Services

The barriers to accessing current transportation services that were identified by issue and focus group participants are broken down here into four major categories: fixed-route services, county and municipal demand-responsive services, not-for-profit services, and private for-profit services. The fifth section lists barriers found across all modes of transportation.

Fixed-Route Buses and Trains

Comments regarding obstacles and challenges that make using fixed route services more difficult covered issues related to infrastructure, safety, vehicles, communication and fare collection, and local attitudes toward transit service.

Infrastructure

Participants mentioned numerous areas where infrastructure inadequacies created barriers and disincentives to accessing and using the current transit system. These included:

- Lack of bus shelters and benches
- Poorly marked bus stops and inconsistent locations of bus stops
- Lack of train station waiting rooms and insufficient hours of operation
- Lack of pick-up, drop-off, and waiting locations for shuttle buses at train stations
- Lack of parking at train stations
- Accessibility for persons with disabilities
- Uneven sidewalk conditions at bus stops that prevent drivers from lowering wheelchair ramps
 - Missing tactile warning strips at the edge of train station platforms
- Long distances from residential location to transit stops

Safety Issues

Participants noted the following perceived and experienced safety concerns about the current transportation system:

- Sense of insecurity
- Some mentioned being harassed by other passengers or loiterers while waiting for buses and trains

Access to Transportation on Long Island

- Many felt unsafe due to a lack of police presence
- Lack of lighting at bus stops acts as a deterrent to potential evening riders
- Built environment (location of bus stops, difficulty individuals with vision impairments have with navigating traffic circles, need for additional bus shelters)
- Participants at the issue and focus group meetings for persons with disabilities cited many examples of bus stops located at dangerous intersections

Vehicles

- Insufficient capacity, particularly at rush hour
- Mechanical issues – most of the participants at the persons with disabilities focus group had numerous experiences with equipment problems (mostly malfunctioning wheelchair lifts) on public buses

Communication

- Language barriers – Lack of information in languages other than English creates difficulties for non-English speakers to access the transportation system
- Persons with disabilities – Both visual and audible messages are needed to meet the needs of persons who are sight- or hearing-impaired
- Passenger orientation – Currently there is a lack of visual signage and audible station/stop announcements to assist with passenger orientation
- Customer service – Most participants felt it is difficult to get information via transportation providers' customer service telephone lines

Fare Collection

Fare collection is a significant issue for residents in Suffolk County. Many expressed discontent over the following issues:

- No MetroCard-type fare collection system in Suffolk County
- No free transfers
- Two-hour time limit for transfers. Participants explained that the combination of travel times and wait times for connecting buses often exceeds two hours
- Exact fare requirement

Local Opposition to Transit

In some towns, local opposition to transit has successfully prevented bus stops or moved them to locations that are less convenient for people who rely on bus service.

County and Municipal Demand Response Services

Issue and focus group participants identified several aspects of demand response services that present challenges to those who use or wish to use them, including limitations in level of service and eligibility requirements, scheduling processes, and vehicle maintenance.

Scheduling

Scheduling difficulties create the largest barrier to accessing county and municipal demand response services. Participants explained that:

- Reservations generally have to be made too far in advance
- Return trips are particularly difficult to schedule
- Users must often set aside an entire day for a single appointment
- Lack of operator training and video-relay services make reservations systems discriminatory against the hearing-impaired

Service

Users of county and municipal demand response services noted two primary areas of concern about these services:

- Lack of door-to-door service – Currently, demand response services provide curb-to-curb service. Door-to-vehicle assistance is missing. This may require training for drivers and raise liability issues for providers.
- Limits on the areas that are served and the types of trips that are allowed

Vehicle Maintenance

Lack of proper vehicle maintenance restricts access to municipal services for both seniors and persons with disabilities.

Eligibility Requirements

Municipal eligibility requirements for local jitney services limit access to only certain populations.

Non-Profit Services

Non-profit transportation services are used primarily by seniors and persons with disabilities. These groups viewed non-profit services favorably, but mentioned several limitations of their services including:

- Services are typically reserved for specific clients
- Lack of financial resources, vehicles, and volunteer drivers limits the number of trips provided and typically restricts service to within town borders
- Liability issues for volunteer drivers

Private Services

Most participants did not routinely use private transportation services and felt there were several reasons for this including:

- Cost – for most, taxis are too expensive
- Availability - few towns have regular taxi service
- Comfort and convenience

- Most taxis lack wheelchair access
- The quality of vehicles varies, which is an important concern for seniors
- Many drivers are not willing to help seniors with packages

3.3.2 Barriers Common to All Modes

Issue and focus group participants mentioned two obstacles in relation to both fixed route and demand-response services: driver performance and affordability.

Driver Training

Many participants felt that lack of driver training acted as a significant barrier to use of both fixed- and non-fixed-route services. Specific areas of concern mentioned were:

- Communication – being able to communicate in a language understood by the passenger
- Customer service – treating passengers in a polite and respectful manner
- Sensitivity training – understanding the unique needs and circumstances of persons with disabilities
- Safety rule compliance – following safety guidelines of using seatbelts, refraining from cell phone use while driving, and waiting for passengers to safely board the bus before leaving a stop

Affordability

The majority of participants expressed a serious concern over the increasing cost of transportation across all modes and noted that cost could quickly become a significant barrier for many people

3.3.3 Transportation Service Gaps and Unmet Needs

The service gaps identified in the issue and focus groups can be broken down into four broad categories: lack of access to specific destinations, lack of coordination between transportation services, inadequate service hours and frequency, and limits to the geographic areas that receive service.

Lack of Access

When asked about places and opportunities that are inaccessible with the current transportation system, the most common responses included jobs, recreational activities, and medical facilities.

Jobs

For immigrants and students, the current transportation system limits access to job opportunities. Many felt there are significant job or internship opportunities, particularly in Suffolk County, that are inaccessible. Additionally, these groups felt the transportation system limited their choice of employers and their freedom to change jobs.

Recreational and Leisure Activities

Participants, in general, felt access to recreation and leisure activities were important and that the current transportation system limited opportunities to take advantage of what is available. For seniors this often meant not being able to attend social functions or visiting friends and relatives. Younger participants felt that transportation services to area beaches and parks were inadequate.

Medical Facilities

An important issue for seniors and persons with disabilities was the ability to reach medical facilities and their preferred doctors. Many felt certain medical facilities (Winthrop Hospital was specifically mentioned) were inaccessible and participants were often restricted in their choice of doctors.

Lack of Coordination Between Services

Participants noted a lack of coordination between transportation providers as a major gap in service. Areas of concern include coordination between :

- Fixed-route services (e.g. bus to train, bus to bus)
- Demand responsive services and fixed-route services (e.g. paratransit to train)
- Demand responsive services (e.g. Able-Ride to SCAT)

For participants, lack of coordination causes missed connections and forces passengers to endure long transfer times between services. Of primary interest to participants were better scheduling of transfers and better communication between vehicles and dispatch centers.

Service Hours and Frequency

Frequent users of the public transit system noted several issues with the hours of operation and frequency of bus and train services.

- Limited night and weekend service
 - Schedules make commuting come from late-night jobs impossible
 - For those who work during the week, lack of Sunday service leaves only one day (Saturday) to do all weekend errands
- Limited reverse commuting options
- Inadequate frequency and reliability of service mean long waits between buses at off-peak hours. "Bunching" of buses is another significant problem.
- Limited service from the East End -- Participants from Long Island's East End noted that there are only three trains from the North Fork and four trains from the South Fork during the weekdays.

Routing and Coverage Area

Participants at both issue and focus groups mentioned service coverage areas and routing for fixed-bus routes as a gap in service. Major issues that participants raised were:

- Difficulty of north-south travel due to limited rail service
- Few transportation options for travel to and from eastern Long Island (most participants felt that transportation options improve significantly the further west one travels)
- Lack of adequate connection sites
- Attendees from Nassau County noted how most bus service from the southern portion of the county has to travel through Hempstead irrespective of whether or not that is the most direct route to the final destination

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- Outlying connector sites would help create more direct trip routing
- Major destinations on Long Island are well connected by transit, but sufficient connections from residential locations are missing
- Representatives from Adelphi University noted that their campus shuttle service carries over 100,000 passengers a year, but there are no public bus routes to the campus and the closest transit stop is in Hempstead
- ADA paratransit service in Suffolk County is only available within a set distance of fixed-route services (Able-Ride service in Nassau County is not restricted to a corridor around Long Island Bus routes)
- Most municipal and county services operate only within their jurisdiction boundaries (although there are several major exceptions; Long Island Bus, for example, travels into Queens and Suffolk County)
 - This creates long transfer times for riders crossing those boundaries
 - From the municipal point of view, operating within town borders allows local authorities to provide more trips with limited resources. Municipalities do not have the funding to provide additional services

Access to Information

Access to information about transportation options is seen as an important component of access to transportation. Issue and focus group participants were asked about current sources of transportation information.

Current Sources of Information

The following were mentioned as primary means by which Nassau and Suffolk County residents access information about transportation services:

- Printed schedules
- Word of mouth
- Bus drivers
- Internet
- Newspapers, newsletters, and circulars
- Telephone – many meeting participants expressed frustration with automated answering systems and preferred to talk with a live representative
- Radio and television

Barriers to Information/Missing Information

Participants noted several barriers that prevent them from obtaining complete information about transportation services:

- Have to understand the “quirks” of particular routes
- Only major bus stops are listed in schedules

- Language

3.4 Service Gaps and Mobility Needs Identified in Earlier Studies

Several transportation studies completed previously have identified transportation “service gaps” and mobility needs in Nassau and Suffolk Counties. Some issues were repeatedly highlighted not only in the previous studies but also during the focus and issue group meetings conducted in February and March of 2006. These issues include the following:

- Inadequate evening and weekend hours
- High costs for multiple trips and commuters
- Difficulty in trips with multiple stops and purposes (child care to work trips)
- Inadequate or no transportation to and from fixed route stops (feeder service)
- Inadequate intra-county trips
- Inadequate shelters, infrastructure and lighting
- Lack of available information
- Lack of coordination between railroad and bus schedules

Some of the previously identified service gaps are summarized in this section of the report.

3.4.1 Long Island Bus Study

In addition to reviewing the data from previous studies, the Long Island Bus Study identified potential markets for public transportation services based on employment centers. These are identified in Table 34. In addition, Table 35 lists the specific fixed route service gaps that were identified as part of this study.

3.4.2 Suffolk County Joint Executive/Legislative Task Force

This task force identified several service gaps related to both Suffolk County Transit (e.g., frequency and span of service, lack of Sunday service, lack of bus shelters, lack of intermodal coordination, etc.) and the MTA Long Island Rail Road (i.e., limited service on the East End, especially during the winter) and access to health care services. Table 36 also lists some of the gaps in demand response service that were identified as part of this task force’s work.

3.4.3 Long Island Transportation Plan 2000 (LITP 2000)

This study identified numerous service gaps, which are listed in Table 37. The LITP 2000 plan proposed a series of bus rapid transit (BRT) routes to address many of these concerns.

3.4.4 Environmental Justice Assessment ⁽⁹⁾

This assessment of the efforts of NYMTC’s member agencies to comply with federal Environmental Justice requirements identified a number of “communities of concern” in Nassau and Suffolk Counties. Communities of concern are defined as those in which the minority and/or low income populations make up 50% or more of the general population. Communities of concern are shown in Table 38.

Table 34: Potential Markets for Public Transportation Services Based on Employment Centers

Employment Center Location		Potential Markets to Serve
Nassau	Great Neck	Bayside, Whitestone, Glen-Oaks, Fresh Meadows
	Glen Cove	Oyster Bay, Locust Valley, Upper Brookville, Syosset
	Hicksville/Jericho	Oyster Bay, Brookville, Old Brookville, Syosset
	Lake Success/New Hyde Park	Oyster Bay, Brookville, Bayside, Whitestone, Glen-Oaks, Fresh Meadows, Bellerose
	Manhasset	Bayside, Whitestone, Fresh Meadows, Glen-Oaks, Bellerose
	Port Washington	Bayside, Whitestone, Fresh Meadows, Glen-Oaks, Bellerose
	Roosevelt Field/Mitchel Field	Bayside, Whitestone, Glen-Oaks, Fresh Meadows, Bellerose
	Syosset/Woodbury	Oyster Bay, Brookville, Farmingdale
	Valley Stream	Bayside, Whitestone, Fresh Meadows, Bellerose, Ozone Park, Glen-Oaks
Suffolk	Brentwood	Deer Park and Central Islip
	Farmingdale	Plainview
	Melville	Eastern Suffolk and Southeast Nassau County communities
	Patchogue	Middle Island, Yaphank, Bellport, Moriches
	Riverhead	Manorville

Source: Long Island Bus Study 2000

Table 35: Specific Fixed Route Bus Service Gaps Identified (Long Island Bus Study, 2000)

Location		Service Gap
Nassau	Garden City	Nassau Blvd in Garden City from Hempstead Turnpike
	Uniondale	Services to Manhasset
	Great Neck	Direct service to Nassau Hub
	Freeport	Service to Roosevelt Field
	Floral Park	Service to Lake Success/Great Neck
	Syosset	Service to SUNY Farmingdale
Suffolk	Montauk	Service to South Hampton
	West Hempstead	Service to Kings Point
	Hempstead	Evening and weekend service to Rockville Center
	Hempstead	Evening service to Floral Park
	Melville	Service to Babylon (possibly via S35 extension)
	Melville	Local services to Central Suffolk communities
	Stony Brook	Service to SCCC and Mastic-Shirley
	Patchogue	Service to SCCC, County Center and Riverhead (possibly by extending S66/S68)
	Jericho Turnpike	Extend services to provide continuous coverage for Suffolk County
	Brentwood RR	Extend services to SUNY Stony Brook
Miller Place	Service to Bellport*	
	Amityville	Service to Farmingdale Hub

Table 36: Demand Response Service Gaps in Suffolk County

Clientele	Service Issue or Gap
Health Care	Access to Stony Brook medical facilities for uninsured low income individuals
	Evening service to and from medical appointments
	Service for elderly or persons with disabilities (no Medicaid taxi access)
	Medical transportation service on the East End
SCAT	Weekday and Sunday paratransit services
	Service frequency
	Information dissemination
	Scheduling difficulties/confusion

Source: Suffolk County Joint Executive/Legislative Task Force 2001.

Table 37: Service Gaps Identified in the Long Island Transportation Plan 2000

Transportation Area of Concern	Service Gap Identified
Mobility for Elderly and Persons with Disabilities	Poor/inadequate paratransit scheduling – limiting service capacity
	Lack of programs to facilitate elderly use of fixed route public transportation
	Poor accessibility infrastructure, including wheelchair lifts and tie-downs, kneeling buses
Transportation Mobility (general public)	Poor frequency and travel times for rail and bus, especially compared to auto
	Inadequate coordination between railroad and bus services
	LIRR: Inadequate intra-Island services
	LI Bus: inadequate information dissemination and outreach
Commuter Mobility	Inadequate coordination between railroad and bus services
	Lack of feeder services to train stations
	Inadequate service hours to meet demand

Table 38: Environmental Justice Communities of Concern on Long Island

Nassau County		Suffolk County		
Town	Village/Hamlet	Town	Village/Hamlet	
Glen Cove	Glen Cove	Huntington	Huntington Station	
Hempstead	East Garden City		Wyandanch	
	Uniondale		Wheatley Heights	
	Hempstead		N. Amityville	
	Roosevelt		Copiague	
	Freeport		Islip	Brentwood
	Elmont			Central Islip
	Inwood			Oakdale
			N. Valley Stream	Islip/Brookhaven
		Valley Stream	Holtsville	
North Hempstead	New Cassel	Brookhaven	Patchogue	
	Westbury		Stony Brook	
Oyster Bay	East Massapequa		Centereach	
			Selden	
			Coram	
			Middle Island	

4.0 Further Considerations for Definition of Adequate Access to Transportation

Information from a multitude of resources provides supporting material for the development of a definition of adequate access to transportation on Long Island. Those sources, summarized in this report, included a literature review, peer analysis, and public input. The literature review was an important exercise in identifying how industry and government agencies identify and measure levels of access, as well as where obligations and priorities have been set. The peer analysis provided several examples of how other counties with similarly diverse density, income levels, age levels, and population with disabilities handle providing adequate access to public transportation. The public input provided by target population on Long Island was critical in defining what these groups expect in terms of access to transportation and personal responsibilities in using the system.

Additional key points that were considered as the definition of adequate access to transportation on Long Island was developed are noted below.

4.1 *Obligations for Providing Access to Transportation*

The federal government does not prescribe specific standards for level of service in public transportation. Rather, it has established several requirements regarding discrimination. Under federal law, transportation providers must provide access and service to all persons regardless of race, color, ethnicity, and abilities. They must also provide their services in a manner that does not disparately impact minority or low-income populations. These requirements are established in several laws and regulations, including:

- Title VI of the Civil Rights Act of 1964⁽¹⁰⁾ and its implementing regulations 49 CFR 21⁽¹¹⁾: prohibit intentional discrimination as well as discrimination in the form of an impartial policy or practice that has an unequal impact on protected groups.⁽¹²⁾
- Americans with Disabilities Act (ADA)⁽¹³⁾ and its implementation regulations 49 CFR 27, 49 CFR 37,⁽¹⁴⁾ and 49 CFR 38: bans discrimination based on disability in employment, federal, state and local government, public accommodations, commercial facilities, transportation, and telecommunications.
- ADA Accessibility Guidelines and Public Rights-of-Way Guidelines⁽¹⁵⁾: establishes a set of accessibility requirements for public entities that operate public facilities and communicate with the public. Under Title II, Subpart D (§35.151), *Program Accessibility*, the ADA requires that a person with a disability should be able to easily and conveniently approach, enter and use all public facilities (government facilities, places of public accommodation, and commercial facilities) being built or altered. The Public Rights-of-Way Guidelines address conditions exclusive to public rights of way, such as pedestrian access routes, curb ramps, warning surfaces, and pedestrian crossings. The draft guidelines apply to construction of or alterations to a pedestrian route or facility as part of a public rights-of-way improvement project (no alterations to existing rights-of-way would be required under the guidelines).
- DOT Environmental Justice Order 5610.2⁽¹⁶⁾: requires all operating administrations under the DOT to take the principles of environmental justice into account during planning and decision making activities

It was found that most of these regulations provide general guidelines or policies on the provision of transportation but do not specify access level standards. The exception is Title 49, Part 37. This Title specifically mentions that complementary paratransit service, required of public entities that operate fixed

route transit services, must be provided within $\frac{3}{4}$ of a mile from fixed route transit, and must meet other specific service criteria.

Additionally, through the United We Ride federal initiative, the federal government is making strides to improve human service transportation coordination.⁽¹⁷⁾ United We Ride is closely related to efforts at the federal level to implement Executive Order 13330 on Human Service Transportation Coordination, issued by President Bush in February 2004. Executive Order 13330 reasserts the federal government's commitment to improved mobility for transportation disadvantaged citizens and more efficient use of transportation resources. While United We Ride and the Executive Order do not establish requirements for state or local agencies to coordinate human service transportation services, they do make it clear that efficient use of the resources that are devoted to the provision of this type of transportation service is a federal priority.

New York State has a few requirements for public transportation providers and several other pieces of guidance regarding adequate access. The obligations include those from the State Transportation Operating Assistance Program (STOA)⁽¹⁸⁾ and DOT procedural requirements for pedestrian accommodations.⁽¹⁹⁾ The STOA requirements focus on general operating requirements while the DOT requirements deal with physical access and are based on federal guidelines from the American Association of State Highway Transportation Officials and the ADA Accessibility Guidelines. The guidance documents from NYS include the state transportation plan and the Quality Communities Initiative. The state transportation plan provides public transportation operators with strategies, guiding principles and ways to address transportation issues including coordination, technology, safety and transportation demand for demand responsive services. The Quality Communities Initiative flows from an executive order aimed at improving quality of life for New Yorkers through various initiatives, including providing transportation choices for residents that improve health, reduce automobile dependency, and alleviate congestions problems.⁽²⁰⁾

4.2 Transit Industry Standards and Guidelines

Standards and guidelines that are used within the transit industry to determine the suitability of fixed route service to a given area are often based on density measures. The most commonly used standard is a density of at least three households per acre or four jobs per acre to support transit service that operates at least hourly.⁽¹⁾ More complex standards that incorporate different types of density and characteristics of transit service have been developed for some local areas.

Fewer standards or guidelines relate to the suitability of flexible or demand responsive services to an area, although it can be inferred that areas that do not contain the densities of population or employment needed to support fixed route services would be served more effectively with one of these other transportation options. The level or quality of demand responsive service is sometimes measured by response time, or the number or percentage of trip requests that are denied.

Measures that are used to evaluate a transportation service's performance can also be used to determine desirable levels of service. Specific quantifiable performance measures have been developed to evaluate items such as the following:

- The extent to which target transportation markets are served (geographically)
- The temporal availability of transit service

- The ability of the transportation service to provide access to key destinations within a reasonable time and at a reasonable cost
- The equity of transit service provision across communities or population groups

Examples of specific industry standards and performance measures are provided in Appendix E, Literature Review Technical Documents.

4.3 Regional/Local Goals and Guidance

Long Island belongs to a larger region that encompasses New York City and counties such as Putnam, Westchester and Rockland which fall under the jurisdiction of NYMTC. Most of the regional documents from NYMTC and other organizations are for guidance purposes, not binding obligations. The regional transportation plan and NYMTC's shared goals emphasize balancing resource needs with the transportation priorities of providing convenient and flexible transportation access in the region and improving the quality of life, economy and environment of the region. The Area-wide JARC plan and Environmental Justice Assessment are other regional documents related to adequate access to transportation.

Long Island has several other plans and studies directly related to transportation issues in Nassau and Suffolk Counties. In general, these documents encourage the use of public transportation as an alternative to single occupancy vehicles. However, they also recognize the limitations to providing public transportation as a fixed route service, especially in low density areas, and are careful to suggest that coordination of systems and alternatives to traditional public transportation be implemented as much as possible. The documents indicate the need for a balance between what the providers are capable of providing and meeting the needs of the passengers with regard to service frequency, span and fare. Some of the major studies and their goals include:

- Long Island Bus Study ⁽⁷⁾
 - Add service to previously un-served areas
 - Expand services in Nassau Co. and complete basic service levels in Suffolk Co.
 - Pursue dedicated funding at state and local levels
 - Work toward inter-county coordination
- Long Island Non-motorized Transportation Study ⁽⁵⁾
 - Consider and include the needs of cyclists, pedestrians, and persons with disabilities in transportation plans, programs, services, and studies
- Nassau County Transportation Policy Recommendations ⁽²¹⁾ (It should be noted that these recommendations were not formally adopted by the Nassau County Office of Economic Development.)
 - Prepare for a shift from dependence on personal vehicles to a walk/bike/transit culture
 - Build on the LIRR network
 - Encourage transit use, especially for work trips
 - Create more bike/pedestrian options to transit stops and stations
 - Consider transportation and housing in relation to development plans

- Nassau Hub Major Investment Study ⁽²²⁾
 - New Suburbia: Target specific areas for economic development to stimulate Nassau County's economy while preserving its suburban character; Nassau Hub as center
 - Transportation Goal: Provide safe, high-quality, multi-modal transportation in Nassau Hub Corridor
 - Land Use Development Goal: Develop transit-supportive land use plans and policies for corridor
 - Design Goal: Integrate proposed transit stations into neighborhoods, preserve suburban quality of life
 - Economic Development Goal: Encourage new development to expand county's economic base
- Joint Executive/Legislative Taskforce on Transportation Issues in Suffolk County ⁽⁸⁾
 - Offer public transportation services within the financial limitations of county government
 - Employ technology and traffic calming methods so that trips for work, shopping and recreation cause minimal disruption to the community and environment

These studies provide a vision and set of goals that are based on the transportation needs and resources available on Long Island. These goals are useful to the public sector in defining adequate access to transportation but are not obligations for service providers.

4.4 Access Policies in Other Areas

The literature review also provided an expansive overview of different transportation policies and strategies from various states, counties and localities. It is important to consider the structure of government in transportation decision making for each area. Due to differences in decision making power, some innovative ideas deployed in one state or region may not be feasible on Long Island. Despite these possible limitations, the information from other areas on how they define adequate access to transportation can be valuable to Long Island transportation decision makers and should be considered in the context of Long Island's transportation needs.

At the state level, mobility or access goals are often broadly stated. Among the more interesting goals that are expressed in the state plans that were reviewed are the following:

- Some form of public transportation should be available in all communities (Washington) ⁽²³⁾
- Public transportation should connect individuals in geographically isolated areas with jobs, commerce, and services (Washington) ⁽²³⁾
- At a minimum, transportation disadvantaged individuals should have access to transportation options such as ridesharing, volunteer programs, taxi service, or minibus service; all areas with populations of 10,000 or more should receive demand response service (Oregon) ⁽²⁴⁾
- Public transportation should focus on mobility management and coordination of services (Oregon) ⁽²⁴⁾
- Strategies should be developed to reduce barriers to accessing basic services, employment, education, and social services (Oregon) ⁽²⁴⁾
- Access to public transportation, and information about using it, should be provided to seniors (Oregon)
- Mobility needs in small communities should be addressed (Oregon) ⁽²⁴⁾

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- Density should determine the type of service that is provided; services must meet the performance standards that have been established for urban, suburban, and rural areas (Vermont) ⁽²⁵⁾
- Transportation should support access to employment, congestion mitigation, and economic development objectives (Vermont) ⁽²⁵⁾
- Local transportation options must be provided for transportation disadvantaged individuals, and in a coordinated manner (Florida) ⁽²⁶⁾

Specific strategies for providing transportation services or standards for making decisions about the type or level of service to be provided are more often established at the county, municipality, or transportation provider level. Examples local mobility strategies include the following:

- Find cost-effective transportation options for transit-dependent populations to supplement mandated paratransit services, and involve paratransit-eligible individuals in general public transportation services (King County Metro) ⁽²⁷⁾
- Preserve service that provides direct access to developments and activity centers for seniors and persons with disabilities (Corvallis Transit System) ⁽²⁸⁾
- Use service routes or deviated fixed routes to cover destinations important to seniors and persons with disabilities when regular fixed route is not feasible (Corvallis Transit System) ⁽²⁸⁾
- Promote paratransit use for seniors and persons with disabilities who are unable to use regular fixed route (Corvallis Transit System) ⁽²⁸⁾
- Only allow new developments serving seniors and persons with disabilities to locate along the primary public transportation corridors or major arterials that transit vehicles can easily access, including housing and activity centers (Corvallis Transit System) ⁽²⁸⁾

More detail about mobility goals and service standards can be found in Appendices D and E.

4.5 Access Policies in Other Areas: Case Studies

The goal of the case study analysis that was conducted as part of this project was to identify counties with similar demographic, density and income characteristics to those of Long Island. A key consideration was whether other counties showed a variation in density, income levels, and population age similar to that found in Nassau and Suffolk Counties. It is difficult to find counties that are similar in every way possible in order to compare public transportation services; however, three counties were selected as case study sites based on criteria including population density, median income, ethnic populations, and numbers of older adults and persons with disabilities^{vi}:

- Barnstable County, Massachusetts
- Broward County, Florida
- Westchester County, New York

Government structure for transportation and related decision making was not a selection criterion, but may play a role in how feasible it would be to implement examples from other areas on Long Island. Despite the

^{vi} Additional information on the case study search process and analysis is in Appendix F.

challenges of identifying comparable case study counties, several common practices, interesting ideas and creative solutions for transportation decision making were found.

In general, each county has some form of state and regional level of guidance to inform its local transportation decision making process regarding level of access to transportation. The regional guidance is usually in the form of a transportation or comprehensive plan that outlines the goals and objectives for public transportation in the county. Each county also has a set of standards for public transportation service. These vary in terms of detail, but include standards for minimum level of service or service standard requirements that address both investments and transportation services. Related to service standards, each county uses an annual performance review to evaluate the services being provided and identify where adjustments may need to be made. All of the counties identified a growing elderly population as a key concern for the future of public transportation demand and a reason for better planning and coordination within the public transportation system.

Human service transportation is handled similarly across these three counties. The primary fixed route public transportation provider is also the primary provider of human service transportation. The providers either offer the majority of the rides themselves or manage/coordinate the system of human service transportation. CCRTA in Barnstable County serves as the coordinator for a brokerage system of human service transportation. Each of the counties also serves as an information clearinghouse by providing its residents with a guide to demand response services.

Concern over funding for public transportation is another common thread for all of the counties, Nassau and Suffolk Counties. Most public transportation providers do not seem to have enough funding to provide the level and quality of service they would prefer. Fortunately for Broward County, Florida has a source of dedicated funding for public transportation that serves transportation disadvantaged populations. Massachusetts providers are in the process of arguing for dedicated funding as well.

Many of the issues and concerns identified by the customers and providers of public transportation on Long Island are similar to those faced by other areas. By understanding these issues and finding ways others have addressed them, Long Island can create a transit system that provides the most adequate access to transportation possible.

Complete documentation of the case study review can be found in Appendix F.

4.6 Public Input: Issue Group and Focus Group Meetings

One of the questions posed in the issue and focus group meetings was what the participants would consider to be adequate access to transportation.

Adequate access to individuals and agency representatives who took part in those meetings means that transportation services are of acceptable quality. Service quality is reflected in a number of characteristics, including:

- Convenience – services are close to origins and destinations, dependable, easy to use, involve few and simple connections, and operate frequently
- Affordability
- Coordination – schedules are coordinated so that wait times are reduced
- Safety and comfort – services are supported by proper infrastructure, such as signage, shelters and benches, accessibility features, and lighting; vehicles and facilities are clean

- Driver training – drivers are not only familiar with the operation of vehicles and accessibility features, but are sensitive to the needs of older adults and persons with disabilities
- Available information – travelers know what services are available and where to find information about them; information is provided in multiple formats and languages

Other questions raised in the issue and focus group meetings concerned that factors that people consider when deciding where to live and work, and the respective roles of government agencies and individuals with regard to meeting transportation needs.

Factors that influence choices of residential location for the participants and their constituent groups include affordability, access to jobs, access to transportation, proximity to friends and family, and convenience. Access to transportation was a bigger factor in residential location choices for students, immigrants, and persons with disabilities than for seniors, who are more likely to be settled in long-term homes.

On the topic of government vs. personal responsibility for meeting transportation needs, the opinions of the meeting participants were mixed. Students, immigrants, and some persons with disabilities indicated more willingness to make location decisions based on transportation options and did not expect government agencies to provide identical types and levels of service in all areas. (However, it was noted that transit-dependent populations may have limited housing choices and may not be able to select the location that offers transportation options.) Many seniors, on the other hand, are most comfortable in the homes in which they have lived for years and which were chosen when access to transportation was not a factor, and do not wish to move to more convenient locations.

Some participants felt that the societal benefits of transit service (such as reduced congestion, improved air quality, and so forth), warrant its provision by public agencies. However, concerns about higher taxes to pay for transit services, and a possible loss of the suburban lifestyle were also raised.

4.7 Interviews with Transportation Providers and Other Stakeholders

Interviews with stakeholders were another element of the public outreach effort made in connection with this project. The purpose of the stakeholder interviews was to obtain input from organizations that were interested but unable to participate in the issue group meetings or able to offer a different perspective or additional information on the subject of transportation needs and “adequate access to transportation.”

Comments made by transportation providers and other stakeholders are summarized below.

4.7.1 Transportation Provider Interviews

A set of 10 topics were identified to solicit comments from the public fixed route operators on Long Island. At the conclusion of the interview, any additional comments not covered previously were solicited.

Representatives of the following agencies were contacted:

- MTA Long Island Rail Road
- MTA Long Island Bus
- Suffolk County Transit
- Huntington Area Rapid Transit
- Long Beach Transit

The interviews were conducted by telephone and typically lasted between 15 and 30 minutes. The key comments of the interviewees are presented below.

1. *How do you currently make decisions regarding the type and level of fixed route and paratransit (if applicable) service to provide? (e.g., legal or regulatory obligations; service standards or guidelines; consultation with communities, advisory committees, and/or other public agencies; funding availability)*

Many of the transit officials indicated that substantial effort has been devoted to monitoring their systems and developing plans to improve current service. Some of the agencies indicated that they have service standards and guidelines which form the basis for service proposals. Others rely on a less formal process oriented to their knowledge of the transit system and the service area. There are few, if any, legal or regulatory obligations that influence service other than those imposed by ADA and the need to hold hearings for service changes or make presentations to elected officials that review the department budgets. In some cases, standing advisory committees composed of the public and special client groups provide a mechanism for input to transit service. There was general agreement that funding is the most critical criterion in defining transit service levels. A common point was that although service levels need to be expanded and proposals have been delineated, these plans could not be implemented because of funding constraints.

2. *What challenges do you face when trying to respond to service needs or gaps? (e.g., funding limitations; other entities that may be involved in implementing changes are not cooperative – municipalities or property owners may not approve or maintain additional bus stops, for example; land use decisions make providing transportation services more difficult; service changes are implemented but ridership is low)*

As noted above, funding is the single most important determinant of current transit service. Other factors play a lesser role, but do influence service. Differences are noted by transit agency, which reflects the diverse nature of their service areas. In many communities, development is taking place in low density areas some distance from current services. This results in relatively costly extensions in areas where the ridership potential is limited. Another facet of new development is that many new residential and commercial projects are not transit friendly. Building setbacks are substantial, thereby mandating long walks from bus stops; in many cases sidewalks and other amenities are not provided. There is a need for planning and zoning boards to place greater importance on transit and a need to take actions that encourage public transportation use. Another observation is that people object to buses on their street, so when agencies propose to try to expand coverage they are faced with opposition. Similarly, capital projects are delayed because of opposition of adjacent property owners. One comment is that transit has a negative perception which discourages its use and limits support.

3. *Were there any criticisms of your services or perceptions of service gaps that came out of the issue group or focus group discussions to which you would like to respond? (This is an opportunity for the providers to identify service needs that have been addressed, or needs that they tried to address but could not due to some barrier)*

Often comments pertaining to service relate to its availability (i.e., coverage) and the level of service (i.e., frequency and span). Other comments relate to quality of service (e.g., cleanliness of vehicles and on-time performance), customer service and the situation where some transit critics are vocal. The interviewees indicated that the public perception of transit is worse than an objective review would suggest. In some cases, this negative view reflects a lack of knowledge of the transit system and/or unrealistic expectations among non users. The view was that transit riders had a more favorable view of service.

4. *Based on the issue group and focus group discussions, do you feel that the public has an accurate perception of the level and quality of service you provide?*

The responses to Question 4 address the issue of perception and the dichotomy of views between users and non users. A frequent comment was that improvements could be made to the public transportation system, but that inadequate funding is an impediment.

5. *What level of service, availability, and choices would constitute adequate access to transportation for residents of Long Island?*

The responses varied by agency because of the nature of the service areas. Some operators cited their service guidelines as a basis for defining adequate while others relied on their own subjective views. Typical comments were that fixed route service might be operated at headways between 15 and 30 minutes during the peak periods with less frequent service (i.e., a bus every 30 to 60 minutes) during off-peak periods. Other comments related to when service would be available. Spans could suggest 16 hours of service with heavier corridors providing "owl" service. The ADA demand responsive service would match the service span. Comments on coverage were less specific. There was general agreement that the fixed route services could not be used to provide mobility in all areas and for all markets. Further, adequacy must be considered in light of the density and other characteristics of the service area. In most cases, operators indicated that adequacy was difficult to specify and they had to place all service decisions in the context of available funding.

6. *What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations for home, work, etc.?*

A common theme was that individuals and businesses should assume responsibility for their location decisions. This would include payments to underwrite the costs of transit service or possibly not having service in outlying areas. The dilemma for some transit agencies is that development takes place in outlying areas that is not transit friendly and then requests are made to elected officials to have transit service. Government must be more cognizant of transit needs in their planning and zoning deliberations. There should be a logical connection between land use and transportation decisions.

7. *How can existing services be used to provide increased service to underserved areas? (This gets at the opportunities for coordinating services between providers – fixed route and/or paratransit)*

The general view was that there are opportunities for coordination between fixed route and paratransit operations, although greatly expanded service to underserved areas will require more than just current resources. In some cases, systems are at capacity which will mandate expansion with an increase in funding for vehicles and operations. Some agencies indicated that using their ADA paratransit for the general public would require more funding in a program that is taking increasing amounts and a larger share of the overall agency budget. All resources, including transit providers, paratransit operators, taxicab companies and school bus operators can comprise a coordinated system. There may be regulatory barriers, issues of municipal barriers and restriction on client groups that will need to be considered.

8. *What new, non-fixed route services are currently needed to adequately address unmet needs?*

As noted previously, there is concern that the fixed route bus service be extended to areas where densities would not support this type of public transportation in a cost effective manner. Nonetheless, many

agencies indicated that with additional funding they could improve service on their bus systems. Many comments related to services other than fixed route, fixed schedule transit. Suggestions included demand responsive service that would be available to the general public. Another service proposal is “flex” routes (i.e., either route or point deviation) where buses can divert to provide more direct coverage. This service concept tries to combine the convenience of dial-a-ride service with the cost efficiency of fixed route bus lines. Another proposal is “last mile” service where a demand responsive service would operate between an existing bus route stop and a specific origin or destination. One comment was related to the use of small vehicles, which are more compatible with local streets. One person cited the need for coordination to better integrate both fixed route and demand responsive services.

9. *What new, non-fixed route services will be needed in the future?*

The comments for this discussion topic were the same as Question 8. The approaches to improving service would be the same, although the need would be greater in the future.

10. *What role can technology play in improving mobility?*

The interviewees cited different types of technology that could be employed. They included proposals for GPS, AVL, real-time transit information, alternative vehicle propulsion systems, MDT, smart card fare collection, lighter and different vehicles. The idea of these technologies is to improve management of transit resources and provide greater customer information and amenities. Some agency representatives indicated that while technology would be helpful and should be pursued, it would address the need for system expansion in unserved and under-served areas.

11. *Are there any other comments that you'd like to make?*

Most respondents felt that the broad range of topics was sufficient and did not offer additional comments. Some mentioned new federal initiatives such as the New Freedom program and United We Ride. One suggestion was that there should be more focus on transportation by public officials and that all the resources (e.g., school buses) should be considered in developing improvement programs.

4.7.2 Interviews with Other Stakeholders

In addition to the issue and focus group meetings, individual interviews were conducted with several stakeholders. The purpose of these stakeholder interviews was to obtain input from organizations that were interested in the issue and focus group process and were unable to participate, or because the organization was able to offer a different or distinct perspective on transportation access.

Three categories of stakeholders were initially identified: transportation providers, other governmental and non-governmental organizations, and service and advocacy organizations. Unfortunately, most of the service and advocacy organizations did not respond to requests for interviews; the transportation providers and other organizations were more responsive.

As in the issue and focus groups, key information discussed with each stakeholder included the definition of adequate access to transportation, an understanding of existing issues, challenges and needs, access to information about transit services, the role of individual and private sector responsibility and new non-fixed route or coordinated services that could address needs.

The following sections present a summary of the transportation provider interview, followed by the entirety of the interviews with each of the other organizations and service and advocacy organizations. As those

interviewed within these two categories are very distinct from each other, it was less useful to compile an overall summary than to provide the full detailed responses.

New York State Department of Transportation

Two interviews were performed with representatives of the New York State Department of Transportation (NYSDOT), one with Tom Vaughn, Jim Davis and Mark Boucher of the NYSDOT Main Office and one with Wayne Ugolik and Harry Tenenbaum of NYSDOT Region 10. Their interviews were conducted separately, but detailed answers from both interviews are listed together to provide a comprehensive view of NYSDOT's views.

1. What does "adequate access to transportation" mean to your agency?

Main Office: It is the mission of the NYSDOT to provide adequate and balanced, efficient transportation at a reasonable cost to the people and the state. NYSDOT has \$2.5 billion dollars for operating public transportation plus capital investments on top of that. Transit is the predominant means of mobility to the public. NYSDOT looks at how they are managing the investment and how it can go further to reach a broader range of users. What changes can NYSDOT make to the core system to accommodate as many people as possible? Do people understand the service? Is the complexity of the system a barrier? How do we identify barriers to the system and then systematically remove these barriers. Accessibility plays a big role in NYSDOT's decisions.

When people think of adequate access to transportation, they usually think public transportation, but now that perspective is being broadened to include demand responsive services. Through the United We Ride program, NYSDOT learned more about coordination. Where is the dividing line between public responsibility and personal responsibility? How do you handle those people without access to public transit? People have been moving out of the urban areas to the suburban and rural areas which make things more challenging. NYSDOT has a limited number of funds to spend and they have to decide the best allocation of funds. Providing frequent service allows less funds to provide service in the less dense areas. There are trade-offs between operating cost versus usage or coverage.

The general model for fixed route transit is that people will walk ¼ to ½ a mile to a fixed route transit service. How does NYSDOT accommodate people that do not fall into this area? How can routes be designed to accommodate and serve the most people? What is the appropriate way to offer information to the public transportation riders? Most people will walk ¼ mile to access transportation. How much money will be justified to provide a certain level of service?

NYSDOT has a large investment in the highway system and they need to make that investment more efficient through transit. Innovative methods to reduce demand and therefore increase capacity are needed. It is important to provide the most relevant transit network to attract people who would otherwise be driving and using up capacity.

Region 10: Adequate access to transportation means reasonable opportunities that are cost effective but recognizing that all individual travel needs cannot be addressed by public agencies. It must be dependable and affordable but personal responsibilities must be factored in.

2. How does your organization facilitate access to transportation? or even provide transportation itself?

Main Office: NYSDOT provides state highways and bridges in Nassau and Suffolk Counties. Money is invested in the transit system and in elderly and handicapped vehicles, but NYSDOT does not operate the

public transportation. They do provide technical advice like with Trips 123 or other services. NYSDOT works with the operators to find ways to make the system more understandable and available to use. NYSDOT operates supportive projects and investments.

NYSDOT is looking at supportive opportunities for integrating other kinds of information to make it easier to use the existing fixed route system. An example would be an automatic vehicle locator system that could show when the next bus will arrive. Information could be provided via the internet or personal digital assistants (PDAs). NYSDOT will try to coordinate with agencies to have a uniform system and to develop "Best Practices" approaches. What are the opportunities for integrating information to the commuter? There is no consistency between the bus and train schedules. Helping the transit operators communicate with the customers is what NYSDOT tries to do. Provide the buses with priority through the use of signals. Marrying the INFORM system with public transportation.

Region 10: Primarily NYSDOT offers state operating and planning assistance. They coordinate with the transit properties and provide a public service to ensure that all federal and state requirements are met. They have programs with Nassau and Suffolk Counties for innovative transportation and gap closures. NYSDOT administers the Section 5310 grants, which provide buses to non-profit agencies and certain public bodies for transporting elderly and disabled people.

They also administer the Job Access and Reverse Commute (JARC) grant program. Job Access funds help to improve mobility and economic opportunity for welfare recipients and other low-income people through the provision of new or expanded transportation services. Reverse Commute funds help improve mobility to suburban employment opportunities for the general public, including welfare recipients and low-income individuals, and those with disabilities.

In addition, NYSDOT has a contract with Long Island Transportation Management (LITM) which is a non-profit organization that has a mission is to decrease traffic congestion and air pollution by promoting voluntary commute alternatives (carpooling, vanpooling, bicycling, telecommuting, compressed work schedule, flex time, etc.) to commuters and employers.

3. *Does your agency provide specific information on transportation services? Access to, or information about, these services?*

If so, what types of information do you provide?

Main Office: See number 2 above.

Region 10: NYSDOT does not provide direct service, but rather provides assistance. LITM disseminates information about commute alternatives via their website, radio, and media advertisements.

Trips123 provides real-time and static information collected through TRANSCOM, a 16-member coalition of transportation agencies including NYSDOT. TRANSCOM, along with the agencies, manages the project. A public/private partnership developed the technology to integrate member agency transportation information, process it, and distribute it through the Trips123 services. Funding is provided by the USDOT, the New York Department of Transportation, TRANSCOM and its member agencies.

NuRide is a ride matching service that rewards people for sharing rides with the use of coupons through employers. Ridepro is online through LITM. Users input their needs and an email will be returned with ride matches. The LITM website has links to all travel schedules. LITM works with business organizations to get a census of the people using the service.

Long Island Region Improving Commuting (LIRIC) Grant Program is designed to help Long Island employers implement programs that reduce traffic congestion and pollution during peak commute-to-work hours. Grants can be used to promote alternatives to drive-alone commuting, including: carpooling, vanpooling, telecommuting, public transportation and bike/walk travels.

Eligible grantees include public and private employers as well as owners/operators of major trip generators (shopping malls, office parks, etc.) with at least 30 employees at a single work site. Planning and development studies are not eligible for LIRIC funding.

In order to receive a LIRIC Grant, employers must be members of the Commuter Choice Program. The Commuter Choice Program is a voluntary program designed to assist Long Island employers with the promotion of commute alternatives at their worksite.

Once an inquiry is received, Long Island Transportation Management will administer a site survey to employees to analyze commute habits and assess which commute alternatives show the greatest promise. A return rate of at least 50% is required to proceed with the grant application process.

Eligible projects include:

- Carpool incentive programs
- Vanpools
- Guaranteed Ride Programs
- Parking Management
- Employer-provided transit fare subsidy programs
- Telecommute Programs (Capitol acquisition of computers is not eligible.)
- Bike To Work Programs
- Programs that bridge gaps in existing transit service such as operation of new shuttle bus services between worksites and park-and-ride lots or railroad stations. (Capital acquisition of buses is not eligible.)

LIRIC grantees are strongly encouraged to develop innovative and comprehensive work programs that may involve a number of actions, which if implemented, have high potential to reduce drive alone automobile travel on surrounding highways where traffic congestion is prevalent during peak periods. Grants are limited to \$100,000 in total, or \$1,000 per participating employee, whichever is less. Funding availability is limited to a one-year time period.

The Regional Commuter Choice Awards are the local expansion of the U.S. Environmental Protection Agency's Best Workplaces for Commuters, a federal program recognizing companies that have achieved a national standard of excellence in alternative commuting programs. The Regional Commuter Choice Awards, an joint initiative of NYSDOT, NYMTC and the Metropolitan Mobility Network, recognizes local companies that have demonstrated their commitment to reducing traffic congestion and helping the environment by providing their employees with alternatives to single vehicle commutes. Among the services being offered by this year's winners are carpools, vanpools, transit subsidies and telecommuting.

4. What are the methods of communicating about access and services?

See above.

5. If applicable, what are the hours of operation of any types of call centers, stations, etc? Are these services "live" or automated?

N/A

6. What provisions are made for persons with special needs such as disabled persons, non-English speaking persons, etc?

Main Office: At the state level, NYSDOT has not been hands on with the operators. The FTA, as a part of their funding, has a regulatory program regarding on board announcement at all major stops. The drivers are aware of the issues and are held accountable in order to receive federal funds. The state is available to research "best practices" but does not dictate specifics.

The 5310 program works with special needs and disabled people to provide workshops and technical assistance. Suffolk County has Braille materials at major bus stops and automated systems. Operators are aware of all ADA regulations.

Region 10: There are Federal programs for education funds. No specific program through NYSDOT.

7. What are the challenges in providing access to, or information about, transportation services?

Main Office: It is difficult to describe what a bus does in the context of a printed schedule. Finding ways of making maps and timetables that are easier to understand is a challenge.

Trips 123 is a building block and could be expanded and built upon. Trips 123 can develop a customer itinerary to serve a person's needs. The system cuts across all providers. Suffolk County services are not in Trips 123 yet, but NYSDOT is working to incorporate their information in the short term. NYSDOT still needs to market Trips 123 better. There is a regional branding effort being undertaken by NYMTC and the MTA has a link on their website. NYSDOT is still working on the esthetic and technical upgrades. In effect, NYSDOT is sort of "beta testing" the service. Some regional kiosk programs are trying to integrate the Trips 123 information.

A challenge is to provide information on the non-fixed route services. Currently information is provided from the human service agencies to the local riding public.

Customer expectation is a one seat ride but more and more that is not doable. Complicating matters is that most people do not understand how to take multiple lines. It is difficult to get people from the driveway to the infrastructure/event where they are traveling to and to insure that the transfers are protected and safe.

Region 10: Since NYSDOT is not a direct provider of public transportation, the challenge is for NYSDOT to equitably and fairly distribute funds and to engage transit providers to get information out to as many people as possible, to provide a good service and to provide access to their service.

8. What are the challenges in providing access to transportation services? What and where are the gaps in service?

Main Office: There are time of day gaps where there is either no service or the service is not frequent enough. The gaps are temporal, not enough service due to gaps in times tables. The elderly and handicapped who have been driving their entire lives now have to adjust to using public transportation. There are geographic challenges. There are gaps in the understanding of the needs and demands of the market.

There is a gap in understanding how to allocate resources and service models to serve all the transit market segments. Economics of scale of combining market segments without imposing gaps in needs, demands, and performance.

Region 10: Intermodal connections (coordination between trains, buses, bikes, taxis) and transfers are a challenge. Most people take more than one mode to get to their final destination. Customer expectations can exceed what can reasonably be provided. People have to understand that there is a personal responsibility. There is always a challenge in how to split the "funding pie." For example, people may expect transit service to operate at 10 minute headways and that the transit service should be no more than one mile away from their home; however, they expect that there should be no additional taxes. There has to be some level of personal responsibility for the service levels. Both Suffolk and Nassau Counties have identified locations where there are gaps in the schedules. NYSDOT has some projects to try and close those gaps but some gaps cannot be addressed under the current funding levels. Gaps have been identified as part of the Long Island Bus Study.

9. *What type of coordination exists between your agency and other transportation providers? What are the challenges in the coordination of services?*

Main Office: NYSDOT facilitates conversations and discussions among operators. Getting the operators to communicate with each other is important. Service providers are not always sure how to work together to share services. It would be interesting to see if human service providers could deliver customers to the fixed route systems in ways that would be appropriate. NYSDOT does not have a good handle on the existing human service transportation model, so it is hard to judge whether it is effective. NYSDOT lacks the ability to require information since they do not provide much direct funding to the human service organizations.

Region 10: See above.

10. *What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations?*

Main Office: This is an economic question of equilibrium. This is the key question that should be pursued. ADA and paratransit is a federally driven mandate. Ideally, everyone should have a one-seat ride from their work to their home but this is not realistic.

Region 10: Appropriate population densities need to exist for public transportation to be effectively provided, otherwise the service does not make sense.

11. *What role does the private sector play in meeting mobility needs? What role could it play?*

Main Office: Employers feel that they are not required to provide access. How can we get employers to see the benefit of assisting with access or locating in a more accessible place? Providing transit checks to employees may push people to use mass transit. Getting hospitals and doctors involved is also important because appointments drive the variability of service. Municipal zoning officials also have a role in determining employment and residential patterns. Pressure needs to be applied to deal with the aging issue.

Region 10: Taxis serve LIRR Stations, airports, and homes and possibly could play a larger role in meeting mobility needs. School buses and companies that operate private coach buses could also assist with mobility needs. Employers can play a role in assisting with the commute. They can reduce the number of cars on the road by providing for private buses. There is a role for the private sector can play but it will be expensive. The private sectors role will be driven by the market and people's willingness to pay. Cost may

prohibit access for the poor, foreign, disabled etc. because it is too expensive. It may be possible for the government to provide travel vouchers to cover part of the cost of privately operated services.

12. How can existing services be used to provide increased service to underserved areas?

Main Office: From a public standpoint, the existing services will be unable to survive by expanding service. If the para-transit services are expanded, it may force a reduction in fixed route services. How do you finesse providing service to fewer people (via non-fixed routes) while cutting back frequency on the better used fixed routes? There is a psychological barrier to overcome. More money in the 5310 program will be helpful but how does that money get spent.

Region 10: If we have the funding, we could expand routes where there is no service but only in areas where there is adequate density/demand.

13. What new, non-fixed route services are currently needed to adequately serve those you represent?

What new, non-fixed route services will be needed in the future?

Main Office: This is a geographic issue, so NYSDOT is not your best source for this information. We need an understanding of the coordination of the fixed route services with the non-fixed route services and work on transfers that are reliable. Emphasis should be placed on leveraging the existing services that function as a network. The answer may be new services.

Region 10: Better service is needed on the north/south routes. Demand response services may make sense in some areas but it will be more expensive and additional funding would need to be provided. The 5310 program covers the cost of a bus provided for the handicapped. If the buses were open to all needs, the service would cost more money.

14. What role can technology play in improving mobility?

Main Office: Advanced Vehicle Locator (AVL) systems and Trips 123 are two good examples of technology. GPS systems on every vehicle would enable someone to see what bus they would need to take at the appropriate time. These technologies would provide the agency with the proper information for the rider. Technology must facilitate integration across the network. Dynamic dispatching and ride booking that cuts across multiple agencies is needed. Technology has to be relevant to the individual. Touch screens may be great but senior citizens may not know how to use them.

Region 10: Technology can play a role in providing information about schedules and services that are available. Problems occur for the people that are technologically challenged. TRIPS 123 is a wonderful service but it is web based. How do you make that available through the telephone? If TRIPS 123 were more accessible, it would be easier to be advertised. More general advertising is also needed because many people are not aware that certain buses exist. Electronic signs at the bus stops and train stations that show how long till the next train or bus are also helpful mobility tools.

15. In summary, what level of service, availability, and choices would constitute adequate access to transportation?

Main Office: NYSDOT is looking for that information to come out of the study. Some key thoughts are that integration is crucial, technology needs to be used better, and finally, groups need to collaborate to find the best solution within fiscal constraints rather than in a competitive position which wastes time and resources.

Region 10: The purpose of this study is to get this information.

Long Island Regional Planning Board

Seth Forman, the Acting Executive Director of the Long Island Regional Planning Board, provided this interview. The Long Island Regional Planning Board is comprised of appointees from both Nassau and Suffolk Counties, and examines critical issues that affect the region, including transportation, housing, environmental protection, economic development, energy planning, homeland security and emergency preparedness.

1. What does “adequate access to transportation” mean to your agency?

Adequate access to transportation means that people can get to and from work in a reasonable time span. It is affordable and the handicap can access food and retail areas.

2. How does your organization facilitate access to transportation? or even provide transportation itself?

Our organization does not but we are planners/researchers. We have drafted plans for transportation and have recently completed a 2030 plan.

3. Does your agency provide specific information on transportation services? access to, or information about, these services?

We put bus routes/maps on the internet sites. We are a data center in New York State for the census.

4. If so, what types of information do you provide?

Our information is census-based.

5. What are the challenges in providing access to transportation services? What and where are the gaps in service?

In Long Island, there is a very large gap for those who depend on mass transit. The bus routes are not extensive and the bus frequency is low (most buses run empty most of the time). There is no light rail available and the only railroad is the Long Island Rail Road. How do you increase frequency when the existing trips are low in passenger volume?

6. What type of coordination exists between your agency and other transportation providers? What are the challenges in the coordination of services?

No coordination.

7. What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations?

N/A

8. What role does the private sector play in meeting mobility needs? What role could it play?

The public sector is responsible for 96% of mobility. The private sector should play a large role. If you're talking about a call on demand transport service, the private sector should be totally responsible.

9. How can existing services be used to provide increased service to underserved areas?

Not sure.

10. What new, non-fixed route services are currently needed to adequately serve those you represent? What new, non-fixed route services will be needed in the future?

There should be more funding for the non-fixed route services. The transportation system (autos) works well for Long Island. It would be cost effective to provide this service rather than raising the frequency of the bus routes.

11. *What role can technology play in improving mobility?*

A lot, especially when it comes to things like congestion pricing. There should be better ways of way making turning lanes and maybe even better use of right of ways above or below ground.

12. *In summary, what level of service, availability, and choices would constitute adequate access to transportation?*

I do not think there should be public transportation to go anywhere at anytime. A much more practical use of resources would be to attempt to provide transit to work, healthcare, food, and other essential services for those who currently have limited access to those things.

Long Island Association

The Long Island Association serves as Long Island's Chamber of Commerce, and provides valuable services and programs/representation to its membership organizations, particularly the small business community. It actively advocates the interests of, and promotes cooperation among, the business, labor, educational, scientific, technology, not-for profit and civic communities and seeks to create and retain balanced economic opportunities and jobs in a clean, healthy and safe environment.

Mitch Pally, Vice President for Legislative and Economic Affairs, was interviewed.

1. *What does "adequate access to transportation" mean to your organization's constituents?*

It means being able to get to and from work.

2. *How do those you represent use transportation services? How do they commute to work? How do they do business? How are employees affected?*

Some of the employees use the bus or mass transit services to get to work or school. Getting employees to work, particularly those who do not own a vehicle, is an issue. Employers may hire vans to transport people from a central location or railroad station or approach the transit providers to modify a route or place a bus stop in front of their business.

3. *What are the transportation issues that are important to those you represent? What are the unique needs of your constituents?*

The main focus is on the ability to get people and freight to and from businesses. Relieving congestion on the road is of great importance because congestion affects business. The reduction in congestion will produce productive employees (less stress getting to and from work). It is much harder traveling eastbound in the AM.

4. *How do your constituents access information about the transit system? What are the challenges? What is missing? What is working?*

I assume that information is shared through the internet and through word of mouth. Companies sometimes help and provide information. The more information that is available, the better the use of mass transit will be.

5. *Does your organization do anything to facilitate access to transportation?*

We work closely with the LITM to provide a forum to get information to the business owners and employees.

6. *What challenges does the current transportation system create? What and where are the gaps?*

The challenge is the adequacy of service and the cost of the service. It is important to keep the cost of transit so that it is reasonable for everyone. Service needs to be expanded to areas that are not adequately served. Bus service should be provided, but convincing employees to use it is difficult (as opposed to driving). There are gaps in Suffolk County due to the lack of service on Sunday, evenings, and a lack of density. The north and south service is not as rich as east and west service.

7. *For your constituents, what are the main motivating factors in deciding where to live? What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations?*

School district is the motivating factor for most people. If there were more transit accessible locations available, people would utilize them. People tend to live as far as possible from the transportation route due to the living area around the routes. People feel it is like living in New York City and they want to live in a more suburban area.

8. *What role does the private sector play in meeting mobility needs? What role could it play?*

The private sector tries to compliment the public sector. Most employers feel it is government's responsibility to provide service. The private sector could play a larger role, but big businesses will be the ones because they have more resources. Employers could provide more information to employees.

9. *How can existing services be used to provide increased service to underserved areas?*

Increased service could be provided to underserved areas, if the county or the state decides to increase the funds for transit so that the system may be expanded.

10. *What new, non-fixed route services are currently needed to adequately serve those you represent? What new, non-fixed route services will be needed in the future?*

There is always a need for more eastbound service in the AM period. There is no express bus service on Long Island. There are huge gaps on the east end. More development should be transit oriented to allow for improved service. If you build it, they will come.

11. *What role can technology play in improving mobility?*

It provides information to people. Train or bus schedules sent out through email or cell phones.

12. *In summary, what level of service, availability, and choices would constitute adequate access to transportation?*

If more options are available, more people would use mass transit instead of driving. The Suffolk County level of service needs to be tremendously expanded. The highest level of traffic is on a Sunday in which no mass transit is available.

Stony Brook University

Stony Brook University, part of the State University of New York system, is located on the north shore of Long Island in Suffolk County. The university has approximately 6,500 undergraduate students, of which 45-50% commute to and from the campus. In addition, Stony Brook University also operates Stony Brook

University Hospital, the only tertiary-care center in Suffolk County, and which serves as a regional center for advanced patient care, education, research, and community service. major hospital facilities for residents throughout Long Island.

This interview was conducted with Ms. Shannon Kelly, Commuter Student Services Advisor. Ms. Kelly's role is to assist the 50% of undergraduate students who commute to Stony Brook University. Her office provides many services, one of which is to assist with finding information about transportation services to and from the campus.

Stony Brook University also operates its own campus bus services, which is operated by a different department, the Transportation and Parking Division. The campus bus service, according to the Stony Brook website at <http://www.Stonybrook.edu/parking/>, offers weekday and weekend routes.

Response to detailed answers follow, below.

1. *What does "adequate access to transportation" mean to your organization's constituents?*

For the LIRR, adequate access means if the schedules are appropriate for serving classes or university events.

Bus – if students can get to school in a timely manner. Although there are routes that go to campus, they may not actually run where the students live. There may be too many transfers, or the route may take too long.

Dependability of bus schedules and transfers is important.

Scheduling that is convenient for timing of classes and special university events.

2. *How does your organization facilitate access to transportation? or even provide transportation itself?*

The university has an on-campus bus system with a few routes. It is operated by the Transportation and Parking division. Some routes go off campus to the mall or Walmart, etc.

Commuter Services (Ms. Kelly's office), provides information to students regarding train schedules. There is an information center in their Lounge where train schedules can be picked up, as well as probably other places on Campus. There are too many bus schedules to stock, so students are referred to the web.

University websites link to LIRR and Suffolk Transit.

Students can come to the university for assistance or, if they have problems finding information online, Commuter Services will assist them with finding what they need to know.

3. *How are your organization's constituents commuting to work (i.e. bus, carpool, train, walk, etc.)? How do they reach other destinations? Do those you represent have unique needs?*

Modes

Of the approximate 14,000 undergraduate students, approximately 50-55% of students live on campus. The rest (approximately 6,500 undergraduate students) commute to campus.

Modes: There is no hard data on how students commute to school.

Most commuter students drive to school.

There is a LIRR station right on the perimeter of campus so students also use the train.

Access to Transportation on Long Island

Others take the bus, or walk or bike.

Public transportation – Suffolk Transit – comes onto campus. Suffolk Transit also allow students living on campus to get off campus .

Other bus service is the university's own bus transit service.

Taxis are probably also used.

Unique Needs

Many students live at home with their parents,. These students, then, cannot choose where they are living in relation to commuting to school. They do, however, have to figure out how to get to and from campus.

Student needs are not "9 to 5." Student needs may be outside regular hours and can be different day-to-day. This makes carpooling difficult.

Many students are commuting from west to east – the reverse peak direction – services are provided, but not as often.

Ms. Kelly reports she believes there has been conversation between the university and transit operators about services; however, she has not been involved and did not know details.

4. What transportation services are currently serving this population? How well are they functioning?

See #3, as well.

Services available really depend on where the student lives. If they live on the east end of Long Island, it can be difficult to get to the campus using public transportation.

Schedules can create difficulties. She hears concerns about the frequency of train operations, such as the LIRR operating only every 2 hours on some lines. Missing a train then becomes a major problem.

5. What challenges does the current transportation system create? What and where are the gaps in service?

Also see #4, above.

It can be difficult for many students to access the campus by bus.

There are some neighborhoods where access is more difficult than others (no information on specific neighborhoods, rather just a general characterization).

It can be challenging to travel between the two Long Island forks on public transportation.

6. How do your constituents access information about the transit system? What are the challenges? What is missing? What is working?

Information Access

- Web links
- On campus – in lounge and possibly other areas.
- Transportation and Parking Services, another division at the university, provides information and operates the bus services

Missing Information Access

Information on transit delays would be useful for students. Sometimes these are on the LIRR website, but it would help students if they could find this information “on the go” such as through Text Messaging.

Working Well

LIRR works well since it is right on campus and available, but there are always opportunities for improvement.

Buses do actually run to the university.

7. What role does the private sector play in meeting mobility needs? What role could it play?

On-campus students who rely on public transportation and are trying to get local jobs and summer internships may have to choose jobs based on access to public transportation.

It is not clear how that could be reversed, so that the private sector helps students to get to the jobs without being hindered by public transportation issues.

8. For your constituents, what are the main motivating factors in deciding where to live? What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations?

Many students are living at home with their parents. As such, they are not choosing where they live and have to make harder choices about their courses if they rely on public transportation.

As a result, when new students come to the university, they are reminded of their responsibility to ensure they can get to their classes – to be aware of public transportation schedules when they are choosing classes.

9. How can existing services be used to provide increased service to underserved areas?

Adding additional buses and additional trains to the current schedules.

Adding new routes, trains, frequency and stops.

10. What new, non-fixed route services are currently needed to adequately serve those you represent? What new, non-fixed route services will be needed in the future?

Carpooling services could be used. The university has a “forum” (online) for students to find each other and “NuRide” came to the school to discuss and promote ridesharing. Students attended their workshops.

Students with disabilities are assisted through the Disability Support Services department.

11. What role can technology play in improving mobility?

Text messaging updates about service and delays would be really convenient for students.

Internet is already available.

12. In summary, what level of service, availability, and choices would constitute adequate access to transportation?

What is important to realize is that students have special needs based on:

- Location of the student’s home (where they live)

Access to Transportation on Long Island

- The fact that Stony Brook serves the entire region from New York City to the east end of Long Island (on a commuting basis)
- Student schedules are often outside of the 9AM to 5PM window

Dominican Sisters of Nassau County

The Dominican Sisters (DS) is a non-profit healthcare agency primarily providing skilled in-home nursing care. The other programs provided by DS, such as transportation, evolved from reports from their nurses about needs in the community they are serving. Ms. Barbara Kujawski is the coordinator of volunteers for their transportation services in which volunteers use their private vehicles to transport DS patients to medical appointments.

The persons served by DS include elderly and the chronically ill, as well as persons with short term injuries, such as from an accident. Those with short term health care needs tend to be younger people (under 60). In general, DS clients requiring transportation services tend to be lower income people.

Response to detailed answers follow, below.

1. What does "adequate access to transportation" mean to your organization's constituents?

Services that allow non-driving people to get to the grocery store, drug store, and medical appointments

Mostly private cars being available because DS clients need help getting into a vehicle, to the appointment and back into the car and home.

Town shuttle services available through senior coalitions. Adequate access would mean solving some of the major problems with these shuttle services (see #4 & #5, below).

2. How does your organization facilitate access to transportation, or provide transportation itself?

DS has a volunteer organization in which individuals use their private vehicles to transport DS clients to and from medical appointments.

DS also works closely with the shuttle services provided by each of the 5 east end towns (Southold, Riverhead, East Hampton, Southampton, and eastern Brookhaven). The shuttle services will refer people to DS if the town cannot provide the service needed.

DS also refers people to a van in Southampton that operates via a private grant to transport persons to Stony Brook University and the VA Hospital. The operator is Southampton Human Resources. They only cover a portion of Southampton, however.

3. How are your organization's constituents commuting to work (i.e. bus, carpool, train, walk, etc.)? How do they reach other destinations? Do those you represent have unique needs?

Modes

Most DS clients do not work because they are receiving in-home skilled nursing. That generally means they are very sick and unable to work.

If they are able to work, they generally are able to drive themselves.

Unique Needs

DS clients who cannot drive need transportation to medical appointments.

Typically DS provides transport services where other services, such as town shuttles, cannot provide the service. This happens when transportation is necessary across town lines, or where reservations must be made in advance.

Most DS patients are trying to get to medical appointments at SUNY Stony Brook or the VA. Stony Brook, in particular, is the major destination for all medical specialist appointments. It is also the only place where Medicaid is accepted, Ms. Kujawski reports, though Medicaid often denies transportation costs to get there.

4. *What transportation services are currently serving this population? How well are they functioning? (grouped with #5, below)*

5. *What challenges does the current transportation system create? What and where are the gaps in service?*

- Suffolk County SCAT has many problems and that is where DS fills in. However, DS cannot provide service to wheelchair-bound patients and must rely on SCAT for this. Problems with the SCAT service include:
 - Operates “first-come, first-served” without giving priority to those with medical needs. This may result in the service being unavailable to take someone to dialysis, for example, because someone else is being taken to the mall to go shopping.
 - Have to reserve service 2 weeks in advance, which is difficult.
 - Service area is too small, only serving persons living within $\frac{3}{4}$ mile of a bus route. Many clients are further away and thus cannot use this service.
- Town shuttle services - Ms. Kujawski says these service are excellent, however, there are gaps as follows:
 - Only provide services if over 60 years old. Some of DS patients are younger.
 - Only provide service within town boundaries. If need to access Stony Brook or outside the town, then cannot use the town service.
 - Southampton and East Hampton have “great service” to get to appointments and shopping.
 - Southold and Brookhaven services are more limited. Seems to be due to not enough funding and drivers.
 - As a result, most DS volunteers are located in Southold.
 - Brookhaven is the largest town in population and area. They have the “Silver Jitney” for medical transportation, but it requires 2 weeks notice.
 - Many residents of east Brookhaven have doctors further east in Riverhead, because this is actually closer. However, because it is a different town, the Silver Jitney does not provide that service.
- VA Hospital demonstration project
 - DS, along with the Peconic Community Council, operated a demonstration project to transport persons to and from the VA hospital. This worked extremely well, according to Ms. Kujawski, because it would go anywhere and could be reserved with even just one-day notice. When the grant ran out, the service stopped.

6. *How do your constituents access information about the transit system? What are the challenges? What is missing? What is working?*

Information Access

Seniors are typically referred by senior agencies in each town and word of mouth. Seniors seem to have the least problem finding DS.

Younger persons seem to have the most problem finding information about DS. They may contact Town Hall and, depending on the person answering the phone, they may or may not know to refer people to DS.

Hospitals refer to DS.

Web access is used by some – typically by younger adults researching DS for their parents.

Younger clients of DS are often also people of lesser means and may or may not be accessing the internet.

Missing Information Access

Some Town Halls do not know to refer people to DS. Depends on who answers the phone.

Working Well

Senior agency and hospital referrals work well. Some patients are referred by physical therapists.

7. *What role does the private sector play in meeting mobility needs? What role could it play?*

Helps fund DS programs.

Stores could provide their own transportation services to help people get to and from for shopping purposes.

8. *For your constituents, what are the main motivating factors in deciding where to live? What is the appropriate balance between government obligation to provide transportation services and personal responsibility to choose accessible locations?*

Many seniors have moved into senior housing, especially in Riverhead.

Some moved due to promise of “adequate transportation” but have found their idea of adequate and the services provided are a mismatch.

For example, someone moving from the city and expecting half-hourly service is very disappointed when there are only one or two shuttles per day.

Service is typically less extensive and more expensive than people expect; taxis can be unreliable.

9. *How can existing services be used to provide increased service to underserved areas?*

SCAT can definitely improve by covering all of Suffolk County, and prioritizing based on medical needs.

Town shuttles could cross town boundaries.

10. *What new, non-fixed route services are currently needed to adequately serve those you represent? What new, non-fixed route services will be needed in the future?*

About two years ago, DS participated in a grant-based pilot program with the VA Hospital in Northport. The grant was through the Peconic Community Council. The VA would provide vans and drivers to take people to appointments “to the west” to Stony Brook and the VA and Technology Park. The service worked well

because the vans would go anywhere (crossing town boundaries), and riders were not required to schedule trips far in advance – they could call the day before.

Ms. Kujawski was the one who scheduled the service for the pilot program.

Service stopped when the grant ended.

11. What role can technology play in improving mobility?

Internet: DS has web site, and there are links to it on many other sites. Children of elderly parents often find DS on the internet.

Mostly lower income people use the transportation services and may also have trouble, then, with internet access if they are home and injured. (Those with higher incomes do not typically need DS transportation services).

12. In summary, what level of service, availability, and choices would constitute adequate access to transportation?

Key issues:

- SCAT service could be improved
- Re-start the VA van pilot project

Additional Information: Peconic Community Council

Ms. Kujawski stated that this organization, the Peconic Community Council, performed its own study of east end transportation services. The study was “very involved” and included data, statistics, detail on the VA van pilot project, etc.

4.8 Recommendations from Earlier Studies

As part of the data collection effort, a thorough review of relevant earlier studies was undertaken. This review focused, in particular, on findings that related to the definition of “adequate access to transportation”. For each of the following studies, the most relevant recommendations are summarized.

4.8.1 Long Island Bus Study ⁽⁷⁾

Relevant key findings from this study include the following:

- Add service to previously unserved areas
- Expand services in Nassau County and complete basic service levels in Suffolk County through expanded hours, increased frequency, connections between services and integrated fare structures
- Pursue dedicated funding at state and local levels
- Work toward inter-county coordination

4.8.2 Long Island Non-motorized Transportation Study ⁽⁵⁾

The following are relevant key findings from this NYMTC-sponsored study:

- Consider and include the needs of cyclists, pedestrians, and persons with disabilities in transportation plans, programs, services and studies.

- 113 new bicycle corridors were recommended, with 10 selected for further development.

4.8.3 Nassau County Transportation Policy Recommendations ⁽²¹⁾

Relevant key findings from this study by the Nassau County Office of Economic Development include the following:

- Prepare for a shift from dependence on personal vehicles to a walk/bike/transit culture
- Build on the LIRR network
- Encourage transit use, especially for work trips
- Create more bike/pedestrian options to transit stops and stations
- Establish north-south links, emphasize villages
- Consider transportation and housing in relation to development plans

It should be noted that these recommendations were not formally adopted by the Nassau County Office of Economic Development.

4.8.4 Nassau Hub Major Investment Study ⁽²²⁾

The 10-square mile study area for this project includes the communities of Mineola, Westbury, Garden City, Hempstead, Carle Place, Uniondale and East Garden City. The final project report stated a vision for the area called "New Suburbia" to target specific areas for economic development to stimulate the economy while preserving suburban character. This vision is reflected in four key goals, as follows:

- Transportation: Provide safe, high-quality, multi-modal transportation in the corridor
- Land Use Development: Develop transit-supportive land use plans and policies for the corridor
- Design: Integrate proposed transit stations into neighborhoods and preserve suburban quality of life
- Economic Development: Encourage new development to expand the county's economic base

The study resulted in a short list of alternatives including bus rapid transit, light rail transit and automated guideway transit.

4.8.5 Joint Executive/Legislative Task Force on Transportation Issues in Suffolk County ⁽⁸⁾

The task force investigated needs and recommended solutions while following these two goals:

- Offer public transportation services within the financial limitations of county government
- Employ technology and traffic calming methods so trips for work, shopping, and recreation cause minimal disruption to the community and environment

Transportation solutions that were recommended by the task force included the following:

- SCT service improvements
- Similar improvements to paratransit service
- LIRR service expansion

Access to Transportation on Long Island

- Public outreach, marketing on transit use
- Pursue local legislation so that county can install bus shelters on local roads
- Develop five-year plan with information from Long Island Bus Study
- Pursue increased state and local funding
- Create a committee to coordinate and deliver medical and employment transportation for all

4.8.6 Long Island Transportation Plan 2000 ⁽³⁾

Through three specific subcommittees on Special Travel Needs, Public Committee on Transportation Mobility and the Transit, Ridesharing and Commute Options Subcommittee, a preliminary preferred alternative was identified, known as the Long Island Rapid Commute alternative.

4.8.7 Area-Wide Job Access and Reverse Commute (JARC) Plan ⁽⁶⁾

This plan focused on the ability to commute to and from employment locations throughout the NYMTC region and therefore was primarily concerned with job access issues such as the span of service, the cost of commuting, trip “chaining” and intra-county trips. Potential services enhancements, such as transit, service delivery and transportation demand management (TDM) strategies, were ranked for five priority employment markets on Long Island: Central Nassau, Northern Nassau, the Route 110 corridor, and the East End of Suffolk County. Some of the potential service enhancements that were highly ranked included extended spans of service, increased frequencies of service, better marketing and advertising and the introduction of both transportation brokerage services as well as carpool matching services throughout Long Island.

4.8.8 Sustainable East End Development Strategies ⁽⁴⁾

This study, which began in 2001, examined the overlapping land use and transportation issues facing the East End of Long Island and made the following relevant recommendations:

- Increase transit service and connectivity without additional infrastructure
- Establish transit hubs with amenities
- Increase rail and bus service frequency
- Extend routes in Suffolk County
- Develop flexible inter-hamlet shuttles

While these studies offer a glimpse of changes to public transportation that participants would like to have implemented, the recommendations are not binding on the providers. While many of the recommendations are desirable, they may not be feasible, financially or otherwise. Providers must evaluate each set of recommendations and weigh them against current resources and need in order to determine which to implement.

5.0 Potential Strategies for Improving Access to Transportation

As discussed earlier in this report, Nassau and Suffolk Counties are served by an extensive fixed route rail and bus network. However, rail and bus services cannot meet the needs of all travelers on Long Island. Some individuals live in areas that are not densely populated enough to support fixed route services, while others lack the means to travel to a rail station or bus stop, have income limitations, or need to travel when fixed route services are not in operation. Such individuals who also are unable or unwilling to drive may face very limited access to transportation.

Other services and programs that could be developed, maintained, or expanded to address such mobility needs include:

- Public and private paratransit and demand response services
- Non-motorized travel options
- Ridesharing
- Other Transportation Demand Management (TDM) measures
- Employer transportation programs
- Programs featuring use of taxi services
- Volunteer driver programs

In addition, there are other actions that could be taken to improve access to transportation services. These include:

- Increasing coordination among human service and other demand response transportation services
- Heightening awareness of service options and how to use them among potential users
- Use of technology to enhance existing transportation services
- Encouraging land use policies and decisions that are more supportive of transit and non-motorized options

Suggested strategies for improving transportation access are described below.

5.1 *Non-Motorized Transportation Options*

Access to transportation could be enhanced if more opportunities for walking, biking, or using a mobility device from origin to destination, or to a bus stop or rail station, were available. New York State Department of Transportation's (NYSDOT) bicycle and pedestrian policy, and the Nassau/Suffolk Transportation Coordinating Committee's (N/STCC) non-motorized vision statement recognize the contributions that non-motorized transportation can make to the safety, environmental impact, equity and efficiency of the transportation network on Long Island, among other benefits. The goals of both agencies for non-motorized transportation are reflected in NYMTC's 2005 – 2030 Regional Transportation Plan, and include additions to the network of safe bikeways and walkways and the integration of bike and pedestrian facilities with other elements of the transportation network: roadways, transit, and park and ride lots.

5.1.2 Strategies for Expanding Use of Non-Motorized Options

Implement projects proposed in the Long Island Non-Motorized Transportation Study (LINMTS). The LINMTS, conducted for NYMTC and NYSDOT, identified a number of bicycle network improvements in Nassau and Suffolk Counties and prioritized potential improvements based on measures of population density, connections to major destinations, safety, and connections to the current bicycle network. The proposed improvement areas include the following:

- Hempstead Harbor Park to Hempstead Lake Park
- Eisenhower Park to Jones Beach
- Eisenhower Park to Baldwin
- Bethpage State Park to Oak Brush Plains State Preserve
- Sunrise Trail in the Village of Freeport
- Route 110 from Huntington to Farmingdale
- Southern Island Bikeway from Amityville to Great River
- Deer Park LIRR Station to Hecksher State Park
- Route 25A from Stony Brook to Port Jefferson Station

Several pilot projects were also identified in the LINMTS. Transit-related projects include:

- Bike-on-Bus project on Long Island Bus Route N-19, to include installation of bike racks and educational/promotional activities
- Bike on Bus report
- Transit Access Program
- Development of recommendations for bicycle and pedestrian access to Bethpage Station from Stewart Avenue, based on an audit of walk-ability and bike-ability in the area near the station.

Other programmatic projects included a model Walking to School program, a Driver Education/Share the Road program to provide information for drivers on sharing the road with non-motorized modes, and a Safety program.

Provide guidance for communities to help them assess local walkways, bikeways, bus stops, and transit facilities, and identify areas needing improvement. A number of checklists have been developed to assist parents, schools, and community organizations with the identification of infrastructure and safety barriers to walking and biking. One potential resource for Long Island communities to use in assessing potential for bikeway or pedestrian improvements are resources developed as part of the Safe Routes to School Program. Checklists which ask the questions "How walkable or bikeable is your community?" are found through the National Highway Traffic Safety Administration or other Safe Routes to School resources and are also found in Appendix G. Also included in Appendix G are walkability and pedestrian access

assessment tools prepared by AARP (an excerpt of AARP's document is included in the Appendix; the full document is available by following the link provided below) and Easter Seals Project ACTION.^{vii}

Easter Seals Project ACTION has also developed several items that can be used to assess the accessibility and safety of bus stops and transit facilities, such as rail stations.^{viii}

Information about how to make improvements or request assistance would also be useful.

5.2 Transportation Demand Management (TDM) Measures

TDM measures aim to control demand for travel by individual vehicles and reduce congestion. These measures work in combination with a system of transportation service to provide people with travel options. There are various TDM organizations, including LITM, that coordinate with transportation providers and agencies to implement programs that apply TDM measures, such as transit, vanpools and telecommuting.

5.2.1 TDM Strategies

Support and market LITM, the NuRide ridematching service, and travel information and trip planning programs such as Trips123 and NYSDOT's Travel Information Gateway to encourage residents to find alternatives to single occupancy vehicle driving.

Introduce car sharing to Long Island. Car sharing enables residents to use personal cars by the hour for a small annual fee and payment by the hour. The program would work best in higher density areas that have public transportation access. Currently, Zipcar is a company that operates a car sharing network in the New York City area with cars as far east as Flushing, New York. Zipcars are normally placed in higher density areas near public transportation. The cars are picked up from a parking space leased by Zipcar and returned to the same spot once the trip is complete. The hourly fee charged to use a Zipcar includes fuel and insurance costs, making it a cost effective way to use a personal vehicle for errands.

5.3 Employer Services

Employment centers generate a great deal of peak hour traffic, especially in areas not well served by public transportation. In addition, employers can play a key role in the reduction of auto travel to meet federal air quality requirements. Long Island is considered a major non-attainment area under the Clean Air Act, which has prompted the NYS Department of Transportation to promote TDM measures, including commuter to work programs that aim to reduce vehicle miles traveled (VMT). Additionally, NYMTC is required to demonstrate compliance with the NYS Implementation Plan for Air Quality, which includes activities on Long Island. Increased awareness of these requirements and air quality issues by the business community has also helped bolster TDM commuter activities as a way to reduce VMT and hence emissions.

^{vii} Checklists at: http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2004/pages/appendix-c_bikeability.htm
http://assets.aarp.org/rgcenter/il/d18311_communities.pdf

^{viii} Toolkit for the Assessment of Bus Stop Accessibility and Safety is available at:
http://projectaction.easterseals.com/site/DocServer/06BSTK_Complete_Toolkit.pdf?docID=21443 ; Transit Facility Accessibility Assessment System is available at: <http://www.keystationsurvey.org/>

There are several types of programs employers can use to assist their employees in getting to work without a car when public transportation is limited or unavailable. The programs reduce congestion, save employees money on gas, and reduce the amount of parking an employer needs to provide.

Long Island Transportation Management (LITM) is a regional organization that already exists to assist employers in developing commuter programs for their employees and inform the employers of the benefits of participation, such as improved employee productivity. LITM promotes employer-based transportation services for employees. These include ridesharing, transit passes, guaranteed ride home programs, etc. through sharing of information and establishing an environment supportive of these alternatives to single occupancy vehicle commuters. LITM also administers the Long Island Region Improving Commuting (LIRIC) grant program, which provides financial assistance to employers wishing to implement commuter alternative programs aimed at reducing traffic congestion. Projects eligible for the grants include carpool incentive programs, vanpools, guaranteed ride programs, parking management, employer-provided transit fare subsidy programs, telecommute programs, bike to work programs, and programs that bridge gaps in existing transit services between worksites and park-and-ride lots.

5.3.1 Employer Service Strategies

Greater communication with and support for LITM and other organizations that promote TDM strategies. LITM and other organizations already administer a number of good programs that promote non-personal vehicle transportation that need continued support. Local and county government decision-makers should meet with representatives of those organizations to consider their needs and to find out what form of policy and financial support would be the most helpful to them.

Consider establishing a clearinghouse/brokerage to better disseminate information about transportation options to Long Island residents.

Institute a pooled vehicle program. In this type of program, a vehicle is leased to one or several employers in an area and kept at a transit center. Employees from the company ride public transportation to the center and ride together in the pooled car. The car may have a driver that makes multiple shuttle-like trips, or reside during at the office building until the end of the day.

Make participation in TDM measures and other programs as simple for employers to implement as possible. With the assistance of TDM organizations, explore opportunities for streamlining administrative processes associated with employer options (such as taking advantage of federal tax incentives for the provision of transit passes) to increase their involvement.

Encourage employers to survey and gather commuting information from their employees, especially regarding public transportation. The more data NYMTC and the public transportation providers have regarding journey-to-work data, the more able they are to respond to the greatest needs and improve service for commuters. Employers have wider, easier and cheaper access to their employees for surveys than the public transportation providers, who primarily only have contact with current riders.

Replicate previous successful efforts to operate workplace shuttles and divide costs between the transit provider and the employer. Highlight the benefits of successful shuttles for other employers located in areas that could be served effectively with transit service.

5.4 Inclusion of Taxi Services in the Transportation Network

Taxi companies usually have a relatively large fleet and can be a great supplement to demand response service offered by public transportation providers and non-profit organizations. They are able to offer door-to-door service to individuals who are unable to use fixed route public transportation in a way that is more flexible than typical demand response service. These trips may be for shopping, medical appointments or social activities for seniors, persons with disabilities, low-income individuals and the general public.

5.4.1 Strategies for Involving Taxi Operators

Develop subsidized taxi services. A user-side subsidy taxi program can offer a flexible, cost-effective means of meeting a variety of trip needs, particularly in areas without the density to support fixed route service and where the provision of demand response service is prohibitively expensive. Factors that can reduce the cost-effectiveness of demand response service include times or areas with low levels of demand or numbers of trips that are long and not easily grouped with other trips.

Through a subsidized taxi program, sponsor agencies (or municipalities) distribute or sell tickets, coupons, vouchers, or some form of electronic fare medium to eligible riders, at a discount. Riders use the tickets or vouchers to purchase trips from participating taxi operators in accordance with the limits established for use of the tickets/vouchers (perhaps adding a cash payment to the value of the tickets/vouchers, depending on program regulations). Taxi operators are then reimbursed for the full cost of each trip.

Sponsor agencies, either individually or collectively, establish eligibility and service policies and the amount and level of service to be provided. Some agencies may choose to supplement existing transportation services that are provided to clients with subsidized taxi service. Others may use the taxi program as a replacement for transportation service they are currently providing in some other way.

Contract with taxi companies for provision of specific services, such as senior shopping trips or medical appointments. Assist taxi operators with the acquisition of accessible vehicles (i.e., lift-equipped minivans. Public transportation providers in other areas have used federal and state grant funds to purchase accessible vehicles for use by taxi operators, with the operators supplying the required local matching funds.

Contract with taxi companies to serve as guaranteed rides home as a complement to employer-based and TDM programs.

5.5 Volunteer Driver Networks

Relying upon volunteers to assist with the delivery of service can help to stretch transportation resources and offset the typically high cost of serving areas where population densities are low and travel distances are long. Advantages of volunteer driver programs or use of volunteer staff in a transportation program include the following:

- Operating costs can be kept low when volunteers are used as drivers, call-takers, schedulers, and/or dispatchers by a transportation provider.
- Programs that reimburse family members and friends for providing rides take advantage of existing, low-cost transportation resources.
- Volunteers can provide a flexible source of transportation that can be called upon as needed for long-distance, out-of-area trips.

The use of volunteers in a transportation program can help to keep costs low and the level of service flexible, and typically results in benefits for the volunteers as well as the riders and the service provider. However, volunteer programs are not without cost, and may present challenges to the administering organization. Factors to be considered include:

- The time and effort needed to recruit, screen, train, and reward volunteers
- Insurance and risk management issues
- Acceptance of volunteer drivers by riders

5.5.1 Volunteer Driver Network Strategies

Establish a demonstration volunteer network similar to Maine's Independent Transportation Network (ITN). ITN was first established in Portland, Maine about ten years ago as a means of providing seniors with rides in exchange for trading in the cars they rarely or never use. The value of the donated car is credited to the senior's debit account, which is drawn on each time a ride is requested (averaging \$8 per ride). The account can be contributed to by family member or friends through cash donations, volunteering their time or donating their own cars. Seniors who are still able to drive may volunteer and receive credit for future rides when they are no longer able to drive themselves, a sort of "transportation social security." The rides may be used for medical appointments, shopping trips and social visits or events. Maine has enacted legislation that enables ITN to sell its surplus vehicles and reinforces an earlier law prohibiting insurance companies from raising premiums for volunteer drivers.

ITN has been very successful in the Portland area, currently serving about 1,000 customers and providing about 15,000 trips per year, and is spreading to other parts of the country. In 2005, a nationwide organization, ITNAmerica, was created to replicate the program in other areas, and efforts are underway to establish programs in South Carolina, New Jersey, Florida, and California. Legislation in Connecticut makes seed money available for a program similar to ITN. At the national level, Maine Senator Susan Collins has introduced legislation that would establish a substantial grant program to match local funds for the expansion of the program and to provide tax incentives for seniors who participate.

Consider the "Community Inclusion Driver" approach for rural areas. ITN is an effective volunteer driver program model for urban or suburban areas. The Community Inclusion Driver (CID) strategy was developed for Easter Seals Project ACTION as a way to make use of volunteer drivers in a rural setting. While the CID strategy focuses on increasing mobility for persons with disabilities in rural areas, the approach could also be used for seniors and members of the general public.

The CID strategy involves a partnership between a transportation provider, a customer, and individuals who are willing to act as volunteer drivers for the customer. The transportation provider supplies minimal administrative resources and transportation expertise, the customer participates in planning his/her own transportation, and volunteer drivers contribute their time in exchange for limited reimbursement of expenses. The outcome of the partnership is improved mobility for the customer that is more feasible and costs less than service that the transportation provider could operate itself.

The transportation provider is responsible for establishing program and eligibility guidelines, developing informational materials and promoting the program, screening drivers and vehicles, training customers and drivers, program recordkeeping, and payment of mileage reimbursement to volunteers. The customer is responsible for identifying suitable volunteer drivers (although the transportation provider may provide assistance, or recruit drivers itself). The volunteer driver is responsible for providing proof of a valid license

and a properly registered and insured vehicle, meeting any other requirements established by the transportation provider, and completing forms to document basic information and the trips that are provided.

A CID handbook published by Project ACTION provides more detail about how the strategy can be implemented and contains sample agreements and forms and marketing materials that can be used by organizations interested in developing a CID program.

Use a volunteer transportation planning process, such as the Turnkey Kit from the Beverly Foundation, to design a volunteer program unique to Long Island. The kit offers technical assistance on how to launch a volunteer driver program, including planning, implementation and evaluation materials. It also includes a model pilot program geared toward providing volunteer rides for seniors. (<http://www.beverlyfoundation.org/turnkeykit/index.html>)

5.6 Coordination Among Transportation Services

A number of public and private organizations in Nassau and Suffolk Counties provide demand response transportation services for older adults, persons with disabilities, individuals with low incomes, and human service agency clients. As is often the case where multiple providers operate similar services for similar types of riders, services are fragmented, so that individuals may find it difficult to identify the services for which they may be eligible, and may not have access to transportation service for all the trips they need to make. There is also likely to be duplication in services and/or administrative functions among providers.

Planning, designing, funding, and delivering specialized transportation services in a coordinated manner can help to address such problems. Coordination efforts can involve any combination of the following types of organizations: public providers of fixed route transit and paratransit service, non-profit transportation providers, private transportation companies, public or non-profit human service agencies, community-or faith-based organizations, local or regional planning agencies, and state departments of transportation.

Together, organizations with an interest in human service transportation can undertake a variety of actions to improve coordination. At one end of the range of coordination activities are steps to improve communication and cooperation among interested parties while leaving separate transportation programs intact. At the other end of the range are actions that significantly change the way in which services are delivered, by consolidating transportation programs previously managed or administered by separate organizations.

Three significant actions in the past several years demonstrate the renewed emphasis on coordination of human service transportation at the federal level.

5.6.1 United We Ride

In late 2003, the federal Departments of Transportation, Health and Human Services, Education, and Labor introduced a new human service transportation coordination initiative entitled *United We Ride*.

United We Ride includes five components designed to make coordination of human service transportation easier and more rewarding for states and local communities to pursue. Among them are a coordination planning tool for states and communities (the Framework for Action), coordination grants for states, and a variety of technical assistance activities and resources.

5.6.2 Executive Order on Human Service Transportation Coordination

In February 2004, President Bush issued Executive Order 13330 on Human Service Transportation Coordination, reasserting the federal government's commitment to improved mobility for transportation disadvantaged citizens and more efficient use of transportation resources. The Executive Order establishes a new Interagency Transportation Coordinating Council on Access and Mobility, composed of representatives of 11 federal departments.

The Council's goals include eliminating duplication and overlap among federal transportation programs and services, facilitating use of the most cost-effective services available within existing resources, and develop policies and procedures to enhance transportation services.

5.6.3 Reauthorization of Federal Transportation Programs

In August 2005, authorization for the federal transportation programs was renewed in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Among the many changes to federal programs included in SAFETEA-LU is the requirement for a "locally developed, coordinated public transit-human services transportation plan". Projects supported by Elderly Individual and Individuals with Disabilities funds (Section 5310), Job Access and Reverse Commute (Section 5316) and New Freedom (Section 5317) funds beginning in federal FY07 will be required to be included in such a plan.

In March 2005, FTA issued draft guidance regarding the implementation (in FY 2007) of these three programs and development of the local coordinated plans. After soliciting and compiling public comments on the draft guidance, FTA published final guidance for the FY 2007 coordinated plans in the *Federal Register* in September 2006. In that notice, draft circulars for the Section 5310, 5316, and 5317 programs, which contain identical coordinated planning sections, were also discussed.

In the guidance for FY 2007, FTA requires that the coordinated plan contain information about the following:

- Existing transportation providers and services
- The transportation needs of the target populations (older adults, individuals with disabilities, and individuals with limited incomes)
- Strategies for addressing needs
- Prioritized steps for implementing the recommended strategies

Approaches to coordinating the planning and delivery of demand response and human service transportation services are outlined below.

5.6.4 Strategies for Improving Coordination Among Transportation Services

Conduct an inclusive planning process in response to the federal United We Ride initiative and the requirements for coordinated public transit - human service transportation planning contained in SAFETEA-LU. Hold one or more planning sessions in Nassau and Suffolk Counties to work through the Framework for Action for Communities and begin to develop the local coordinated human service transportation plan. Include a broad range of agencies with a stake in demand response and human service transportation such as:

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- Nassau and Suffolk County Departments of Social Services
- Nassau and Suffolk County Planning Departments
- NYMTC
- Nassau County Office for the Physically Challenged
- Nassau County Office of Senior Citizen Affairs
- Suffolk County Office of Handicapped Services
- Suffolk County Office for the Aging
- Long Island Center for Independent Living
- Suffolk Independent Living Organization
- MTA Long Island Bus
- Suffolk County Transit
- Long Beach Transit
- Huntington Area Regional Transit
- Cities, towns and villages that provide transportation services: Babylon, Brookhaven, East Hampton, Glen Cove, Hempstead, Huntington, North Hempstead, Oyster Bay, Riverhead, Shelter Island, Smithtown, Southampton, and Southold
- Other demand response providers
- Private and public school transportation providers
- NYMTC's Job Access and Reverse Commute staff person
- Members of the JARC Work Group
- NYSDOT
- Recipients of Section 5310 vehicles from NYS Department of Transportation
- Riders

Other organizations that could be considered for involvement in the planning process include businesses, elected officials, faith-based organizations, and educational institutions.

The first goal of the planning sessions should be to use the Framework for Action to assess the current level of coordination among transportation services on Long Island and identify steps to increase coordination in areas where improvement is needed. The outcome of the Framework for Action sessions should then form the foundation for the local coordinated public transit-human services transportation plan.

Use information collected as part of the Access to Transportation on Long Island project in the local coordination plan required by SAFETEA-LU. Elements that are required as part of the plan include the following:

- Existing fixed route and demand response services
- Location and size of potential target markets

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- Fixed route and demand response service gaps, unmet transportation needs of older adults, persons with disabilities, and individuals with low incomes
- Strategies to address service gaps

While the coordination strategies that are best suited to Nassau and Suffolk Counties should be identified by the participants in the coordinated public transit-human service transportation planning process, options include the following:

- Reciprocal customer information and referral
- Use or subsidy of public transportation services by human service agencies for client travel
- Purchase of service by human service agencies from transportation providers for clients
- Cooperative grant applications, staff and driver training, maintenance and vehicle storage among transportation providers
- Coordinated procurement of items such as vehicles, insurance, maintenance, fuel, training, or hardware/software among transportation providers
- Vehicle sharing
- Coordinated procurement of contract transportation service providers
- Consolidation of programs, including the establishment of a paratransit brokerage or Mobility Manager

Two strategies that appear to have the potential to reduce duplication of services and/or expand mobility options are described below.

Develop or encourage sub-regional demand response transportation programs. The review of existing demand response services on Long Island resulted in several findings that indicate the potential for increased service efficiencies and improved mobility through integration of existing local demand response services into larger, sub-regional operations that would cover more than one community. For example, multiple service providers – public bodies and human service agencies – currently transport similar rider groups in most communities. Similarly, fixed route bus operators provide paratransit service to ADA-eligible individuals in the same communities in which municipal demand response programs serve seniors and persons with disabilities. Some municipal and human service agency services are likely have unused capacity during at least some part of the day. In addition, one of the service gaps reported by users and stakeholders is travel between communities. Most municipal demand response programs operate within the boundaries of a single community. Transfers between services, if possible, are usually up to the customer to arrange and are time-consuming.

Integration of the local demand response operations in Nassau and Suffolk Counties into larger sub-regional systems would increase the effectiveness of demand response service by combining vehicle fleets and centralizing scheduling, and also address the need for inter-community travel. A sub-regional demand response service could also be used to provide local collector and distributor services to deliver riders to and from fixed route bus stops and rail stations, thereby encouraging greater use of those systems.

Implementation of sub-regional demand response systems, and the inclusion of some or all ADA trips, is likely to be challenging. Creation of sub-regional systems could be a long-term goal. In the more immediate future, a phased approach may be more appropriate.

Alternative actions would provide many of the advantages of sub-regional integration, as well as the opportunity for providers to develop cooperative relationships, without the need for structural changes. These strategies are: 1) the adoption of uniform, or more consistent, operating and service policies among demand response providers and 2) the provision of local trips for ADA-eligible customers by municipal demand response providers as contractors to the fixed route bus operators.

Look for feasible opportunities to increase schedule coordination among providers. Although they are often difficult to achieve, schedule connections to facilitate transfers between bus and rail services and between feeder services and bus/rail stops and stations would enhance the convenience of the transportation system.

5.7 Increase Awareness of Existing Transportation Services

Increasing awareness of the transportation services that are currently provided on Long Island would increase mobility by informing individuals (and human service agency personnel) about the fixed route and demand response services that are available to them and making the services easier to understand and use. Increasing the visibility of public transportation services within local communities would also help to encourage funding support.

Providing service information to current and potential users is an area in which technology can be used to great benefit, as discussed in Section 5.8. Several alternative strategies are identified below.

5.7.1 Strategies for Increasing Awareness of Transportation Services

Enlist the assistance of LITM with county or local efforts to publicize or market fixed route and demand response services. LITM currently makes transportation information available to employers and employees as it works to encourage the use of alternatives to the single-occupant automobile for work trips, and to the general public through its website. Provide information about municipal demand response services and human service transportation programs as well as fixed route services to LITM so that it becomes a local clearinghouse for transportation information. Promote the services and resources of LITM to human service agencies and advocacy organizations whose staff members advise individuals about transportation options that may be open to them.

Involve non-profit human service agencies, advocacy groups, and other organizations in the distribution of information about transportation options. Organizations such as Concerned Citizens for Public Transportation in Suffolk County, Dominican Sisters of Nassau County, Stony Brook University, Adelphi University, and others make information about transportation services available to their constituents. Keeping such organizations supplied with updated information about services is one way to increase knowledge of transportation options among potential users.

Develop a Transportation Guide (for Long Island, or for each county) that describes services and how to use them. A widely distributed Transportation Guide, providing information not only about the availability of fixed route and demand response services, but also about service and operating policies and ways to access the services, would encourage use of the existing services by those with travel needs. For widespread dissemination, the guide could be published in local newspapers and posted on local and county websites. This approach has been used successfully in other areas. The Orange County (NY) Department of Planning, with funding and assistance from MetroPool, the ridesharing agency for the Hudson Valley, developed a transit guide to the many different public and private transit and paratransit services available in the county. The county's major newspaper published the guide as a special

supplement to a Sunday edition. It was also posted on various websites throughout the county. The MetroWest Growth Management Committee, located in western metropolitan Boston, created a regional map of transit services and published it in a widely read regional newspaper.

Design and implement a public awareness campaign. National market research has determined that the theme of “community benefit built on personal opportunity” is a meaningful way to promote public transportation, even to those who do not need or use it. Based on a research effort that included a national telephone survey and detailed discussions with small groups, only about half of the public are familiar with the transit services in their local areas; about one-quarter has no knowledge about them. Moreover, people tend to be more concerned about other, more critical issues than about public transportation. However, when public transportation is promoted in a way that emphasizes the mobility, freedom, and access to opportunities that it can provide for all members of a community, even non-supporters become more favorably disposed toward it.^{ix}

The American Public Transit Association (APTA) has developed an outreach campaign based on this theme, and has designated October 5, 2006 as “Communities in Motion” Day. The stated goals of the campaign are to:

- Build public support for public transportation by increasing awareness of how public transportation improves quality of life - providing opportunity, freedom, mobility and access for all citizens
- Increase appreciation for public transportation's contributions to communities
- Recognize elected officials who have been supportive of public transportation initiatives
- Reach out and involve local groups and individuals that have a vital interest in public transportation's local, state and federal legislative goals
- Communicate the importance of investment in public transportation^x

APTA's website contains an online toolkit for transit systems and other organizations to use as they plan and conduct Communities in Motion activities (which need not be restricted to October 5). The toolkit includes:

- Communication tools, providing facts and message points about the impact that public transportation has on communities, for use in speeches, press releases, and discussions with local elected officials
- Suggested activities
- Events that will be held in Washington, DC on October 5, which may be duplicated in local communities
- An official Communities in Motion logo, with instructions for duplicating and using the logo in a number of different applications

^{ix} Wirthlin Worldwide and FJCandN, *“Enhancing the Visibility and Image of Transit in the United States and Canada”*, Report 63, Transit Cooperative Research Program, Washington, D.C., 2000.

^x APTA website, <http://www.apta.com/services/commotion/index.asp>

The toolkit can be found at <http://www.apta.com/cim/>. While some of the information provided in the toolkit specifically applies to transit service, many of the activities, events and graphics could be used with equal success to increase awareness of paratransit services.

5.8.1 Enhance Transportation Services and Information through Technology

Intelligent Transportation Systems (ITS) components and other technology systems can contribute to more efficient and cost-effective operations and improved traveler information. Enhancing service delivery and increasing the availability and/or accuracy of information about service options will encourage travelers to make better use of existing transportation services.

Examples of technology systems that could improve access on Long Island include the following:

5.8.1 Scheduling and Dispatching Software

Operators of demand response or flexible service may benefit from automated or computer-assisted reservations/scheduling/dispatching systems that can streamline the trip reservations process, improve the efficiency of vehicle schedules, enhance the capability of dispatchers, and upgrade the tracking and reporting of customer and trip data. Automated or computer-assisted reservations and scheduling systems are also useful tools for coordinated transportation services. These systems can make the job of scheduling trips among various providers easier and more efficient, and can streamline the data collection and billing processes. This can make tracking trips and costs by client or funding source much easier, thus increasing the feasibility of coordinating transportation services.

5.8.2 Mobile Data Terminals (MDTs) or Mobile Data Computers (MDCs)

For larger demand response transportation systems, MDTs or MDCs provide a means for dispatchers and drivers to exchange information about schedules, trips, passengers, or vehicles electronically, which can improve the accuracy of the information as well as reduce the need for voice communications. The use of MDTs or MDCs also enhances data collection and reporting for coordinated services by increasing the accuracy of trip, vehicle, and passenger data that is recorded at the time of each trip, and the ease with which information can be compiled and analyzed.

5.8.3 Automatic Vehicle Location (AVL)

Automatic Vehicle Location (AVL) technology, which uses Global Positioning System (GPS) capabilities to identify the location of fixed route or demand response vehicles in real time, contributes to improved dispatching, and eliminates the need for voice communications between dispatchers and drivers to determine vehicle location. AVL can make it easier for dispatchers of demand response or coordinated services to assign trips to the most appropriate vehicle in real time, which is especially important in operations serving large geographic areas. Better use of resources can lead to improvements in efficiency and cost-effectiveness. The same benefits of AVL also apply to fixed route operations.

5.8.4 Real Time/Next Bus Information

AVL technology is also used to provide real-time transit information to individuals who are planning or contemplating a transit trip. The AVL system provides real-time location data, which is used by a real-time traveler information system to estimate the arrival time or amount of time until the next arrival of a transit vehicle. Travelers may access the real-time arrival information through one of a variety of means, including websites, electronic signs at stops or stations, interactive kiosks, wireless personal communications

devices, and landline or mobile phones. The provision of real-time transit service status information to customers has been shown to improve customer satisfaction and contribute to increased ridership.

5.8.5 Smart Cards and Other Electronic Fare Media

Several different types of electronic fare media are in use in transit and paratransit operations today. Smart cards are plastic cards that contain an embedded computer chip. Contact smart cards must be inserted into a card reader for information to be read from or written to the chip. Contactless smart cards need only be in the vicinity of a card reader; contact with the reader is made by means of an antenna that is also embedded in the card. Smart cards can support multiple operator applications. Contactless cards make fare payment a very quick process, and are very easy for the rider to use.

Magnetic stripe cards or tickets (such as the New York City region's MetroCard) are also used as fare media and passenger identification in transit operations. While magnetic stripe cards have a much lower unit cost than smart cards, card readers may be more expensive than contactless card readers and require frequent maintenance.

5.8.6 Wayfinding

Wayfinding refers to the provision of signage and other cues to guide drivers, pedestrians, and bicyclists to destinations. Wayfinding programs have been implemented on highways and other roads, in downtowns, business and educational campuses, and facilities such as airports and transportation terminals.

Wayfinding alternatives for individuals with visual impairments include audible signals, infrared "talking sign" transmitters, detectable warning surfaces, and intersection design techniques that provide directional cues.

5.8.7 Interactive Voice Response (IVR) and Interactive Web Response (IWR) Systems

Automated IVR and IWR systems allow demand response customers to place their own trip reservations over the phone or the Internet. IVR and IWR systems can also be used to perform tasks such as calling customers to confirm trip times or deliver information about the estimated time of arrival of their rides. Use of such systems can make the process of reserving a trip more convenient for some customers and reduce the number of phone calls that must be handled by reservations staff.

5.8.8 Transportation Information Clearinghouse

Information about service options in convenient, accessible formats for current and potential transportation users, transportation providers, and human service agency staff members will facilitate maximum use of existing services. Two on-line clearinghouses capture much information about transit services on Long Island.

Trips 123 is an online travel information and trip planning service administered by the Trips 123 Public/Private Sector Partnership made up of TRANSCOM, Inc., the Northeast Consultants (TransCore and Parsons Brinkerhoff), NavTech, and the New York State Department of Transportation. The service covers trips within the states of Connecticut, New York, and New Jersey and is made up of five primary service components:

- Real time traffic conditions
- Real time transit conditions
- Planned construction activities and special events

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- Related transit and transportation websites
- Online transit trip planning tool (Transit Advisor) that provides step-by-step instructions on how to get from one point to another

Access to Trips123 information by telephone is a planned enhancement to the system.

At present, only the services provided by MTA Long Island Railroad, MTA Long Island Bus, and Suffolk County Transit are included in Transit Advisor. Itineraries involving the services of other fixed route transit providers on Long Island cannot be constructed, although links to their websites are provided. Information about demand response services is not available through Trips 123, although information about the ADA paratransit services operated by MTA Long Island Bus and Suffolk County Transit may be obtained through the links to their websites. No information about municipal or private demand response services is currently available.

The **Travel Information Gateway (TIG)** is an online transportation service managed by NYSDOT on behalf of the New York State Transportation Federation, which also includes the NYS Thruway Authority and the NYS Bridge Authority. The TIG provides real-time status information about a number of travel modes, including transit and paratransit, as well as more general transit and paratransit information. For information about services in Nassau and Suffolk Counties and the rest of the downstate region, the TIG provides a link to Trips123.

5.8.9 Strategies for the Use of Technology

Continue to pursue development and adoption of transportation technology systems as appropriate. Implementation of some of these systems is currently being planned on the regional and provider levels, as is reflected in NYMTC's current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) documents.

Work with NYSDOT and the Trips123 partnership to add information about more transit and demand response services on Long Island to the TIG and Trips123. Monitor information to ensure that it is up to date. As information becomes more comprehensive, publicize the availability of those online information sources.

5.9 *Transportation-Efficient Land Use Decisions*

Characteristics of development and transportation rights-of-way and services both influence the efficiency of the transportation system on Long Island and the mobility it provides for people and goods. Development that is compact, concentrated around activity centers, pedestrian- and transit-friendly, and inclusive of mixed uses (including affordable housing) contributes to a more efficient and effective transportation system by making alternatives to the single occupant vehicle feasible. Transportation rights-of-way improvements and services that facilitate transit and pedestrian access, include a variety of mode choices, and offer convenient travel options are also important. Transportation improvements can also encourage development in preferred locations.

While much of Long Island has density below what is generally thought of to be supportive of public transportation (3 households per acre or 4 jobs per acre), primarily in Suffolk County, there are a number of fixed route and demand responsive services serving the public transit needs in those areas. Other areas have density high enough to support transit but would benefit from land uses geared more toward

pedestrians and public transportation. There are a number of ways Long Island can adjust land use policies and implement strategies to be more supportive of public transportation that currently exists.

It should be clearly understood that land use policies on Long Island are under the domain of local municipalities and are not controlled by Nassau or Suffolk County. However, transportation planning is done at the regional level, creating the potential for disjointed land use and transportation policies. The policy recommendations that follow are primarily targeted toward local agencies that influence zoning ordinance and land use regulations. However, some of the policies relate to transportation agencies at the regional level and most of the strategies for encouraging transit supportive land use may be employed by agencies at other levels of government.

Numerous transportation studies have been conducted on Long Island over the last decade, several of which include discussions of or recommendations relating to land use policies. These include:

- Incorporating transportation decisions into local land use planning (Quality Communities Initiative by New York State)
- Increasing awareness of the relationship between transportation and land use planning to limit sprawl (NYMTC 2005-2030 Regional Transportation Plan)
- Proactive integration of transportation and land use planning and encouraging:
 - Siting development with a regional market in a way that does not adversely impact similar development
 - Safe non-motorized transportation access to commercial and residential development
 - In-fill and brownfields development where transportation capacity already exists (NYMTC 2005-2030 Regional Transportation Plan)
- Favoring land use and transportation policies that concentrate development and transit around town centers (Sustainable East End Development Study)
- Recognizing that transit ridership is influenced by land use and land use should be coordinated with transit (Nassau Hub Major Investment Study)
- Coordinating transportation and land use including more County participation in land use decisions (Joint Executive/Legislative Task Force on Transportation Issues in Suffolk County)

5.9.1 Strategies for Encouraging Better and More Transit-Supportive Land Use Decisions

Provide information to optimize transportation and location decisions. Educating individuals, developers, and employers about the transportation consequences of their location decisions will also encourage choices that result in better access to transportation for residents, employees, and customers. Information about available transportation services and the proximity of employers, schools, retail centers, medical facilities and other destinations would help individuals to factor transportation into their selection of residential and employment locations. Information that highlights the advantages of locating in certain areas – such as geographic and socio-economic data and information about available transportation services, access to transportation infrastructure, and opportunities for investing in transportation improvements – would assist employers and developers in evaluating alternative locations for businesses, residential developments, and other enterprises.

Develop toolkits or guidebooks to help local communities incorporate transportation planning into their comprehensive planning processes and attain consistency with regional and state plans. Conduct training sessions or hold conferences to increase awareness of transportation/land use issues. Disseminate information through newsletters, a website, and/or printed materials.

Focus development in town and village centers where density is already higher; the development should include both jobs and housing.

Encourage development, particularly mixed use development, around LIRR stations.

Address transportation issues and needs in land use plans. This practice will reinforce the connection between transportation and land use and increase dialogue between agencies that may not coordinate efforts, such as the departments of transportation, housing and economic development.

Involve public transit providers as stakeholders early in the process of planning and designing new developments to ensure that issues such as the feasibility of transit service, access requirements for transit vehicles, and the nature of any mitigation measures are discussed before design decisions are made and construction begins.

Use financial incentives to encourage transit supportive development or investments, or penalties to discourage development that continues to neglect transit options.

Provide guidelines and support for local municipalities on how to use zoning ordinances and land use regulations to encourage transit investment and use.

Ensure adequate public transit access in new development in order to guarantee transit service will be available and convenient upon completion.

Require developers to finance transportation services to new locations or facilities they build that are outside of current transit provider service areas. Funds could also be required if the new facility will over-extend the current system. These requirements may be in the form of a covenant with the developer or some other arrangement offered by local government officials. Such requirements should help developers carefully consider how and where they plan projects regarding traffic and transportation impacts.

Work with state and local landowners regarding bus stop placement and shelters. State and local landowners and municipalities largely control where bus stops are located and whether a sign and/or bus shelter may be installed at a stop. It is important to establish a constructive dialogue on where the stops, signs and shelters should be located so that all parties (transit providers, landowners, and riders) are satisfied.

5.9.2 National Examples of Transit-Supportive Land Use Strategies and Policies

Land use policies and programs that are being used in other areas to encourage transit-supportive development are described briefly below.

Vermont

- Act 200 established financial incentives for towns to develop land use plans; state agencies are required to create planning documents that meet the established state planning goals and be compatible with regional plans and approved municipal plans
- The Downtown Community Development Act (24 V.S.A Chapter 76A) creates a formal “designation” process to recognize those downtowns and villages that qualify for the Downtown Transportation Fund,

tax credits for older and historic buildings, a sales tax reallocation program for building materials used in a qualified project, and “priority consideration” for all state programs. The Act finally creates a number of incentives limited to Designated Village Centers: building rehabilitation tax credits, priority for CDBG funds, and a priority for Municipal Planning Grant funds.

- Growth Centers legislation (passed in 2006) to support investing in high density, concentrated, mixed-use developments in growth centers that are conducive to pedestrian and other non vehicular traffic and that incorporates, accommodates, and supports the use of public transit systems

New Jersey

- The Office of Smart Growth was established to provide administrative and technical support for localities to implement state land use plans, as well as to target state capital grants toward communities that embrace Smart Growth principles
- The Transit Village Initiative provides grants to communities dedicated to TOD along with technical assistance from ten state agencies. In order to qualify for the grants and assistance, a community needs to be designated a transit village. Designation requires: demonstrated land use strategy, available properties, ready-to-go projects, station-area management, architectural integrity, and a program to promote jobs, housing and culture

North Carolina

- The latest transportation plan recommends requiring developer payments in lieu of transit, pedestrian, & bike amenities
- Several local governments and the Metropolitan Transit Commission developed and adopted a set of guidelines for TOD serve as a framework that local governments can use to advance TOD around transit stations and coordinate such development with regional transportation and urban plans.

Oregon

- The Transportation and Growth Management Program uses grants and technical assistance to local governments to encourage high-quality community planning.
- The state also has a TOD Tax Exemption (1995) that allows for residential property tax exemption for up to ten years for eligible projects.

Washington

- Snohomish County, Washington uses transit compatibility with land use to establish the level of service based on three factors: land use density, on-site compatibility, and off-site compatibility. The level of service is broken down by urban or rural and residential or commercial. This information is used to determine the type of public transit that is compatible with the development type, such as high capacity transit, regular fixed route, or demand response.

Appendix A

Demographic Characteristics of Long Island Cities and Towns, 2000

City, Village or Hamlet	City or Town	Total Pop.	Seniors	% Seniors	Asian Pop.	% Asian Pop.	Hispanic Pop.	% Hispanic Pop.	Pop. Ages 15-19	% Pop. Ages 15-19	Persons with Disabilities	% of Pop. With Disabilities	Total Households	Households with Annual Income <\$25K	% Households with Annual Income <\$25K
Glen Cove	Glen Cove	26,622	4,659	18%	1,094	4%	5,336	20%	1,518	6%	4,052	15%	9,456	1,862	20%
Atlantic Beach	Hempstead	1,986	439	22%	16	1%	59	3%	84	4%	243	12%	758	112	15%
Baldwin	Hempstead	23,455	2,818	12%	775	3%	2,721	12%	1,599	7%	3,630	15%	7,877	1,059	13%
Baldwin Harbor	Hempstead	8,147	1,063	13%	382	5%	561	7%	487	6%	1,115	14%	2,758	315	11%
Barnum Island	Hempstead	2,487	342	14%	56	2%	256	10%	142	6%	365	15%	851	173	20%
Bay Park	Hempstead	2,300	311	14%	22	1%	97	4%	109	5%	255	11%	834	86	10%
Bellerose	Hempstead	1,173	134	11%	78	7%	51	4%	81	7%	127	11%	371	23	6%
Bellerose Terrace	Hempstead	2,157	213	10%	338	16%	429	20%	173	8%	267	12%	644	112	17%
Bellmore	Hempstead	16,441	2,182	13%	330	2%	515	3%	894	5%	1,961	12%	5,649	643	11%
Cedarhurst	Hempstead	6,164	1,058	17%	190	3%	515	8%	350	6%	853	14%	2,297	495	22%
East Atlantic Beach	Hempstead	2,257	298	13%	20	1%	80	4%	88	4%	241	11%	900	108	12%
East Garden City	Hempstead	979	63	6%	12	1%	131	13%	62	6%	170	17%	288	38	13%
East Meadow	Hempstead	37,461	6,099	16%	2,503	7%	2,626	7%	2,328	6%	5,185	14%	12,161	1,649	14%
East Rockaway	Hempstead	10,414	1,607	15%	178	2%	603	6%	575	6%	1,413	14%	3,952	704	18%
Elmont	Hempstead	32,657	4,085	13%	2,968	9%	4,672	14%	2,328	7%	6,720	21%	9,932	1,826	18%
Floral Park	Hempstead	13,667	2,135	16%	392	3%	750	5%	830	6%	1,561	11%	4,936	692	14%
Franklin Square	Hempstead	29,342	5,443	19%	1,112	4%	2,023	7%	1,536	5%	4,680	16%	10,202	1,848	18%
Freeport	Hempstead	43,783	4,587	10%	604	1%	14,648	33%	3,032	7%	8,424	19%	13,547	2,679	20%
Garden City	Hempstead	21,672	3,637	17%	715	3%	600	3%	1,515	7%	2,369	11%	7,363	624	8%
Garden City South	Hempstead	3,974	759	19%	122	3%	233	6%	215	5%	663	17%	1,394	235	17%
Harbor Isle	Hempstead	1,334	251	19%	15	1%	45	3%	75	6%	159	12%	482	73	15%
Hempstead	Hempstead	56,554	4,801	8%	745	1%	17,991	32%	5,309	9%	10,796	19%	15,204	4,256	28%
Hewlett	Hempstead	7,060	1,186	17%	338	5%	612	9%	431	6%	850	12%	2,618	376	14%
Hewlett Bay Park	Hempstead	484	99	20%	19	4%	23	5%	28	6%	45	9%	157	7	4%
Hewlett Harbor	Hempstead	1,271	233	18%	40	3%	14	1%	85	7%	131	10%	429	36	8%
Hewlett Neck	Hempstead	504	67	13%	1	0%	5	1%	38	8%	38	8%	163	6	4%
Inwood	Hempstead	9,325	1,221	13%	190	2%	2,454	26%	681	7%	2,108	23%	3,039	989	33%
Island Park	Hempstead	4,732	633	13%	51	1%	864	18%	297	6%	632	13%	1,677	409	24%
Lakeview	Hempstead	5,607	759	14%	27	0%	389	7%	455	8%	1,006	18%	1,538	170	11%
Lawrence	Hempstead	6,522	1,048	16%	113	2%	223	3%	516	8%	615	9%	2,136	397	19%
Levittown	Hempstead	53,063	6,855	13%	1,511	3%	3,601	7%	3,224	6%	8,739	16%	17,250	1,770	10%
Lido Beach	Hempstead	2,825	603	21%	45	2%	81	3%	138	5%	378	13%	1,133	156	14%
Lynbrook	Hempstead	19,911	3,515	18%	596	3%	1,648	8%	1,044	5%	3,529	18%	7,388	1,452	20%
Malverne	Hempstead	8,934	1,398	16%	277	3%	537	6%	477	5%	1,081	12%	3,118	376	12%
Malverne Park Oaks	Hempstead	470	90	19%	20	4%	35	7%	21	4%	78	17%	177	0	0%
Merrick	Hempstead	22,764	2,885	13%	510	2%	842	4%	1,341	6%	2,458	11%	7,511	677	9%
Mineola	Hempstead	15	6	40%	7	47%	0	0%	0	0%	0	0%	11	0	0%
New Hyde Park	Hempstead	3,975	678	17%	421	11%	270	7%	214	5%	533	13%	1,361	221	16%
North Bellmore	Hempstead	20,079	2,952	15%	633	3%	913	5%	1,191	6%	2,767	14%	6,574	753	11%
North Lynbrook	Hempstead	742	181	24%	26	4%	78	11%	41	6%	67	9%	201	35	17%
North Merrick	Hempstead	11,844	1,829	15%	378	3%	436	4%	690	6%	1,505	13%	3,985	404	10%
North Valley Stream	Hempstead	15,789	2,217	14%	1,426	9%	1,709	11%	1,125	7%	2,608	17%	4,881	612	13%
North Wantagh	Hempstead	12,156	1,973	16%	221	2%	556	5%	650	5%	1,759	14%	4,356	578	13%
Oceanside	Hempstead	32,733	5,108	16%	600	2%	1,931	6%	1,935	6%	4,624	14%	11,209	1,626	15%
Point Lookout	Hempstead	1,472	265	18%	7	0%	31	2%	67	5%	404	27%	628	127	20%
Rockville Centre	Hempstead	24,568	3,999	16%	348	1%	1,896	8%	1,519	6%	3,143	13%	9,212	1,392	15%
Roosevelt	Hempstead	15,854	1,282	8%	77	0%	2,572	16%	1,206	8%	3,885	25%	4,074	748	18%
Salisbury	Hempstead	12,341	1,920	16%	1,108	9%	1,056	9%	753	6%	1,379	11%	4,019	469	12%
Seaford	Hempstead	15,791	2,160	14%	265	2%	586	4%	989	6%	2,192	14%	5,252	616	12%

City, Village or Hamlet	City or Town	Total Pop.	Seniors	% Seniors	Asian Pop.	% Asian Pop.	Hispanic Pop.	% Hispanic Pop.	Pop. Ages 15-19	% Pop. Ages 15-19	Persons with Disabilities	% of Pop. With Disabilities	Total Households	Households with Annual Income <\$25K	% Households with Annual Income <\$25K
South Floral Park	Hempstead	1,578	188	12%	60	4%	214	14%	115	7%	251	16%	461	58	13%
South Hempstead	Hempstead	3,188	421	13%	80	3%	303	10%	213	7%	485	15%	1,041	122	12%
South Valley Stream	Hempstead	5,638	1,077	19%	764	14%	286	5%	343	6%	856	15%	2,020	399	20%
Stewart Manor	Hempstead	1,935	310	16%	37	2%	78	4%	111	6%	294	15%	727	71	10%
Uniondale	Hempstead	23,011	2,894	13%	484	2%	5,261	23%	1,613	7%	4,017	17%	6,046	1,181	20%
Valley Stream	Hempstead	36,368	5,920	16%	2,496	7%	4,463	12%	2,302	6%	5,766	16%	12,508	2,025	16%
Wantagh	Hempstead	18,971	2,520	13%	359	2%	619	3%	1,122	6%	2,722	14%	6,162	616	10%
West Hempstead	Hempstead	18,713	2,689	14%	951	5%	1,860	10%	1,169	6%	2,295	12%	6,058	785	13%
Woodmere	Hempstead	16,447	2,852	17%	613	4%	587	4%	1,106	7%	1,715	10%	5,366	517	10%
Woodsburgh	Hempstead	831	105	13%	6	1%	18	2%	79	10%	56	7%	245	11	4%
Hempstead Totals		755,915	106,463	14%	26,678	4%	86,657	11%	49,141	7%	116,208	15%	247,131	37,937	15%
Long Beach	Long Beach	35,462	5,911	17%	822	2%	4,540	13%	1,676	5%	7,172	20%	14,938	2,929	20%
Albertson	North Hempstead	5,200	1,010	19%	755	15%	286	6%	293	6%	685	13%	1,819	304	17%
Baxter Estates	North Hempstead	1,006	130	13%	72	7%	147	15%	56	6%	139	14%	380	52	14%
Carle Place	North Hempstead	5,247	802	15%	286	5%	408	8%	329	6%	916	17%	1,916	401	21%
East Hills	North Hempstead	6,822	982	14%	330	5%	96	1%	370	5%	627	9%	2,249	117	5%
East Williston	North Hempstead	2,503	387	15%	84	3%	59	2%	176	7%	229	9%	829	58	7%
Floral Park	North Hempstead	2,300	354	15%	228	10%	109	5%	124	5%	234	10%	821	149	18%
Flower Hill	North Hempstead	4,508	734	16%	465	10%	181	4%	270	6%	409	9%	1,480	107	7%
Garden City	North Hempstead	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!
Garden City Park	North Hempstead	7,554	1,435	19%	1,548	20%	611	8%	463	6%	1,243	16%	2,514	372	15%
Glenwood Landing	North Hempstead	60	7	12%	4	7%	3	5%	0	0%	0	0%	26	0	0%
Great Neck	North Hempstead	9,538	1,670	18%	471	5%	875	9%	647	7%	1,234	13%	3,349	608	18%
Great Neck Estates	North Hempstead	2,756	477	17%	133	5%	72	3%	186	7%	345	13%	948	45	5%
Great Neck Gardens	North Hempstead	1,089	178	16%	81	7%	25	2%	65	6%	113	10%	354	0	0%
Great Neck Plaza	North Hempstead	6,433	1,946	30%	194	3%	469	7%	168	3%	1,066	17%	3,555	753	21%
Greenvale	North Hempstead	1,981	98	5%	214	11%	279	14%	541	27%	279	14%	277	43	16%
Harbor Hills	North Hempstead	563	88	16%	12	2%	7	1%	42	7%	59	10%	191	16	8%
Herricks	North Hempstead	4,076	761	19%	994	24%	170	4%	275	7%	550	13%	1,353	176	13%
Kensington	North Hempstead	1,209	255	21%	60	5%	48	4%	99	8%	119	10%	429	34	8%
Kings Point	North Hempstead	5,076	741	15%	180	4%	99	2%	542	11%	435	9%	1,394	129	9%
Lake Success	North Hempstead	2,797	1,000	36%	424	15%	33	1%	155	6%	207	7%	799	36	5%
Manhasset	North Hempstead	8,362	1,592	19%	577	7%	599	7%	482	6%	1,132	14%	2,831	367	13%
Manhasset Hills	North Hempstead	3,661	748	20%	990	27%	121	3%	244	7%	358	10%	1,237	116	9%
Manorhaven	North Hempstead	6,138	667	11%	821	13%	1,197	20%	321	5%	952	16%	2,404	376	16%
Mineola	North Hempstead	19,219	3,016	16%	863	4%	2,507	13%	1,050	5%	2,623	14%	7,483	1,212	16%
Munsey Park	North Hempstead	2,632	326	12%	149	6%	43	2%	187	7%	267	10%	819	27	3%
New Cassel	North Hempstead	13,298	1,134	9%	188	1%	5,467	41%	1,039	8%	3,569	27%	2,945	579	20%
New Hyde Park	North Hempstead	5,548	1,048	19%	855	15%	486	9%	322	6%	829	15%	1,924	319	17%
North Hills	North Hempstead	4,301	1,175	27%	681	16%	62	1%	134	3%	560	13%	1,814	147	8%
North New Hyde Park	North Hempstead	14,542	2,862	20%	2,157	15%	707	5%	862	6%	2,180	15%	5,045	688	14%
Old Westbury	North Hempstead	3,561	409	11%	445	12%	287	8%	498	14%	627	18%	862	42	5%
Plandome	North Hempstead	1,272	196	15%	40	3%	27	2%	88	7%	140	11%	402	35	9%
Plandome Heights	North Hempstead	971	135	14%	66	7%	30	3%	62	6%	71	7%	329	27	8%
Plandome Manor	North Hempstead	838	143	17%	46	5%	19	2%	43	5%	67	8%	285	11	4%
Port Washington	North Hempstead	15,215	2,275	15%	924	6%	1,704	11%	772	5%	1,928	13%	5,511	785	14%
Port Washington North	North Hempstead	2,700	397	15%	247	9%	170	6%	125	5%	272	10%	1,074	124	12%
Roslyn	North Hempstead	2,570	583	23%	158	6%	163	6%	102	4%	310	12%	1,065	131	12%
Roslyn Estates	North Hempstead	1,210	175	14%	59	5%	27	2%	65	5%	103	9%	400	28	7%

City, Village or Hamlet	City or Town	Total Pop.	Seniors	% Seniors	Asian Pop.	% Asian Pop.	Hispanic Pop.	% Hispanic Pop.	Pop. Ages 15-19	% Pop. Ages 15-19	Persons with Disabilities	% of Pop. With Disabilities	Total Households	Households with Annual Income <\$25K	% Households with Annual Income <\$25K
Roslyn Harbor	North Hempstead	714	146	20%	28	4%	15	2%	33	5%	63	9%	251	25	10%
Roslyn Heights	North Hempstead	6,295	1,004	16%	630	10%	406	6%	396	6%	1,036	16%	2,172	284	13%
Russell Gardens	North Hempstead	1,074	180	17%	114	11%	54	5%	60	6%	128	12%	397	45	11%
Saddle Rock	North Hempstead	791	158	20%	49	6%	14	2%	59	7%	87	11%	267	21	8%
Saddle Rock Estates	North Hempstead	424	57	13%	8	2%	5	1%	36	8%	34	8%	148	0	0%
Sands Point	North Hempstead	2,786	436	16%	230	8%	109	4%	143	5%	397	14%	846	68	8%
Searingtown	North Hempstead	5,034	818	16%	1,302	26%	144	3%	361	7%	447	9%	1,590	45	3%
Thomaston	North Hempstead	2,607	452	17%	357	14%	207	8%	145	6%	289	11%	979	116	12%
University Gardens	North Hempstead	4,138	634	15%	550	13%	314	8%	247	6%	661	16%	1,667	134	8%
Westbury	North Hempstead	14,263	1,940	14%	673	5%	2,689	19%	843	6%	2,516	18%	4,647	566	12%
Williston Park	North Hempstead	7,261	1,178	16%	507	7%	313	4%	401	6%	824	11%	2,605	343	13%
North Hempstead Totals		222,143	36,939	17%	20,249	9%	21,863	10%	13,921	6%	31,359	14%	76,682	10,061	13%
Bayville	Oyster Bay	7,135	955	13%	117	2%	344	5%	382	5%	925	13%	2,499	430	17%
Bethpage	Oyster Bay	16,543	3,105	19%	494	3%	785	5%	890	5%	2,864	17%	5,711	902	16%
Brookville	Oyster Bay	2,126	250	12%	131	6%	57	3%	129	6%	154	7%	615	32	5%
Centre Island	Oyster Bay	444	73	16%	4	1%	14	3%	20	5%	36	8%	185	27	15%
Cove Neck	Oyster Bay	300	58	19%	12	4%	13	4%	22	7%	14	5%	94	0	0%
East Hills	Oyster Bay	20	5	25%	0	0%	5	25%	2	10%	14	70%	6	6	100%
East Massapequa	Oyster Bay	19,565	2,788	14%	437	2%	1,466	7%	1,060	5%	2,591	13%	6,415	784	12%
East Norwich	Oyster Bay	2,675	443	17%	66	2%	85	3%	157	6%	353	13%	939	79	8%
Farmingdale	Oyster Bay	8,399	1,238	15%	311	4%	1,056	13%	421	5%	1,228	15%	3,235	532	16%
Glen Head	Oyster Bay	4,625	780	17%	93	2%	213	5%	262	6%	664	14%	1,682	244	15%
Glenwood Landing	Oyster Bay	3,481	568	16%	88	3%	115	3%	172	5%	505	15%	1,239	180	15%
Greenvale	Oyster Bay	250	38	15%	20	8%	13	5%	19	8%	41	16%	95	0	0%
Hicksville	Oyster Bay	41,260	6,650	16%	3,731	9%	3,819	9%	2,406	6%	6,462	16%	13,706	1,819	13%
Jericho	Oyster Bay	13,045	2,133	16%	1,394	11%	318	2%	724	6%	1,550	12%	4,559	380	8%
Laittingtown	Oyster Bay	1,860	265	14%	65	3%	43	2%	89	5%	190	10%	633	55	9%
Laurel Hollow	Oyster Bay	1,930	261	14%	132	7%	38	2%	112	6%	183	9%	621	14	2%
Levittown	Oyster Bay	4	0	0%	0	0%	0	0%	0	0%	0	0%	0	0	#DIV/0!
Locust Valley	Oyster Bay	3,521	497	14%	70	2%	512	15%	188	5%	457	13%	1,281	207	16%
Massapequa	Oyster Bay	22,652	3,249	14%	287	1%	587	3%	1,228	5%	2,558	11%	7,413	696	9%
Massapequa Park	Oyster Bay	17,499	2,798	16%	246	1%	525	3%	927	5%	1,800	10%	5,779	467	8%
Matinecock	Oyster Bay	836	128	15%	13	2%	32	4%	45	5%	85	10%	305	37	12%
Mill Neck	Oyster Bay	825	137	17%	39	5%	46	6%	46	6%	78	9%	271	35	13%
Muttontown	Oyster Bay	3,412	335	10%	546	16%	78	2%	240	7%	410	12%	1,017	64	6%
North Massapequa	Oyster Bay	19,152	3,143	16%	221	1%	619	3%	1,080	6%	2,587	14%	6,275	870	14%
Old Bethpage	Oyster Bay	5,400	971	18%	159	3%	104	2%	311	6%	635	12%	1,828	247	14%
Old Brookville	Oyster Bay	2,167	338	16%	159	7%	44	2%	120	6%	210	10%	720	53	7%
Old Westbury	Oyster Bay	667	80	12%	42	6%	15	2%	50	7%	57	9%	211	9	4%
Oyster Bay	Oyster Bay	6,826	1,146	17%	120	2%	836	12%	354	5%	1,010	15%	2,819	515	18%
Oyster Bay Cove	Oyster Bay	2,262	269	12%	135	6%	38	2%	143	6%	166	7%	718	57	8%
Plainedge	Oyster Bay	9,195	1,447	16%	225	2%	473	5%	463	5%	1,265	14%	3,024	348	12%
Plainview	Oyster Bay	25,637	4,348	17%	1,229	5%	658	3%	1,451	6%	3,014	12%	8,567	866	10%
Roslyn Harbor	Oyster Bay	309	53	17%	23	7%	19	6%	13	4%	38	12%	103	2	2%
Sea Cliff	Oyster Bay	5,066	786	16%	62	1%	241	5%	257	5%	576	11%	2,007	273	14%
South Farmingdale	Oyster Bay	15,061	2,444	16%	479	3%	888	6%	840	6%	1,756	12%	4,924	573	12%
Syosset	Oyster Bay	18,544	2,781	15%	2,347	13%	542	3%	1,119	6%	1,760	9%	6,284	562	9%
Upper Brookville	Oyster Bay	1,801	244	14%	130	7%	96	5%	130	7%	231	13%	580	72	12%
Woodbury	Oyster Bay	9,010	1,888	21%	636	7%	128	1%	484	5%	673	7%	2,848	224	8%

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Oyster Bay Totals		293,504	46,692	16%	14,263	5%	14,865	5%	16,356	6%	37,140	13%	99,208	11,661	12%
Nassau County Totals		1,333,646	200,664	15%	63,106	5%	133,261	10%	82,612	6%	195,931	15%	447,415	64,450	14%
City, Village or Hamlet	City or Town	Total Pop.	Seniors	% Seniors	Asian Pop.	% Asian Pop.	Hispanic Pop.	% Hispanic Pop.	Pop. Ages 15-19	% Pop. Ages 15-19	Persons with Disabilities	% of Pop. With Disabilities	Total Households	Households with Annual Income <\$25K	% Households with Annual Income <\$25K
Amityville	Babylon	9,441	1,656	18%	121	1%	867	9%	421	4%	1,389	15%	3,434	591	17%
Babylon	Babylon	12,615	1,562	12%	183	1%	644	5%	688	5%	1,920	15%	4,566	529	12%
Copiague	Babylon	21,922	2,627	12%	382	2%	4,489	20%	1,275	6%	4,169	19%	7,171	1,316	18%
Deer Park	Babylon	28,316	4,020	14%	814	3%	2,139	8%	1,517	5%	4,334	15%	9,495	1,537	16%
East Farmingdale	Babylon	5,400	571	11%	221	4%	687	13%	370	7%	772	14%	1,713	252	15%
Fire Island	Babylon	2	0	0%	0	0%	1	50%	0	0%	0	0%	0	0	#DIV/0!
Gilgo-Oak Beach-Captree	Babylon	328	71	22%	9	3%	6	2%	11	3%	36	11%	157	25	16%
Lindenhurst	Babylon	27,819	3,083	11%	382	1%	1,813	7%	1,676	6%	4,259	15%	9,060	1,497	17%
North Amityville	Babylon	16,572	1,958	12%	173	1%	2,242	14%	1,254	8%	4,375	26%	5,042	1,317	26%
North Babylon	Babylon	17,877	2,515	14%	373	2%	1,313	7%	936	5%	2,849	16%	6,109	863	14%
North Lindenhurst	Babylon	11,767	1,385	12%	251	2%	1,372	12%	687	6%	2,338	20%	3,804	488	13%
West Babylon	Babylon	43,452	5,718	13%	825	2%	3,344	8%	2,633	6%	7,744	18%	14,304	2,495	17%
Wheatley Heights	Babylon	5,013	397	8%	171	3%	585	12%	392	8%	862	17%	1,445	157	11%
Wyandanch	Babylon	10,546	684	6%	60	1%	1,724	16%	922	9%	2,372	22%	2,551	686	27%
Babylon Totals		211,070	26,247	12%	3,965	2%	21,226	10%	12,782	6%	37,419	18%	68,851	11,753	17%
Belle Terre	Brookhaven	832	110	13%	42	5%	16	2%	44	5%	127	15%	283	19	7%
Bellport	Brookhaven	2,363	483	20%	39	2%	42	2%	122	5%	292	12%	985	67	7%
Blue Point	Brookhaven	4,407	522	12%	47	1%	192	4%	247	6%	515	12%	1,570	171	11%
Brookhaven	Brookhaven	3,570	541	15%	23	1%	228	6%	192	5%	522	15%	1,088	120	11%
Calverton	Brookhaven	1,235	60	5%	14	1%	130	11%	99	8%	215	17%	373	112	30%
Centereach	Brookhaven	27,285	2,524	9%	864	3%	1,932	7%	1,891	7%	4,045	15%	8,106	935	12%
Center Moriches	Brookhaven	6,655	808	12%	66	1%	440	7%	384	6%	1,015	15%	2,257	313	14%
Coram	Brookhaven	34,923	3,259	9%	1,161	3%	3,314	9%	1,972	6%	4,989	14%	12,577	1,879	15%
East Moriches	Brookhaven	4,550	570	13%	66	1%	235	5%	266	6%	773	17%	1,515	237	16%
East Patchogue	Brookhaven	20,824	3,102	15%	405	2%	1,895	9%	1,144	5%	3,436	17%	7,512	1,448	19%
Eastport	Brookhaven	631	72	11%	7	1%	89	14%	36	6%	148	23%	254	50	20%
East Shoreham	Brookhaven	5,809	435	7%	88	2%	235	4%	453	8%	816	14%	1,807	107	6%
Farmingville	Brookhaven	16,458	1,100	7%	292	2%	1,336	8%	1,132	7%	2,311	14%	5,040	505	10%
Fire Island	Brookhaven	117	10	9%	1	1%	0	0%	7	6%	18	15%	63	11	17%
Gordon Heights	Brookhaven	3,094	270	9%	59	2%	449	15%	255	8%	580	19%	855	154	18%
Holbrook	Brookhaven	5,036	440	9%	95	2%	327	6%	331	7%	631	13%	1,520	118	8%
Holtsville	Brookhaven	14,317	985	7%	260	2%	1,045	7%	932	7%	1,737	12%	4,327	463	11%
Lake Grove	Brookhaven	10,250	927	9%	505	5%	496	5%	606	6%	1,334	13%	3,444	372	11%
Lake Ronkonkoma	Brookhaven	15,187	2,019	13%	368	2%	898	6%	921	6%	2,472	16%	5,220	1,161	22%
Manorville	Brookhaven	11,131	1,473	13%	73	1%	461	4%	575	5%	1,382	12%	4,198	620	15%
Mastic	Brookhaven	15,165	839	6%	173	1%	1,862	12%	1,255	8%	2,583	17%	4,404	717	16%
Mastic Beach	Brookhaven	11,543	870	8%	105	1%	1,222	11%	891	8%	2,225	19%	3,757	853	23%
Medford	Brookhaven	21,985	1,724	8%	303	1%	2,373	11%	1,587	7%	3,093	14%	6,786	745	11%
Middle Island	Brookhaven	9,702	1,333	14%	237	2%	667	7%	532	5%	1,686	17%	3,739	674	18%
Miller Place	Brookhaven	10,580	769	7%	143	1%	339	3%	745	7%	1,211	11%	3,409	234	7%
Moriches	Brookhaven	2,319	537	23%	42	2%	92	4%	64	3%	377	16%	1,125	207	18%

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Mount Sinai	Brookhaven	8,734	782	9%	130	1%	364	4%	584	7%	1,017	12%	2,667	178	7%
North Bellport	Brookhaven	9,007	573	6%	178	2%	1,841	20%	783	9%	1,538	17%	2,394	533	22%
North Patchogue	Brookhaven	7,825	677	9%	87	1%	686	9%	472	6%	1,024	13%	2,696	410	15%
Old Field	Brookhaven	947	117	12%	34	4%	22	2%	63	7%	57	6%	294	19	6%
Patchogue	Brookhaven	11,919	1,251	10%	166	1%	2,842	24%	653	5%	2,295	19%	4,623	1,222	26%
Poquott	Brookhaven	975	85	9%	40	4%	43	4%	65	7%	85	9%	354	26	7%
Port Jefferson	Brookhaven	7,837	1,157	15%	261	3%	408	5%	456	6%	1,058	14%	2,966	479	16%
Port Jefferson Station	Brookhaven	7,527	837	11%	283	4%	685	9%	458	6%	1,105	15%	2,615	474	18%
Ridge	Brookhaven	13,380	3,891	29%	120	1%	469	4%	713	5%	2,640	20%	5,443	1,581	29%
Rocky Point	Brookhaven	10,185	836	8%	123	1%	511	5%	555	5%	1,376	14%	3,567	704	20%
Selden	Brookhaven	21,861	1,888	9%	537	2%	1,799	8%	1,532	7%	3,379	15%	6,798	1,002	15%
Setauket-East Setauket	Brookhaven	15,931	1,490	9%	1,402	9%	546	3%	932	6%	1,548	10%	5,541	706	13%
Shirley	Brookhaven	25,395	1,592	6%	312	1%	2,749	11%	1,974	8%	4,259	17%	7,342	1,071	15%
Shoreham	Brookhaven	417	52	12%	10	2%	12	3%	34	8%	27	6%	141	17	12%
Sound Beach	Brookhaven	9,807	808	8%	117	1%	341	3%	648	7%	1,209	12%	3,346	552	16%
Stony Brook	Brookhaven	13,727	1,745	13%	782	6%	334	2%	804	6%	1,184	9%	4,755	434	9%
Terryville	Brookhaven	10,589	892	8%	242	2%	1,007	10%	655	6%	1,548	15%	3,365	374	11%
Yaphank	Brookhaven	5,025	584	12%	52	1%	369	7%	277	6%	537	11%	1,617	193	12%
Brookhaven Totals		441,056	45,039	10%	10,354	2%	35,343	8%	28,341	6%	64,419	15%	146,738	22,267	15%
Amagansett	East Hampton	1,067	239	22%	4	0%	43	4%	59	6%	177	17%	502	98	20%
East Hampton	East Hampton	1,334	362	27%	25	2%	119	9%	42	3%	273	20%	619	128	21%
East Hampton North	East Hampton	3,587	616	17%	58	2%	596	17%	198	6%	736	21%	1,385	386	28%
Montauk	East Hampton	3,851	559	15%	32	1%	921	24%	169	4%	660	17%	1,594	463	29%
Napeague	East Hampton	223	51	23%	0	0%	15	7%	6	3%	94	42%	105	27	26%
Northwest Harbor	East Hampton	3,059	425	14%	32	1%	280	9%	169	6%	651	21%	1,263	231	18%
Sag Harbor	East Hampton	948	225	24%	11	1%	72	8%	45	5%	101	11%	432	78	18%
Springs	East Hampton	4,950	667	13%	72	1%	804	16%	297	6%	915	18%	1,935	349	18%
Wainscott	East Hampton	628	120	19%	2	0%	44	7%	28	4%	101	16%	244	55	23%
East Hampton Totals		19,647	3,264	17%	236	1%	2,894	15%	1,013	5%	3,708	19%	8,079	1,815	22%
Asharoken	Huntington	625	113	18%	17	3%	12	2%	26	4%	71	11%	264	18	7%
Centerport	Huntington	5,446	678	12%	64	1%	117	2%	244	4%	576	11%	2,000	132	7%
Cold Spring Harbor	Huntington	4,975	665	13%	65	1%	98	2%	267	5%	531	11%	1,749	95	5%
Commack	Huntington	12,372	2,078	17%	442	4%	329	3%	594	5%	1,310	11%	3,907	366	9%
Dix Hills	Huntington	26,024	2,637	10%	1,916	7%	995	4%	1,635	6%	2,889	11%	8,016	493	6%
East Northport	Huntington	20,845	2,871	14%	475	2%	814	4%	1,033	5%	2,678	13%	7,003	740	11%
Eatons Neck	Huntington	1,388	204	15%	14	1%	16	1%	54	4%	123	9%	504	31	6%
Elwood	Huntington	10,916	1,424	13%	611	6%	550	5%	565	5%	1,276	12%	3,425	269	8%
Fort Salonga	Huntington	5,693	639	11%	87	2%	139	2%	310	5%	506	9%	1,971	205	10%
Greenlawn	Huntington	13,286	2,076	16%	372	3%	905	7%	795	6%	1,975	15%	4,483	883	20%
Halesite	Huntington	2,582	338	13%	24	1%	80	3%	102	4%	268	10%	965	133	14%
Huntington	Huntington	18,403	2,588	14%	332	2%	658	4%	832	5%	2,092	11%	7,098	881	12%
Huntington Bay	Huntington	1,496	246	16%	14	1%	19	1%	92	6%	156	10%	534	25	5%
Huntington Station	Huntington	29,910	3,176	11%	924	3%	6,802	23%	1,917	6%	4,491	15%	9,714	1,624	17%
Lloyd Harbor	Huntington	3,675	450	12%	69	2%	85	2%	248	7%	233	6%	1,144	51	4%
Melville	Huntington	14,533	2,052	14%	787	5%	540	4%	734	5%	1,576	11%	4,918	504	10%
Northport	Huntington	7,606	922	12%	95	1%	159	2%	381	5%	838	11%	2,964	314	11%
South Huntington	Huntington	9,465	1,573	17%	336	4%	356	4%	437	5%	1,159	12%	3,307	391	12%
West Hills	Huntington	5,607	752	13%	191	3%	135	2%	290	5%	428	8%	1,973	148	8%
Huntington Totals		194,847	25,482	13%	6,835	4%	12,809	7%	10,556	5%	23,176	12%	65,939	7,303	11%

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Bayport	Islip	8,662	1,126	13%	102	1%	340	4%	446	5%	1,081	12%	3,234	593	18%
Bay Shore	Islip	23,852	2,720	11%	560	2%	4,738	20%	1,651	7%	4,681	20%	8,201	2,042	25%
Baywood	Islip	7,571	711	9%	139	2%	1,759	23%	452	6%	1,267	17%	2,220	328	15%
Bohemia	Islip	9,871	1,318	13%	235	2%	435	4%	529	5%	1,809	18%	3,338	529	16%
Brentwood	Islip	53,917	4,447	8%	1,084	2%	29,251	54%	4,127	8%	11,116	21%	12,556	1,947	16%
Brightwaters	Islip	3,248	379	12%	42	1%	132	4%	200	6%	269	8%	1,121	74	7%
Central Islip	Islip	31,950	2,370	7%	991	3%	11,452	36%	2,518	8%	6,627	21%	8,809	1,646	19%
East Islip	Islip	14,078	1,665	12%	198	1%	547	4%	846	6%	1,651	12%	4,571	542	12%
Fire Island	Islip	191	22	12%	1	1%	8	4%	11	6%	36	19%	84	13	15%
Gilgo-Oak Beach-Captree	Islip	5	0	0%	0	0%	0	0%	0	0%	0	0%	3	0	0%
Great River	Islip	1,546	197	13%	9	1%	29	2%	83	5%	247	16%	504	69	14%
Hauppauge	Islip	10,027	944	9%	495	5%	522	5%	577	6%	1,390	14%	3,475	308	9%
Holbrook	Islip	22,476	1,618	7%	694	3%	1,289	6%	1,399	6%	2,851	13%	7,460	786	11%
Holtsville	Islip	2,689	188	7%	36	1%	155	6%	126	5%	294	11%	978	121	12%
Islandia	Islip	3,057	215	7%	185	6%	584	19%	160	5%	695	23%	1,007	107	11%
Islip	Islip	20,575	2,288	11%	425	2%	2,195	11%	1,157	6%	2,888	14%	6,856	955	14%
Islip Terrace	Islip	5,641	539	10%	84	1%	373	7%	388	7%	836	15%	1,749	141	8%
North Bay Shore	Islip	14,992	1,037	7%	306	2%	7,608	51%	1,160	8%	2,559	17%	3,812	648	17%
North Great River	Islip	3,929	410	10%	49	1%	248	6%	250	6%	623	16%	1,156	125	11%
Oakdale	Islip	8,075	1,045	13%	54	1%	243	3%	463	6%	1,490	18%	3,041	586	19%
Ocean Beach	Islip	138	13	9%	2	1%	3	2%	6	4%	25	18%	59	9	15%
Ronkonkoma	Islip	20,029	1,504	8%	479	2%	1,269	6%	1,254	6%	3,091	15%	6,564	855	13%
Saltaire	Islip	43	9	21%	4	9%	1	2%	1	2%	8	19%	17	0	0%
Sayville	Islip	16,735	1,967	12%	340	2%	505	3%	1,016	6%	1,899	11%	5,595	815	15%
West Bay Shore	Islip	4,775	828	17%	105	2%	195	4%	253	5%	588	12%	1,714	169	10%
West Islip	Islip	28,907	3,522	12%	316	1%	1,018	4%	1,646	6%	3,588	12%	8,959	818	9%
West Sayville	Islip	5,003	720	14%	65	1%	105	2%	300	6%	710	14%	1,736	263	15%
Islip Totals		321,982	31,802	10%	7,000	2%	65,004	20%	21,019	7%	52,319	16%	98,819	14,489	15%
Mastic	Poospatuck	271	16	6%	0	0%	13	5%	21	8%	28	10%	93	57	61%
Aquebogue	Riverhead	2,254	371	16%	7	0%	73	3%	129	6%	432	19%	834	144	17%
Baiting Hollow	Riverhead	1,449	193	13%	8	1%	58	4%	63	4%	250	17%	573	63	11%
Calverton	Riverhead	4,469	1,401	31%	40	1%	216	5%	144	3%	1,058	24%	2,088	702	34%
Jamesport	Riverhead	1,526	304	20%	8	1%	97	6%	74	5%	292	19%	583	109	19%
Northville	Riverhead	801	121	15%	2	0%	39	5%	40	5%	133	17%	319	57	18%
Riverhead	Riverhead	10,513	2,027	19%	119	1%	949	9%	601	6%	2,396	23%	4,004	1,352	34%
Wading River	Riverhead	6,668	690	10%	65	1%	246	4%	401	6%	774	12%	2,372	397	17%
Riverhead Totals		27,680	5,107	18%	249	1%	1,678	6%	1,452	5%	5,335	19%	10,773	2,824	26%
Dering Harbor	Shelter Island	13	3	23%	0	0%	0	0%	1	8%	6	46%	8	3	38%
Shelter Island	Shelter Island	1,234	283	23%	7	1%	40	3%	49	4%	242	20%	564	126	22%
Shelter Island Heights	Shelter Island	981	352	36%	4	0%	13	1%	37	4%	272	28%	425	84	20%
Shelter Island Totals		2,228	638	29%	11	0%	53	2%	87	4%	520	23%	997	213	21%
Commack	Smithtown	23,995	3,038	13%	925	4%	726	3%	1,324	6%	2,801	12%	7,811	786	10%
Fort Salonga	Smithtown	3,941	471	12%	78	2%	78	2%	213	5%	346	9%	1,261	75	6%
Hauppauge	Smithtown	10,073	1,258	12%	226	2%	365	4%	503	5%	1,178	12%	3,530	329	9%
Head of the Harbor	Smithtown	1,447	168	12%	47	3%	20	1%	91	6%	207	14%	485	34	7%
Kings Park	Smithtown	16,146	2,239	14%	305	2%	538	3%	869	5%	2,420	15%	5,414	839	15%
Lake Ronkonkoma	Smithtown	4,514	383	8%	106	2%	255	6%	254	6%	603	13%	1,458	170	12%
Nesconset	Smithtown	11,992	1,156	10%	373	3%	403	3%	649	5%	1,255	10%	3,961	323	8%
Nissequogue	Smithtown	1,543	183	12%	15	1%	45	3%	82	5%	143	9%	531	41	8%

City, Village or Hamlet	City or Town	Total Pop.	Seniors	% Seniors	Asian Pop.	% Asian Pop.	Hispanic Pop.	% Hispanic Pop.	Pop. Ages 15-19	% Pop. Ages 15-19	Persons with Disabilities	% of Pop. With Disabilities	Total Households	Households with Annual Income <\$25K	% Households with Annual Income <\$25K
St. James	Smithtown	13,268	2,408	18%	164	1%	458	3%	724	5%	1,544	12%	4,586	631	14%
Smithtown	Smithtown	26,901	3,931	15%	475	2%	910	3%	1,380	5%	3,411	13%	8,853	1,036	12%
Village of the Branch	Smithtown	1,895	317	17%	49	3%	57	3%	105	6%	296	16%	613	38	6%
Smithtown Totals		115,715	15,552	13%	2,763	2%	3,855	3%	6,194	5%	14,204	12%	38,503	4,302	11%
Bridgehampton	Southampton	1,381	316	23%	11	1%	45	3%	70	5%	188	14%	629	131	21%
Eastport	Southampton	823	128	16%	10	1%	47	6%	44	5%	112	14%	324	63	19%
East Quogue	Southampton	4,265	551	13%	30	1%	230	5%	213	5%	841	20%	1,675	285	17%
Flanders	Southampton	3,646	324	9%	26	1%	502	14%	260	7%	759	21%	1,304	327	25%
Hampton Bays	Southampton	12,236	2,013	16%	86	1%	1,529	12%	598	5%	1,892	15%	4,925	1,091	22%
Northampton	Southampton	468	46	10%	4	1%	39	8%	50	11%	96	21%	138	23	17%
North Haven	Southampton	743	209	28%	5	1%	11	1%	25	3%	112	15%	299	41	14%
North Sea	Southampton	4,493	711	16%	43	1%	238	5%	225	5%	529	12%	1,905	315	17%
Noyack	Southampton	2,696	534	20%	23	1%	124	5%	98	4%	350	13%	1,211	232	19%
Quogue	Southampton	800	135	17%	15	2%	115	14%	51	6%	106	13%	327	84	26%
Quogue	Southampton	1,018	210	21%	4	0%	28	3%	43	4%	228	22%	435	73	17%
Remsenburg-Speonk	Southampton	2,675	467	17%	17	1%	140	5%	134	5%	374	14%	972	155	16%
Riverside	Southampton	2,875	512	18%	21	1%	278	10%	205	7%	508	18%	813	389	48%
Sagaponack	Southampton	582	106	18%	15	3%	20	3%	20	3%	94	16%	254	39	15%
Sag Harbor	Southampton	1,365	334	24%	11	1%	97	7%	50	4%	255	19%	723	134	19%
Shinnecock Hills	Southampton	1,749	247	14%	17	1%	182	10%	359	21%	209	12%	476	76	16%
Southampton	Southampton	3,965	836	21%	63	2%	359	9%	234	6%	603	15%	1,650	306	19%
Tuckahoe	Southampton	1,741	271	16%	13	1%	321	18%	74	4%	344	20%	625	116	19%
Watermill	Southampton	1,724	341	20%	12	1%	57	3%	88	5%	139	8%	681	116	17%
Westhampton	Southampton	2,869	303	11%	36	1%	157	5%	185	6%	364	13%	1,061	189	18%
Westhampton Beach	Southampton	1,902	394	21%	22	1%	146	8%	110	6%	255	13%	824	190	23%
West Hampton Dunes	Southampton	11	5	45%	1	9%	0	0%	0	0%	0	0%	5	0	0%
Southampton Totals		54,027	8,993	17%	485	1%	4,665	9%	3,136	6%	8,358	15%	21,256	4,375	21%
Cutchoque	Southold	2,849	583	20%	15	1%	162	6%	153	5%	387	14%	1,088	214	20%
East Marion	Southold	756	228	30%	7	1%	22	3%	32	4%	119	16%	328	79	24%
Fishers Island	Southold	289	52	18%	3	1%	4	1%	17	6%	22	8%	135	34	25%
Greenport	Southold	2,048	460	22%	8	0%	353	17%	131	6%	342	17%	775	297	38%
Greenport West	Southold	1,679	457	27%	6	0%	100	6%	74	4%	299	18%	750	213	28%
Laurel	Southold	1,188	226	19%	0	0%	28	2%	69	6%	144	12%	445	93	21%
Mattituck	Southold	4,198	802	19%	22	1%	107	3%	278	7%	758	18%	1,655	373	23%
New Suffolk	Southold	337	101	30%	1	0%	12	4%	12	4%	49	15%	170	45	26%
Orient	Southold	709	244	34%	7	1%	7	1%	24	3%	137	19%	335	86	26%
Peconic	Southold	1,081	188	17%	12	1%	39	4%	54	5%	189	17%	452	65	14%
Southold	Southold	5,465	1,415	26%	11	0%	148	3%	257	5%	890	16%	2,343	588	25%
Southold Totals		20,599	4,756	23%	92	0%	982	5%	1,101	5%	3,336	16%	8,476	2,087	25%
Suffolk Totals		1,409,122	166,896	12%	31,990	2%	148,522	11%	85,702	6%	212,822	15%	468,524	71,485	15%

Note: Zero vehicle household data was not available at the split village level (i.e., reflecting villages that are located in more than one town) from the NY State Data Center.

Appendix B

School Transportation Providers in Nassau and Suffolk Counties

Operator	Address	City	Total vehicles
ACME BUS CORP (COPIAGUE)	3355 VETERANS MEMORIAL HWY	RONKONKOMA	180
ACME BUS CORP.	3355 VETERANS MEMORIAL HIGHWAY	RONKONKOMA	213
ACME BUS CORP.	3355 VETERANS MEMORIAL HWY	RONKONKOMA	35
ACME BUS CORP.(W.HAMPTON)	3355 VETRANS MEMORIAL HWY	RONKONKOMAN	60
ACME BUS CORP.(WESTBURY)	3355 VETS HWY.	RONKONKOMA	270
ACME BUS CORP_(MEDFORD)	3355 VETS HWY	RONKONKOMA	196
ADELWERTH BUS CORP.	PO BOX 705	EASTPORT	83
ALPHABETLAND SCHOOL & DAY CAMP	1775 NEW BRIDGE RD	BELLMORE	5
AMAGANSETT U.F.S.D.	MAIN STREET P.O.BOX 7062	AMAGANSETT	5
AMBOY BUS CO. INC.	P.O. BOX 722	EAST SETAUKET	106
AMBOY BUS CO. INC.	44 N. DUNTON AVE	MEDFORD	236
ANY TIME BUS CO. INC.	P.O. BOX 5292	HAUPPAUGE	19
BALDWIN UFSD	HIGH SCHOOL DRIVE	BALDWIN	28
BARRY & FLORENCE FRIEDBERG JJC	15 NEIL COURT	OCEANSIDE	7
BAUMAN & SONS BUSES INC.	859 OLD RIVERHEAD RD.	WESTHAMPTON	1
BAUMANN & SONS BUSES INC (COPIAGUE)	355 VETERANS MEMORIAL HWY	RONKONKOMA	140
BAUMANN & SONS BUSES INC.	3355 VETERANS MEMORIAL HWY	RONKONKOMA	119
BAUMANN & SONS BUSES INC.	3355 VETERANS MEMORIAL HWY	RONKONKOMA	40
BAUMANN & SONS BUSES INC.(WESTBURY)	3355 VETS HWY.	RONKONKOMA	11
BAUMANN & SONS BUSES INC_(MEDFORD)	3355 VETERANS MEMORIAL HWY	RONKONKOMA	2
BAYPORT BLUEPOINT UFSD	189 ACADEMY STREET	BAYPORT	5
BELLMORE MERRICK CENTRAL HIGH SCH.	1260 MEADOWBROOK ROAD	MERRICK	5
BELLMORE UFSD	WINTHROP AVE	BELLMORE	2
BELLMORE UNION FREE SCHOOL DISTRICT	WINTRHOP AVENUE	BELLMORE	1
BELLPORT DAY CARE CENTER	471 ATLANTIC AVENUE	BELLPORT	1
BETHPAGE U.F.S.D.	CHERRY AVENUE	BETHPAGE	7
BIG CHIEF SCHOOL & CAMP	2427 N JERUSALEM AVENUE	EAST MEADOW	16
BOCES #1 OF SUFFOLK	201 SUNRISE HWY.	PATCHOGUE	6
BRIDGEHAMPTON UFSD	MONTAUK HIGHWAY	BRIDGEHAMPTON	2
BRIGHT STAR DAY SCHOOL	3159 ROYAL AVENUE	OCEANSIDE	2
CAMP BAUMANN BUSES INC.	107 LAWSON BLVD.	OCEANSIDE	52
CAMP DEBAUN INC.	465 ATLANTIC AVE.	OCEANSIDE	11
CAMP ST PATRICK SMITHTOWN	280 EAST MAIN STREET	SMITHTOWN	1
CARLE PLACE U.F.S.D.	CHERRY LANE	CARLE PLACE	1
CAROUSEL DAY SCHOOL	9 WEST AVE	HICKSVILLE	33
CASSARA TRANSPORT INC	120 HIGHMEADOW LANE	RIVERHEAD	6
CHABAD OF PORT WASHINGTON	80 SHORE ROAD	PORT WASHINGTON	2
CHAMINADE HIGH SCHOOL	340 JACKSON AVE	MINEOLA	10
CHATTERBOX DAY SCHOOL	52 HAWTHORNE AVENUE	EAST ISLIP	9
CHILDS PLAY OF EAST ISLIP	140 WEST MAIN STREET	EAST ISLIP	1
COMSEWOGUE CSD	290 NORWOOD AVENUE	PORT JEFFERSON STA	2
CONG TIFFERETH ISRAEL	HILL STREET	GLEN COVE	1
CONNETQUOT C.S.D.	780 OCEAN AVENUE	BOHEMIA	131
COURTESY BUS CO	107 LAWSON BLVD	OCEANSIDE	369
CRESTWOOD COUNTRY DAY SCHOOL	313 ROUND SWAMP ROAD	MELVILLE	7
DEER PARK UFSD	101 LAKE AVE	DEER PARK	81
DELL TRANSPORTATION CORP.	20 HAVEN AVE	PORT WASHINGTON	113
E. H. S. C.	PO BOX 7054	AMAGANSETT	2
E.B.I.	152 TOWNLINE RD.	KINGS PARK	89
E.B.T., INC.	50 COURT STREET	COPIAGUE	28
E.O.C. OF NASSAU COUNTY	134 JACKSON STREET (4TH FLOOR)	HEMPSTEAD	8

Operator	Address	City	Total vehicles
EAST MEADOW PUBLIC SCHOOLS	CARMANS AVENUE	EAST MEADOW	1
EAST ROCKAWAY U.F.S.D.	OCEAN AVENUE	EAST ROCKAWAY	4
EAST WILLISTON U.F.S.D.	110 EAST WILLISTON AVE	EAST WILLISTON	8
EDUCATIONAL BUS TRANSPORT	50 COURT STREET	COPIAGUE	311
EDWARD SCHAEFER AND SONS INC.	PO BOX 5057	EASTHAMPTON	26
ELMONT U.F.S.D.	ELMONT ROAD	ELMONT	47
EMANUEL LUTHERAN CHURCH	179 EAST MAIN STREET	PATCHOGUE	2
FARMINGDALE UFSD	50 VANCOTT AVENUE	FARMINGDALE	7
FIRE ISLAND UFSD	SURF ROAD	OCEAN BEACH	11
FIRST STEPS DISCOVERY CEN.	201 OLD TOWN RD PO BOX 821	SETAUKET	4
FIVE TOWNS COMMUNITY CENTER	270 LAWRENCE AVENUE	LAWRENCE	
FLORAL PARK/BELLROSE U.F.S.D.	1 POPPY PLACE	FLORAL PARK	22
FRANKLIN SQUARE SCHOOL DIST.	760 WASHINGTON STREET	FRANKLYN SQUARE	26
FRESH TRANSPORTATION LTD	PO BOX 645	FREEPORT	2
FRIENDS ACADEMY	DUCK POND RD	LOCUST VALLEY	11
GARDEN CITY PUBLIC SCHOOLS	56 CATHEDRAL AVE.	GARDEN CITY	59
GLENCOVE CHILD DAY CARE	CARNEY EXTENSION	GLEN COVE	4
GREAT NECK U.F.S.D.	345 LAKEVILLE ROAD	GREAT NECK	20
GREEN TREES DAY SCHOOL	247 JACKSON AVENUE	SYOSSET	5
GREENPORT PUBLIC SCHOOLS	FRONT STREET	GREENPORT	1
HALF HOLLOW HILLS C.S.D.	BURRS LANE	DIX HILLS	99
HAPPY HOME CHILD CARE LTD	879 WEST GOLF STREET	BOHEMIA	
HARBOR DAY CARE CENTER	93 CENTRAL AVE	SEA CLIFF	8
HAUPPAUGE UFSD	600 TOWNLINE ROAD	HAUPPAUGE	13
HENDRICKSON BUS CORP.	64 BAYVILLE AVE.	BAYVILLE	106
HENRY VISCARDI SCHOOL	201 I.U. WILLETS RD	ALBERTSON	2
HERMON E. SWEZEY CO. INC.	44 KREAMER STREET	BELLPORT	84
HERRICKS UNION FREE SCHOOL DISTRICT	HERRICKS ROAD	NEW HYDE PARK	21
HEWLETT WOODMERE UFSD	1 JOHNSON PLACE	WOODMERE	3
HICKORY HILL DAY SCHOOL	163 CENTRAL PARK ROAD	PLAINVIEW	12
HICKSVILLE PUBLIC SCHOOL	DIVISION AVENUE	HICKSVILLE	3
HIGH HELLO CHILD DAY CARE CENTER	212 S OCEAN AVE	FREEPORT	2
HOFSTRA UNIVERSITY	117 HEMPSTEAD TPKE	HEMPSTEAD	2
HOLY CROSS H.S.	26-20 FRANCIS LEWIS BLVD	FLUSHING	5
HUNTER AMBULETTE	28 SHERIDAN BLVD.	INWOOD	
HUNTINGTON COACH CORP.	100 DEPOSIT ROAD	EAST NORTHPORT	45
HUNTINGTON COACH CORP.	81 WEST 4TH STREET	HUNTINGTON STATION	127
HUNTINGTON COACH LLC	100 DEPOSIT ROAD	EAST NORTHPORT	43
HUNTINGTON COACH LLC	81 WEST 4TH STREET	HUNTINGTON STATION	101
INDEP.TRANSP. OF HANDICAPPED I	26 N. BERNSTEIN BLVD.	MANORVILLE	
INDEPENDENT COACH CORP	25 WANSER AVE	INWOOD	199
INDEPENDENT COACH CORP	1145 RAILROAD AVE	HEWLETT	120
ISLAND PARK U.F.S.D.	TRAFAGAR BLVD.	ISLAND PARK	12
IVY LEAGUE SCHOOL INC.	211 BROOKSITE DRIVE	SMITHTOWN	2
JACK & JILL MONTESSORI SCHOOL	23 FRONT STREET	EAST ROCKAWAY	3
JACO TRANSPORTATION INC	42 EAST CARL STREET	HICKSVILLE	124
JERICO PUBLIC SCHOOLS	99 CEDAR SWAMP RD.	JERICO	6
JOHN BOSCH INC.	243 DEER PARK AVENUE	BABYLON	45
K CORR INC.	1620 NEW HIGHWAY	FARMINGDALE	154
KELLENBERG MEMORIAL HIGH SCHOOL	1400 GLEN CURTIS BLVD.	UNIONDALE	14
KIDD CABB PLUS INC	295 HORSEBLOCK ROAD	FARMINGVILLE	

Operator	Address	City	Total vehicles
KIDDIE ACADEMY	7 FLOWERFIELD SUITE 44	ST. JAMES	2
KIDDIE ACADEMY OF HICKSVILLE	124 KELLOGG STREET	OYSTER BAY	2
KIDDIE ACADEMY OF LYNBROOK	290 BROADWAY	LYNBROOK	1
KIDDIE ACADEMY OF SYOSSET	60 IRA RD	SYOSSET	2
KIDS BY THE BUNCH DBA TUTOR TIME	49 FOREST AVE	GLEN COVE	4
KINDER CARE LEARNING CENTER	356 TERRYVILLE ROAD	PORT JEFFERSON STA	2
KINGS PARK C.S.D.	38 LAWRENCE ROAD	KINGS PARK	57
KIPS BAY BOY & GIRLS CLUB	1830 RANDELL AVENUE	BRONX	1
L. I. LUTHERAN MIDDLE & HIGH SCHOOL	131 BROOKVILLE ROAD	BROOKVILLE	4
LAIDLAW	P.O.BOX 932, 82 RTE. 25A	SHOREHAM	145
LAIDLAW	34 ARTHUR AVE	BROOKHAVEN	58
LAIDLAW	251 NORTH MAIN ST	FREEPORT	265
LAIDLAW	445 WEST JOHN STREET	HICKSVILLE	238
LAIDLAW	70 SCHLEIGEL BLVD	AMITYVILLE	74
LAIDLAW (CENTERMORICHES)	PO BOX 1287	CENTER MORICHES	258
LAIDLAW (917 MIDDLE ISLAND)	PO BOX 932-82 ROUTE 25A	SHOREHAM	63
LEVITTOWN PUBLIC SCHOOLS	3816 HUNT ROAD	WANTAGH	86
LOCUST VALLEY CSD	60 RYEFIELD ROAD	LOCUST VALLEY	28
LONG BEACH PUBLIC SCHOOLS	659 LIDO BLVD.	LONG BEACH	68
LONG ISLAND UNIVERSITY	MONTAUK HGHY.	SOUTH HAMPTON	2
MALVERNE UFSD	WICKS LANE & OCEAN AVE	MALVERNE	1
MANHASSET PUBLIC SCHOOLS	200 MEMORIAL PLACE	MANHASSET	
MANHASSET/GREAT NECK HEAD START	65 HIGH STREET	MANHASSET	1
MAPLEWOOD NURSERY SCHOOL	2166 WANTAGH AVENUE	WANTAGH	27
MASSAPEQUA PUBLIC SCHOOLS	4929 MERRICK ROAD	MASSAPEQUA	1
MATTITUCK-CUTCHOGUE UFSD	BOX 1438 ROUTE 25	MATTITUCK	9
MCCOY BUS INC.	MONTAUK HIGHWAY	BRIDGEHAMPTON	25
MEROKEE DAY SCHOOL	10 WYNSUM AVENUE	MERRICK	6
MERRICK UFSD	21 BABYLON ROAD	MERRICK	4
MERRICK WOODS DAY SCHOOL	1075 MERRICK AVE	MERRICK	15
MID ISLAND YJCC	45 MANETTO HILL ROAD	PLAINVIEW	11
MIDDLE COUNTRY C.S.D.	25 NORTH BICYCLE PATH	SELDEN	89
MILL NECK MANOR LUTHERAN SCHOOL	BOX 12 FROST MILL RD	MILL NECK	1
MILLER PLACE PUBLIC SCHOOL	191 N. COUNTRY ROAD	MILLER PLACE	2
MINEOLA UFSD	400 WASHINGTON AVE.	GARDEN CITY	46
MISS SUES NURSERY SCHOOL	11-91 OLD COUNTRY ROAD	PLAINVIEW	22
MONTAUK BUS SERVICE INC.	209 WADING RIVER ROAD	CENTER MORICHES	195
MORRISS CENTER SCHOOL	BUTTER LANE PO BOX 604	BRIDGEHAMPTON	2
N. BELLMORE SCHOOLS UFSD	2616 MARTIN AVE	BELLMORE	4
NASSAU BOCES	100 HASKETT DRIVE	SYOSSET	80
NEW HYDE PARK U.F.S.D.	1950 HILLSIDE AVE	NEW HYDE PARK	5
NEW SUFFOLK SCHOOL DISTRICT	MAIN ROAD	NEW SUFFOLK	1
NORTH BABYLON UFSD	5 JARDINE PLACE	NORTH BABYLON	90
NORTH MERRICK UFSD	1775 OLD MILL RD	NORTH MERRICK	3
NORTH SHORE DAY SCHOOL	CRESCENT BEACH RD	GLEN COVE	18
NORTHPORT/EAST NORTHPORT UFSD	110 ELWOOD ROAD	NORTHPORT	15
NORTHSHORE CSD	112 FRANKLIN AVENUE	SEA CLIFF	31
OUR LADY OF MERCY	815 CONVENT ROAD	SYOSETT	2
PARKSHORE SCHOOL & DAY CAMP	450 DEER PARK AVENUE	DIX HILLS	15
PAT KAM TRANSPORTATION	705 NASSAU RD	UNIONDALE	3
PATCHOGUE MEDFORD CSD	241 SOUTH OCEAN AVENUE	PATCHOGUE	7

Operator	Address	City	Total vehicles
PEE WEE FOLK	166 SOUTH 8TH ST.	LINDENHURST	2
PIERCE COACH LINES	MINEOLA AVENUE	ROSLYN	102
PIERCE COUNTRY DAY SCHOOL & CAMP	MINEOLA AVENUE	ROSLYN	32
PLAINEDGE U.F.S.D.	241 WYNGATE DRIVE	NORTH MASSAPEQUA	44
PLAINVIEW OLD BETH PAGE CSD	106 WASHINGTON AVE.	PLAINVIEW	3
PORT WASHINGTON U.F.S.D.	100 CAMPUS DRIVE	PORT WASHINGTON	4
PORTLEDGE SCHOOL INC.	355 DUCK POND RD.	LOCUST VALLEY	2
RAYBERN BUS SERVICE	91 BAITING PLACE ROAD	FARMINGDALE	158
RED ROBIN COUNTRY DAY SCHOOL	878 JERICO TPKE	WESTBURY	8
RED ROBIN EAST DAY CAMP	184 MAIN ST	CENTER MORICHES	2
RIVERHEAD C.S.D.	700 OSBORNE AVENUE	RIVERHEAD	106
ROBINHOOD COUNTRY DAY SCHOOL	PO BOX 257	GREENVALE	24
ROCKVILLE CENTER SCHOOLS	128 SHEPHARD STREET	ROCKVILLE	3
ROLLING RIVER DAY SCHOOL CAMP INC	477 OCEAN AVENUE	EAST ROCKAWAY	3
ROMPER ROOM NURSERY	133 HILLSIDE AVENUE	WILLISTON PARK	10
ROSA LEE YOUNG CHILDHOOD CENTER	180 NORTH VILLAGE AVE	ROCKVILLE CENTER	1
ROSLYN U.F.S.D.	ROUND HILL ROAD	ROSLYN HEIGHTS	62
ROSS SCHOOL	118 GOODFRIEND DRIVE	EAST HAMPTON	3
ROY K. DAVIS BUS	100 DEPOSIT ROAD	EAST NORTHPORT	176
ROY K. DAVIS BUS	81 WEST 4TH STREET	HUNTINGTON STATION	84
SACHEM CENTRAL SCHOOL DIST.	51 SCHOOL STREET	LAKE RONKONKOMA	32
SALVATION ARMY HEMPSTEAD DAYCARE CT	65 ATLANTIC AVE	HEMPSTEAD	1
SAMUEL FIELD YM-YWHA	58-20 LITTLE NECK PARKWAY	LITTLE NECK	10
SHANNON TRANSPORTATION	15 WEST HILLS ROAD	HUNTINGTON STATION	12
SHIBLEY SUMMER DAY CAMP	PO BOX 333 / ATTN ROBERT DUTCH	ROSLYN	14
SHOREHAM WADING RIVER C.S.D.	ROUTE 25A	SHOREHAM	3
SMITHTOWN C.S.D.	26 NEW YORK AVENUE	SMITHTOWN	14
SMITHTOWN GOSPEL TABERNACLE	HIGBIE DRIVE	SMITHTOWN	3
SOUTH COUNTRY CSD	189 DUNTON AVENUE	EAST PATCHOGUE	24
SOUTH HUNTINGTON U.F.S.D.	24 HARDING PLACE	SOUTH HUNTINGTON	83
SOUTH SHORE COUNTRY DAY SCHOOL	1149 NEWBRIDGE RD	N BELMORE	9
SOUTHAMPTON PUBLIC SCHOOLS	70 LELAND LANE	SOUTHAMPTON	49
SOUTHOLD UFSD	OAKLAWN AVENUE	SOUTHOLD	7
ST. ANTHONYS HS	275 WOLF HILL ROAD	SOUTH HUNTINGTON	8
ST. DOMINIC R C C	110 ANTICE STREET	OYSTER BAY	6
ST. JOHN THE BAPTIST DIOCESAN H.S.	1170 MONTAUK HWY	WEST ISLIP	3
ST. MARYS H.S.	51 CLAPHAM AVE	MANHASSET	8
SUBURBAN BUS TRANSP.	1881 NEWBRIDGE RD.	BELLMORE	48
SUBURBAN CHILDREN INC	1377-5TH AVE	BAYSHORE	2
SUFFOLK BUS CORP	1980 POND ROAD	RONKONKOMA	92
SUFFOLK BUS CORP.	10 MOFFITT BLVD.	BAYSHORE	45
SUFFOLK TRANSP. SERVICE	10 MOFFIT BLVD	BAYSHORE	688
THE HAPPY MONTESORI SCHOOL	40 PLEASANT AVE	PORT WASHINGTON	2
THE KNOX SCHOOL	541 LONG BEACH RD.	ST. JAMES	3
THE STONYBROOK SCHOOL	ROUTE 25A	STONY BROOK	10
TOWNE BUS (FLORAL PARK)	75 COMMERCIAL BLVD	PLAINVIEW	26
TOWNE BUS CORP	FLOWERFIELD GYRODINE BLD. 25	SAINT JAMES	18
TOWNE BUS CORP	1400 LINCOLN AVE	HOLBROOK	90
TOWNE BUS CORP	875 WAVERLY AVE.	HOLTSVILLE	29
TOWNE BUS CORP.	190 SOUTHFEHRWAY	BAYSHORE	89
TOWNE BUS CORP._(PLAINVIEW)	75 COMMERCIAL BLVD.	PLAINVIEW	158

Operator	Address	City	Total vehicles
TOWNE BUS LLC	875 WAVERLY AVE.	HOLTSVILLE	121
TRAVELING IN STYLE INC.	52-54 MERRICK ROAD	MASSAPEQUA	3
TRINITY LUTHERAN SCHOOL	40 WEST NICHOLI STREET	HICKSVILLE	2
TUTOR TIME - NEW HYDE PARK	1619 JERICHO TPKE	NEW HYDE PARK	1
TUTOR TIME ACQUISTION LLC	3062R HEMPSTEAD TURNPIKE	LEVITTOWN	2
TUTOR TIME CHILD CARE LEARNING	1305 SUFFOLK AVENUE	ISLANDA	4
TUTOR TIME OF BALDWIN	2856 MILBUEN AVE	BALDWIN	1
TUTOR TIME OF MIDDLE ISLAND	700-49 PATCHOGUE YAPHANK RD	MEDFORD	2
TUTOR TIME-ECONOMIC OPPORTUNITY COU	475 EAST MAIN ST., SUITE 206	PATCHOGUE	1
TWIN OAKS COUNTRY DAY SCHOOL	458 BABYLON TPK	FREEPORT	17
UNIONDALE UFSD	933 GOODRICH ST	UNIONDALE	1
UNITED BUS CORP.	9 OLD MIDDLE COUNTRY RD.	CORAM	1
UPPER ROOM CHRISTIAN SCHOOL	722 DEER PARK ROAD	DIX HILLS	3
VARIETY PRE-SCHOOLER'S WORKSHOP	47 HUMPHRYE DRIVE	SYOSSETT	1
VETERANS TRANSPORTATION	3 CLEVELAND STREET	VALLEY STREAM	1
WALDORF SCHOOL OF GARDEN CITY, THE	225 CAMBRIDGE AVE	GARDEN CITY	1
WANTAGH U.F.S.D.	3301 BELTAGH AVENUE	WANTAGH	3
WE TRANSPORT INC	FLOWERFIELD GYRODINE BLD 25	SAINT JAMES	20
WE TRANSPORT INC	1400 LINCOLN AVENUE	HOLBROOK	56
WE TRANSPORT INC.	875 WAVERLY AVE.	HOLTSVILLE	8
WE TRANSPORT INC.	190 SOUTH FEHRWAY	BAYSHORE	140
WE TRANSPORT INC. (FLORAL PARK)	75 COMMERCIAL BLVD	PLAINVIEW	40
WE TRANSPORT INC.(PLAINVIEW)	75 COMMERCIAL BLVD.	PLAINVIEW	194
WE TRANSPORT L. P.	50 COMMERCIAL ST	PLAINVIEW	32
WE TRANSPORT L. P.	1400 LINCOLN AVENUE	HOLBROOK	35
WE TRANSPORT L.P.	FLOWER FIELD GYRODINE BLDG 25	ST JAMES	11
WE TRANSPORT LP(PLAINVIEW)	75 COMMERCIAL BLVD	PLAINVIEW	37
WEST BABYLON SCHOOLS	130 NILL STREET	WEST BABYLON	63
WEST HILLS DAY CAMP	21 SWEET HOLLOW ROAD	HUNTINGTON	3
WEST HILLS MONTESSORI SCHOOLS	145 PIDGEON HILL RD.	HUNTINGTON STA	3
WEST ISLIP U.F.S.D.	HIGBIE LANE	WEST ISLIP	19
WESTCHESTER COMM. OPPORTUNITY PROG.	2269 SAW MILL RIVER ROAD	ELMSFORD	
WILLOW BUS SERVICE	MINEOLA AVENUE	ROSLYN	5
WOODBURY LIMOUSINE SERVICE INC.	26 AZALEA DRIVE	SYOSSET	
WOODEN SHOE NURSERY SCHOOL	1049 HUNTER AVE	VALLEY STREAM	4
WYANDANCH U.F.S.D.	MOUNT AVENUE	WYANDANCH	37

Appendix C

Trip Generators and Attractors

**Apartment Complexes of 10 or More Units
Nassau County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
TOWN OF GC APARTMENT COMPLEXES							
Glen Cove	---	17-21 McLoughlin St.& Mechanic	12			<1964	
Glen Cove	---	167 Glen Cove Ave.	32			<1970	
Glen Cove	---	135 Glen Cove Ave.	21			<1970	
Glen Cove	Avalon at Glen Cove South	2 Pratt Blvd.& Continental Pl.	256			2003	
Glen Cove	Dickson Garden Apts.	82-92 McLoughlin St.	24	676-0324		<1964	
Glen Cove	Glen Arms	21,31,33 Brewster St.	184	759-9210		1973 E	
Glen Cove	Glen Mill Apts.	Stephan Oval & Woolsey Ave.	108			<1964	
Glen Cove	Strathaven Apts.	Hendrick Ave.	16			<1970	
Total for Town of GC (8 complexes):			653				
TOWN OF HE APARTMENT COMPLEXES							
Baldwin	---	21 Old Mill Rd. & Central Ave.	29			1967 E	
Baldwin	---	21 Edna Court	12			<1964	
Baldwin	Baldwin Gardens	2363 Grand Ave. & Prospect St.	159	764-6060		<1964	
Baldwin	Baldwin Hall	714 School St.	25			<1964	
Baldwin	Baldwin Manor Apts.	700 Merrick Rd.	46			<1964	
Baldwin	Brookhall Apts.	725 Baldwin Ave. & Brookside	13			<1964	
Cedarhurst	Cedarhurst Apts.	59 Columbia Ave.	14			<1963	
Cedarhurst	Cedarhurst Gardens	97 Cedarhurst Ave.& Central Av	45			<1963	
Cedarhurst	Colonial Gardens	272-300 Cedarhurst Ave. & Park	45			<1963	PROPCOOP
Cedarhurst	Park Terrace	232-238 Cedarhurst Ave.	51			<1963	
Cedarhurst	Washington Gardens	202-218 Washington Ave.	59			<1963	
E Garden City	(Part of Roosevelt Raceway site)	Merchants Concourse & Corp. Dr	317		UC	2004	
E Meadow	---	680 Evelyn Ave.	10			<1982	
E Meadow	Heritage Square	425 Newbridge Rd.	80	826-9685		<1982	
E Meadow	Mitchel Manor (Military)	Mitchell Ave. & Front St.	633	542-0470		1955	
E Rockaway	Carol Arms	450 Atlantic Ave. & Phipps Ave	34			<1964	
E Rockaway	Davison Court Apts.	34-40 Ocean Ave. & Atlantic Av	89			<1964	
E Rockaway	Five Towns Apts.	419 Atlantic Ave. & Scranton	80			<1964	
E Rockaway	Rocklyn Gardens	230 Atlantic Ave.	69			<1964	
Floral Park	---	62 Tulip Ave.	18			<1964	
Floral Park	---	40 Woodbine Court	10			1967 E	
Floral Park	---	26-34 Carnation Ave.& Adelaide	12			<1964	
Floral Park	---	1 Depan Ave.	27			1997	SRCIT
Floral Park	Colonial Court Apts.	66-70 Tulip Ave.	64			<1964	
Floral Park	Floral Gardens	33-47 Floral Blvd. & Carnation	36			<1964	APTCONV
Floral Park	Floral Park Town House	1 Childs Ave. & Atlantic Ave.	16			1967 E	
Floral Park	King Arms	60 Plainfield Ave.	21			<1964	
Floral Park	St. Hedwig's Gardens	8 Linden Ave.	27	486-1000		1998	SRCIT
Franklin Square	---	15 Franklin St.	10			<1970	
Franklin Square	Renken Apartments	1140 Hempstead Tpke.	48	352-4252		1990	SRCITCONG
Freeport	---	25 Graffing Pl.	12			<1964	
Freeport	---	116 W. Merrick Rd.	32			<1964	
Freeport	---	96 Smith St.	12			<1964	
Freeport	---	155 Pine St.	14			1967 E	
Freeport	---	287 W. Merrick Rd.	40			1973 E	
Freeport	---	95 Broadway	18			<1964	
Freeport	---	1 Jay St. & 33 Grand Ave.	12			<1964	
Freeport	---	231 W. Merrick Rd.	34			1973 E	
Freeport	---	136 Smith St.	16			<1964	
Freeport	---	95 N. Columbus Ave.	24			<1964	
Freeport	---	171, 175 S Bayvw, 295 W Merick	62			1973 E	
Freeport	---	40 Graffing Pl.	20			1973 E	
Freeport	---	100 Randall Ave. & Wallace St.	44			<1964	
Freeport	---	30 Brooklyn Ave.	14			1973 E	
Freeport	---	107 Broadway & Mount Ave.	10			<1964	
Freeport	---	180 S. Grove St. & Rose	22			1973 E	
Freeport	---	180 Guy Lombardo Ave. & Smith	24			>1970,<1980	

**Apartment Complexes of 10 or More Units
Nassau County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
Freeport	Bayview Apts.	125 S. Bayview Ave.	36			<1964	
Freeport	Beaux Arts	35 N. Long Beach Ave.& Russell	43			<1964	
Freeport	Bergen Place Apts.	75 Randall Ave. & N. Bergen Pl	30			<1964	
Freeport	Buckingham, The	124 Smith St. & S. Grove St.	53			<1964	PROPCOOP
Freeport	Cameo Apts.	52 Russel Pl.	60			<1964	
Freeport	Carlton House	194 Smith St.	65			<1964	
Freeport	Continental House	55 S. Bergen Pl. & Pine St.	45			<1964	
Freeport	Country Club Manor	250 W. Merrick Rd.	84			<1964	PROPCOOP
Freeport	Edgewood, The	88 S. Bergen Pl.	56			<1964	
Freeport	Edison Hall Apts.	56 Broadway	25			<1964	
Freeport	Elegante, The	30 Wallace St.	68			<1964	
Freeport	Freeport Gardens	150-160 Smith St. & Ocean Ave.	54			<1964	
Freeport	Freeport Hall	200 W. Merrick Rd.	50			<1964	
Freeport	Grove Court	128, 132 S. Grove St.	50			<1964	
Freeport	Grove Gardens	44 N. Grove St.	83	378-4422		<1964	
Freeport	Harthe Arms	75 Graffing Pl. & Grand Ave.	21			<1964	
Freeport	Hawthorne Apts.	133-159 Smith St.	80			<1964	
Freeport	Imperial House	76 S. Bergen Pl. & Pine St.	82			<1964	
Freeport	Lanai	190 W. Merrick Rd.	65			<1964	
Freeport	Lexington, The	48 S. Long Beach Ave.& Pine St	39			<1964	
Freeport	Mayfair	56 N. Long Beach Ave.& Randall	34			<1964	
Freeport	Ocean Garden Apts.	109-127 Pine St. & S.Ocean Ave	44			<1964	
Freeport	Pine Apts.	178 Pine St. & S.Long Beach Av	24			1973 E	
Freeport	Pine Court Apts.	148 Pine St.	38			<1964	
Freeport	Pine Hall	164 Pine St.	33			<1964	
Freeport	Plaza West	Sunrise Hwy. & RR Station	235		UC	2005	
Freeport	Randall House	40 Randall Ave. & N. Ocean Ave	75	223-8833		<1964	
Freeport	Randall Management	20 Randall Ave. & N. Main St.	86			<1964	
Freeport	Rosewood Gardens	145 Randall Ave.& N.Long Beach	30			<1964	
Freeport	South Shore Apts.	98 Rose St.	34			<1964	
Freeport	Town House	30 N. Long Beach Ave. & Bklyn	66			<1964	
Freeport	Wembleton Court Apts.	22 Pearsall Ave.	34			<1964	
Freeport	Wilshire House	45 Broadway & Harding Pl.	60			<1964	
Freeport	Wilshire House	45 Broadway & Harding Pl.	60			<1964	
Garden City	---	222 7th St.	24			<1964	
Garden City	Hampshire House	111 7th St.	54			<1964	
Hempstead	---	125-141 Terrace Ave.	54			<1964	
Hempstead	---	100,150 Washington St.& Fulton	447	292-0040		1967 E	
Hempstead	---	21 Lincoln Blvd.& Lafayette Av	15			<1964	
Hempstead	---	25-27 Penninsula Blvd.	14			<1964	
Hempstead	---	40-44 W. Columbia St.	24			<1985	
Hempstead	---	60 Hendrickson Ave. & Front St	32			1973 E	
Hempstead	---	67 Terrace Ave.	90			<1964	
Hempstead	---	271 Washington St. & Morton Av	15			<1964	
Hempstead	---	298 Main St.	12			<1964	
Hempstead	---	151 W. Columbia St.& Washingtn	16			1960	
Hempstead	---	43 Burr Ave. & Washington St.	14			>1970,<1980	
Hempstead	---	577 Fulton Ave.	32			<1964	
Hempstead	---	545 Fulton Ave.& California Av	15			<1964	
Hempstead	---	5 Lafayette Ave.	12			<1964	
Hempstead	---	90 Maple, 43 Evans & 30 Linden	30			1981 E	
Hempstead	---	20 Villa Court	20			1967 E	
Hempstead	---	27 Attorney St.	20			1973 E	
Hempstead	---	145 Terrace Ave. & Atlantic Av	43			<1964	
Hempstead	---	55 Nassau Pl. & Front St.	14			>1970,<1979	
Hempstead	---	108 Grove St.	12			<1964	
Hempstead	---	115-119 Terrace Ave. & Bedell	48			<1964	
Hempstead	---	11 Bedell St.	17			<1964	
Hempstead	---	193 Washington St.	22			1967 E	
Hempstead	---	50 Webb Ave. & Washington St.	30			<1964	
Hempstead	---	8-26 Bedell St. & 91-109 Ter.	92			<1964	
Hempstead	---	330 Washington St. & Lincoln	14			<1964	
Hempstead	---	61-73 Hilbert St. & Fulton Ave	16			<1964	

**Apartment Complexes of 10 or More Units
Nassau County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
Hempstead	---	30 Hilton Ave.	17			>1970,<1979	
Hempstead	---	45 Jackson St. & Terrace Ave.	82			<1964	
Hempstead	---	757-775 Front St. & Courtenav	12			1973 E	
Hempstead	---	360 Washington St.	12			<1964	
Hempstead	---	77 Terrace Ave.	32			1973 E	
Hempstead	---	357 Jackson St.	32			<1964	
Hempstead	---	269 Elmwood Ave.& Greenwich St	12			<1964	
Hempstead	Adams Court	12, 24, 36 Grove St.	54	489-8133		1981 E	
Hempstead	Alexander, The	565 Fulton Ave.	60			<1964	
Hempstead	Alison Apts.	105-115 Long Beach Rd. & Brown	19			<1964	
Hempstead	Ambassador Apts.	41-43 High St. & Orchard St.	26			<1964	
Hempstead	Bennett Gardens	15-35 Elk St. & Bennett Ave.	84			<1964	
Hempstead	Cameo House	485 Front St.	80			<1964	
Hempstead	Cathedral Apts.	10-14 Cathedral Ave.	24			<1964	
Hempstead	Clinton Gardens	25 Jackson St. & Clinton & Elk	206	483-9290		<1964	
Hempstead	Colonial Gardens	299 Jackson St. & Clinton St.	112			<1964	
Hempstead	Colony House	54 Greenwich St.	65			<1964	
Hempstead	Gables, The	266 Washington St. & Vancott	12			<1964	
Hempstead	Garden Town House	35 Seitz Ave. & Washington St.	16			1967 E	
Hempstead	Garden View Apts.	115 Atlantic Ave. & Wendell St	39			<1964	
Hempstead	Greenwich Gardens	155 Greenwich St. & Cruikshank	294	489-5480		1977	SR CIT
Hempstead	Hampshire House	100 Jerusalem Ave.	95			<1964	
Hempstead	Hayes House, The	6 Sealey Ave. & Atlantic Ave.	66			<1964	
Hempstead	Hempstead Manor	555 Front St.	54			<1964	
Hempstead	Hilbrae House	651 Front St.	22			1967 E	
Hempstead	Hilton Terrace	50 Jackson St. & Terrace Ave.	210	485-1337		1967 E	
Hempstead	Hofstra Gardens	599 & 621 Front St.	132			<1964	
Hempstead	House Beautiful Apts.	380 Front St. & Clinton St.	121			1973 E	
Hempstead	Jackson Terrace	100 Terrace Ave. & Jackson St.	420			1973 E	
Hempstead	Jeffrey Apts.	270 Baldwin Rd. & Lawson St.	15			1973 E	
Hempstead	Kensington Apts.	180 Hilton Ave.	41			<1964	
Hempstead	Lord Sterling	13 St. Pauls Rd. & Fulton Ave.	78			<1964	
Hempstead	Marlboro Gardens	25 Hendrickson Ave.	16			<1964	
Hempstead	Martin Luther King Apts.	Martin Luther King Dr.	240	565-2657		<1964	
Hempstead	New Haven Place	451 Fulton Ave. & Elk St.	346	292-6071		<1964	
Hempstead	Phillips House	482 Front St.	44			<1964	
Hempstead	Rivoli House	145 Main St. at Columbia	112			1997	SR CIT
Hempstead	Robert Fulton Apts.	51 Bell St.	27			<1964	
Hempstead	Stafford Apts.	160 Hilton Ave.	60			<1964	
Hempstead	Surrey Gardens	548-556 Fulton Ave.	20			<1964	
Hempstead	Tandon Town House	95 Jerusalem Ave.	22			1967 E	
Hempstead	Town House, The	10 Washington St. & Peninsula	66			<1964	
Hempstead	Twin Oaks	7 & 21 Manor Ave. & Fulton Ave	94			<1964	
Hempstead	University House No. 1	600 Fulton Ave. & Hendrickson	216	485-1700		1967 E	
Hempstead	University House No. 2	590 Fulton Ave.	120	486-1281		1967 E	
Hempstead	Villa Court	38-50 Villa Court	132			<1964	
Hempstead	Washington Town House	190 Washington St.	22			1967 E	
Hempstead	Wheatley Apts.	1 Lincoln & 350 Washington St	25			<1976	
Hewlett	---	16 New St.	12			<1963	
Hewlett	---	1240 W. Broadway	13			<1963	
Hewlett	---	1445-1449 Broadway	18			<1963	
Hewlett	Hewlett Manor	1175,1185 E. Broadway	50			<1963	
Hewlett	Seawane Greens	63-69 Prospect Ave.	102	593-9447		<1964	
Island Park	---	71 Nassau La.	16			<1964	
Island Park	---	61 Quebec Rd.	24			1962 E	
Island Park	Island Parkway Apts.	8 Island Parkway & Beach Way	26			<1964	
Levittown	---	Kensington La.& Hicksville Rd.	80			<1970	
Levittown	---	34-48 Longfellow Ave.	42			>1970,<1980	
Levittown	Cambridge Village at Levittown	43-87 Old Oak La. & Acorn La.	78	579-4212		<1970	
Levittown	James Garden Apts.	3174-3181 Brixton La.	28			<1970	
Levittown	Levittown Gardens	100-112 Division Ave.	50			<1970	
Lynbrook	---	1-5 Duryea Pl. & Broadway	18			1959	
Lynbrook	---	2A & 2B Duryea Pl. & Broadway	12			1959	

**Apartment Complexes of 10 or More Units
Nassau County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
Lynbrook	---	151 Union Ave.	51			1967 E	
Lynbrook	---	30 Shipherd Ave.	18			<1964	PROPCOOP
Lynbrook	---	260 Broadway	14			<1964	
Lynbrook	Alexander Hamilton	477 Merrick Rd. & Curtis Pl.	26			<1964	
Lynbrook	Colonnade, The	210 Atlantic Ave.	97	599-5696		<1964	
Lynbrook	Doral Apts.	121 Vincent Ave.& Shipherd Ave	18			<1964	
Lynbrook	Lynbrook Terrace	504 Merrick Rd.	60			<1964	
Lynbrook	Penbrook House	60 Hempstead Ave. & Peninsula	63	887-4117		<1964	
Lynbrook	Putnam, The	145 Broadway	12			<1964	
Lynbrook	Robbin Apts.	148 Broadway & Oakland Ave.	16			1961	
Malverne	---	34-40 Church St.	22			<1964	
N Bellmore	Manor Garden Apts.	2625 Jerusalem Ave. & Bellmore	24			1973 E	
N Bellmore	North Bellmore Garden Apts.	2521 Jerusalem Ave.	14			1973 E	
Oceanside	Ocean Crest Apts.	3231-3251 Royal Ave.	24			<1970	
Oceanside	Oceancrest	2930 Rockaway Ave.	105	536-6109		1962, 1979	
Oceanside	Summit Garden Apts.	2800 Davis Street	15			<1964	
Oceanside	Terrace Gardens	491 Merrick Rd.	52			<1964	
Rockville Ctr	---	80-84 Lincoln Ave.	14			1967 E	
Rockville Ctr	---	2-8 S. Marion Pl. & Merrick Rd	29			1967 E	
Rockville Ctr	---	195 N. Centre Ave. & 70 Maine	36			1985	
Rockville Ctr	---	90 Ongley St.	12			<1964	
Rockville Ctr	---	181 Maple Ave.	40			<1964	
Rockville Ctr	---	77 S. Park Ave. & Lincoln Ave.	52			1971	
Rockville Ctr	---	555 Merrick Rd.	32			1973 E	
Rockville Ctr	---	55 Windsor Ave. & S.Village Av	52			1951	
Rockville Ctr	---	11 Park Pl. & 97 S. Park Ave.	16			<1964	
Rockville Ctr	---	30 Lenox Rd.	38			<1964	
Rockville Ctr	---	1 N. Forest Ave. & Merrick Rd.	12			1973 E	
Rockville Ctr	---	70 Lincoln Ave.	35			<1964	
Rockville Ctr	---	2-6 Windemere Pl. & Lenox Rd.	12			<1964	
Rockville Ctr	---	77 Lenox Rd. & Davison Pl.	36			1967 E	
Rockville Ctr	Bryn Mawr Court	275 Maple Ave.	36			<1964	
Rockville Ctr	Carol Gardens	43 N. Forest Ave.	35			<1964	
Rockville Ctr	Forest House, The	145 Maple Ave.	32			<1964	
Rockville Ctr	Grant House	55 Grand Ave.	48			<1962	
Rockville Ctr	Jefferson Park	1 Jefferson Ave. & Maple Ave.	125			1948	
Rockville Ctr	Lenox House	31 Lenox Rd.	40			<1964	
Rockville Ctr	Maple Apts.	175 Maple Ave.	15			<1964	
Rockville Ctr	Montauk Gardens	32-40 N. Long Beach Rd.	35			<1964	
Rockville Ctr	Norwood, The	195 N. Village Ave.	76	764-1400		<1964	
Rockville Ctr	Paul Apts.	471 Merrick Rd.& N. Kensington	25			<1964	
Rockville Ctr	Rockville Hall Apts.	59 S. Centre Ave. & S. Village	29			<1964	
Rockville Ctr	Suburban, The	91-99 Grand Ave. & Morris Ave.	52	766-7159		<1964	
Rockville Ctr	Town House	45 Grand Ave.	20			<1964	
Rockville Ctr	Twin Oaks Lodge Apts.	75 Maine Ave. & N. Village Ave	21			<1964	
Rockville Ctr	Village	350 Merrick Rd. & Davison Pl.	82			1953	
S Valley Stream	Green Acres	98-306 Green Acres Rd.	300	791-6868		<1964	
Seaford	Marra Homes	3760 Jerusalem Ave.	25			<1976	
Stewart Manor	Stewart Manor Gardens	134-150 Covert St. & Tulip Ave	48			<1964	
Uniondale	Sunset House	1140 Front Street	67			<1970	
Valley Stream	---	464 N. Corona Ave.	12			1973 E	
Valley Stream	---	64 Gibson Blvd.	12			1973 E	
Valley Stream	---	460-470 Rockaway Ave.	12			1977 E	
Valley Stream	---	133 Dubois Ave. & Gibson Blvd.	11			1973 E	
Valley Stream	---	75 Gibson Blvd. & Poplar St.	10			<1964	
Valley Stream	---	35 Brooklyn Ave. & 5th St.	24			<1964	
Valley Stream	---	303,315 N. Central Ave.	26			1973 E	
Valley Stream	---	400 N. Corona Ave.	20			1967 E	
Valley Stream	---	95-99 S. Grove St. & Jamaica	48			<1964	
Valley Stream	Ballard Gardens	12 Ballard Ave. & Merrick Rd.	43			<1964	
Valley Stream	Cedar Ridge Terrace Apts.	1100 Peterhoff Ave.	11			1971 E	
Valley Stream	Langbrook, The	50 Gibson Blvd.	27			<1964	
Valley Stream	Maplecrest Apts.	780-800, 753 Rockaway Ave.	55	872-4108		<1964	

**Apartment Complexes of 10 or More Units
Nassau County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
Valley Stream	Valley Garden Apts.	410 N. Corona Ave.	23			<1964	
W Hempstead	---	191 Woodfield Rd.	17			1973 E	
W Hempstead	Plymouth Gardens	227 Chestnut St. & Plymouth St	24			<1964	
Wantagh	Park Avenue Gardens	3570-3620 Park Ave.	32	785-5460		<1970	
Woodmere	---	9 Lafayette Pl. & Broadway	16			<1963	
Woodmere	---	874 W. Broadway, 302 Longacre	16			<1963	
Woodmere	---	1100 Ward Place & Hartwell Pl.	12			<1963	
Woodmere	Courteen Apts.	205 Steven Pl. & Woodmere Ct.S.	12			<1963	
Woodmere	Fairfax Hall	1 Club Dr. & Station Pl.	84			1931	
Woodmere	Franklin Mews	220,224 Franklin Pl. & Fulton	14			<1963	
Woodmere	Woodmere Court Apts.	821 Woodmere Ct. So.	12			<1963	
Woodsburgh	Crestwood Apts.	1 Meadow Dr. & Broadway	36			<1963	
Total for Town of HE (248 complexes):			13,141				

TOWN OF LB APARTMENT COMPLEXES

Long Beach	---	616-634 E. Braodway	16			<1964	
Long Beach	---	555-571 W. Broadway	16			<1964	
Long Beach	---	423-433 E. Broadway	20			<1964	
Long Beach	---	658-670 W. Broadway	10			<1964	
Long Beach	---	60,61,66 Neptune & E. Broadway	28			<1964	
Long Beach	---	15 New Hampshire Ave.	10			>1970, <1990	
Long Beach	---	661 W. Broadway	25			<1964	
Long Beach	---	951 Oceanfront & Tennessee Ave	32			1973 E	
Long Beach	---	205 W. Broadway & Magnolia Blvd	16			<1964	
Long Beach	---	571 Shore Rd. & 61 Neptune Bvd	28			<1964	
Long Beach	Admiral Arms	470 E. Broadway & Franklin Blv	35	431-6107		<1964	
Long Beach	Amity Arms	643 Shore Rd.	12			<1964	
Long Beach	Ansonia Apts.	105 W. Chester St. & National	37			<1964	
Long Beach	Atlantis, The	302 E. Broadway & Monroe Blvd.	30			<1964	
Long Beach	Avalon Towers	10 W. Broadway & Edwards Blvd.	109	889-1802		1990	
Long Beach	Bell Lido	830 E. Broadway	30			<1964	
Long Beach	Breslin Apt.	465 National Blvd.	18			<1964	
Long Beach	Broadway Apts.	25 W. Broadway	142			<1964	
Long Beach	Country Club Towers	333 E. Broadway	72			<1964	
Long Beach	Crystal House	630 Shore Rd.	174	889-7220		1968	
Long Beach	Flamingo Terrace Apts.	261-271 Shore Rd.	12			<1964	
Long Beach	Floridian	330,340 E. Broadway	24			<1964	
Long Beach	Golden Gate	215 E. Broadway	93			<1964	
Long Beach	Golden Shores	319,325 E. Broadway	26			<1964	
Long Beach	Harvev Court Apts.	315 W. Broadway	40			<1964	
Long Beach	Kennedy House	10 Monroe Blvd. & Shore Rd.	103			1967 E	
Long Beach	Lafayette Garden Apts.	405-425 W. Broadway	38			<1964	
Long Beach	Lincoln Shore Apts.	325-345 Shore Rd.	30	2128737575		<1964	
Long Beach	Oakwood House	1 E. Broadway & Edwards Blvd.	108			<1964	
Long Beach	Plaza East	465 Shore Rd. & Franklin Blvd.	121	293-2997		1969	
Long Beach	Roosevelt Apts.	59 Roosevelt Blvd.	12			<1964	
Long Beach	Royal Danelli, The	65 Lincoln Blvd. & E. Broadway	120			<1964	
Long Beach	San Remo	270 Shore Rd. & Monroe Blvd.	62	432-9496		<1964	
Long Beach	Seafair Apts.	102 W. Hudson St. & National	22			1967 E	
Long Beach	South Shore Apts.	251-255 W. Broadway	29			<1964	
Long Beach	Sunlit Terrace Apts.	233 Shore Rd.	40	432-9650		<1964	
Long Beach	Surfview Towers	25 Franklin Blvd. & Shore Rd.	121	432-6058		1967 E	
Long Beach	Terrace Apts.	750 E. Broadway	12			<1964	
Long Beach	Twin Garden Apts.	242,248 E. Broadway	12			<1964	
Long Beach	Victory Apts.	424-430 W. Broadway	48			<1964	
Total for Town of LB (40 complexes):			1,933				

TOWN OF NH APARTMENT COMPLEXES

Carle Place	Fairhaven Gardens	401 E. Jericho Tpke.	300	248-1610		<1964	
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**Apartment Complexes of 10 or More Units
Nassau County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
Flower Hill	Flower Hill Apts.	24-32 Middle Neck Rd.	64			1963 E	
Great Neck	Academy Gardens	794-812 Middle Neck Rd.	40			<1964	
Great Neck	Ellard House	825 Middle Neck Rd.	23			<1964	
Great Neck	Millbrook Apts.	240-250 Middle Neck Rd.	118			<1964	
Great Neck Plz	---	28 Gilcrest Rd. & Stoner Ave.	40			1981 E	
Great Neck Plz	Ashwood Apts.	1 Ash Pl. & Cuttermill Rd.	36			<1964	
Great Neck Plz	Brookwood	90 Knightsbridge Rd.	56	829-8807		<1964	
Great Neck Plz	Clent Apts.	5,10,15,20 Clent Rd.	152			<1964	
Great Neck Plz	Plaza 100	100 Great Neck Rd.	31	829-6111		1987	CONDCONV
Great Neck Plz	Schenck Gardens	9,11,15,17 Schenck Ave.	96			1950	
Great Neck Plz	Village Gardens	12 Welwyn Rd. & Gilcrest Rd.	40			<1964	
Great Neck Plz	Village Gardens	11,13 Welwyn Rd.& Gilcrest Rd	90			<1964	
Great Neck Plz	Village Gardens	46 Schenck Ave.	45			<1964	
Great Neck Plz	Village Gardens	21.23 Schenck Ave. & Gilcrest	105			<1964	
Manhasset	---	24 Vanderbilt Ave.	12			<1964	
Manorhaven	---	42,44,54,56 Sintsink Dr E.	40			1978 E	
Manorhaven	---	141 Manorhaven Blvd.	10			1967 E	
Manorhaven	---	165 Manorhaven Blvd.	15			1969 E	
Manorhaven	Manhasset Bay Apts.	100 Manhasset Ave.	12			<1970	
Manorhaven	Shore Road	84-94 Shore Rd.	38			<1970	
Mineola	---	203 Willis Ave.	15			<1964	
Mineola	---	341-343 Willis Ave.	16			<1964	
Mineola	---	129-133 Lincoln Ave.	18			<1964	
Mineola	---	162 2nd St.	12			<1980	
Mineola	---	146 Harrison Ave., 151 Willis	12			<1964	
Mineola	---	102 Main St.	12			<1985	
Mineola	---	104 Mineola Blvd.	12			<1970	
Mineola	Carolina Apts.	250 Harrison Ave. & Horton Hwy	32			<1964	
Mineola	Embassy	120 Clinton Ave., 125 Lincoln	96			<1964	
Mineola	Fairhaven Garden Apts.	400 E. Old Country Rd.	320	248-6333		1964 E	
Mineola	Harrison	150 Harrison Ave.	12			<1964	
Mineola	Heritage House	190 1st St. & Harrison St.	40			<1964	
Mineola	Jackson Royale	101 Jackson Ave.	60			1972	
Mineola	Mineola Gardens	55-71 Roselle St. & Roslyn Rd.	56			<1964	
Mineola	Nassau Towers	260 1st St. & Horton Hwy.	60			<1964	
Mineola	President, The	190 Mineola Blvd. & Grant Ave.	82	747-6035		<1964	
Mineola	Richlee Gardens	Richlee Ct. & 1st St.	180	742-7022		<1964	
Mineola	Sterling Arms	101 Clinton Ave.	72	248-2599		1967 E	
Mineola	Town House, The	225 1st St. & 3rd Ave.	74	747-4689		<1964	
Mineola	Wellington Apts.	270-286 1st St.	50			<1964	
New Hyde Park	Lakeville Apts.	560 Lakeville Rd.	12			1973 E	
Pt Washington	---	55 Main St.	10			<1970	
Pt Washington	---	1 Herbert Ave. & Main St.	10			<1970	
Pt Washington	52 Main St.	52 Main St. & S. Bayles Ave.	28			<1970	
Pt Washington	6 Bellevue Ave.	6 Bellevue Ave.	17			<1964	
Pt Washington	Hadley House Apts.	464 Main St. & 5th Ave.	41	944-6808		1983	SRCIT
Pt Washington	Landmark on Main St.	232 Main St.	59	944-3595		1995	SRCIT-AFF
Pt Washington N	Soundview Gardens	Fishermans Dr.& Waterview Dr.	60	883-7030		<1964	
Pt Washington N	Wildwood Gardens	E. Soundview Dr & Waterview Dr	264	944-7940		<1964,1967 E	
Roslyn	Flower Garden Apts.	300-320 Main St. & E. Broadway	43			<1970	
Roslyn	Horizon at Roslyn	Landing Rd.	49		UC	2005	SRCIT
Roslyn	Sterling Glen at Roslyn	100 Landing Rd.	158	626-6900	UC	2004	SRCIT
Russell Gardens	Lancaster House	160 S. Middle Neck Rd.	39			<1964	
Russell Gardens	Russell House	150 S. Middle Neck Rd.	51			<1964	
Thomaston	Pont Apts.	50 S. Middle Neck Rd.& Pont St	54	466-1072		1953	
Thomaston	Spruce & Linden Apts.	37,39 Spruce St., 26,28 Linden	16			<1964	
University Gdns	Country Club Apts.	200 S. Middle Neck Rd.	51			<1964	
Westbury	214 Linden Ave.	214 Linden Ave.	17			<1976	
Williston Park	639-653 Willis Ave.	639-653 Willis Ave.	19			<1964	
Williston Park	711 Willis	711 Willis Ave. & Charles St.	13			1965 E	
Williston Park	Willis Ave. Apts.	664-682 Willis Ave.	24			<1964	
Williston Park	Williston Apts.	713-725 Willis Ave.	24			<1976	
Williston Park	Williston House	580-610 Willis Ave.	192	742-3358		<1964	

**Apartment Complexes of 10 or More Units
Nassau County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
<i>Total for Town of NH (64 complexes):</i>			3,845				
TOWN OF OB APARTMENT COMPLEXES							
E Massapequa	South Point Apts.	Spinning Wheel La.& Carm. Mill	198	795-4397		1971	
Farmingdale	---	685 Conklin St.	12			<1964	
Farmingdale	---	717 Conklin St.	12			<1964	
Farmingdale	---	666 Fulton St.	16			1973 E	
Farmingdale	---	130 Secatogue Ave.	12	266-1140		<1964	
Farmingdale	Conklin Apts.	675 Conklin St.	44	753-0417		<1970	
Farmingdale	Grand Haven	262 Eastern Pkwy.	23	903-6400		2003	SRCIT
Farmingdale	Secatogue Apts.	150 Secatogue Ave.	48	756-2063		1940	
Farmingdale	Silver Manor	81 Secatogue Ave.	49	779-1771		2002	SRCIT
Farmingdale	Terrace Gardens	630 Fulton St.	16			<1970	
Farmingdale	Village Apts.	678 Fulton St.	16			<1970	
Farmingdale	Woodbridge at Farmingdale	477-481 Fulton St.	28	6316677636		1997	SRCIT
Farmingdale	Woodbridge II	461 Fulton St.	62	6316677636		2000	SRCIT
Hicksville	Fairhaven Garden Apartments	Richard Ave. & 290 N. Broadway	180	433-1959		1957	
Jericho	Fairhaven	17th St. & N. Broadway	235			1958	
Jericho	Jericho Town House	Dawson La. & Bethpage Rd.	80			1960s	
Jericho	Westwood Village	50 Westwood Dr.& Brush Hollow	242	333-1919		1973 E	
Oyster Bay	Frederick Apts.	69 Orchard St.	18			1930s	
Oyster Bay	Norwich Gate Townhouse Apts.	600 Pine Hollow Rd.	348	922-7155		1981	
Woodbury	Fairhaven at Woodbury Town H	Fox Hollow Rd. & Jericho Tpke.	480	921-1700		1972	
<i>Total for Town of OB (20 complexes):</i>			2,119				

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
TOWN OF BA APARTMENT COMPLEXES:							
Amityville	---	28 Park Ave.	10			1985 E	
Amityville	---	89 Park Ave.	16			<1970	
Amityville	---	32 Park Ave.	10			1987 E	
Amityville	---	22 Park Ave.	10			1985 E	
Amityville	---	92 Park Ave.	10			1989 E	
Amityville	---	94, 100 Park Ave.	20			1981 E	
Amityville	---	52 Park Ave.	10			1991 E	
Amityville	Amity Oaks	Noelle Ct. & Oak St.	36	207-0880		1999	SRCIT
Amityville	Amity Pines	108 Broadway & Wanser Pl.	16			<1970	
Amityville	Baxter Apts.	110 Union Ave.	12			<1970	
Amityville	Beachview Apts.	295-297 Merrick Rd.	24			<1970	
Amityville	Brodam Apts.	290 Broadwav	20			<1970	
Amityville	Caramanico Apts.	46 Park Ave.	10			<1970	
Amityville	Ketchum Garden Apts.	167-175 Ketchum Ave.	14			<1970	
Amityville	Lakeside Gardens	200 Merrick Rd.	24			<1970	
Amityville	Town House Apts.	Park Ave. & Wanser Pl.	13			<1977	
Amityville	Union Avenue Apts.	72, 76 Union Ave.	12			<1970	
Amityville	Winsdor Apts.	51 Ireland Pl.	12			<1970	
Babylon	---	50 The Crescent & Kingsland Pl	24			<1970	
Babylon	Fairfield at Babylon Village	134 Park Ave.	30	587-6096		<1970	
Babylon	Fairfield Park	Friendly Ct. & Park Ave.	200	587-6096		<1970	
Babylon	Goose Bay Apartments	99 Prospect St.	40	669-4231		1984	SRCIT
Babylon	Ka-Flow Garden Apts.	20-21 Ralph Ave. & Locust Ave.	16			<1970	
Babylon	Town House Apartment	39-59 Park Ave.	32			<1970	
Babylon	Village Green	30-80 Ralph Ave. & Locust Ave.	34	741-3841		<1970	
Babylon	Village Manor	17 Hewlett Ct.	10			<1970	
Copiapue	Bunt Commons II	Marconi Blvd. & Wartburg Ave.	123		UC	2002	SRCIT
Copiapue	Lakeside Manor	75-105 Cedar Ct. & Howard Ave.	55	842-0177		1985	SRCIT
Copiapue	Taylor Ave. Apts.	55 Taylor Ave. & Great Neck Rd	10			<1970	
Deer Park	Babylon Park Center	Park Center Dr. & Carlls Path	72	586-1469		1978	SRCIT
Deer Park	Country Club Apts.	21 Baldwin Path	242	243-1908		<1970	
Deer Park	Deer Park Garden Apts.	43 Golden Ave.	96	586-5025		<1970	
Deer Park	Fairfield at Deer Park	68-82 Irving Ave. & Nicolls Rd	36	587-6096		<1970	
Deer Park	Fairfield Station	801-817 L.I. Ave. & Lucille La	32	669-9124		<1970	
Deer Park	Manor Park I, II	215 Carlls Path & Commack Rd.	215	242-4600		1983,1986	SRCIT
E Farmingdale	Covert Apts.	Glenn Ct. & Main St.	80			<1970	
E Farmingdale	Farmingdale Villas	Genova Ct. & 975 Main St.	268	843-0307		1999	SRCIT
Lindenhurst	---	183 N. Wellwood Ave.	10			2000	SRCIT
Lindenhurst	Bunt Commons	150 N. Broadway & School St.	50			1989	SRCIT
Lindenhurst	Gail Grace Manor	Washington Ave. & Montauk Hwy.	21	957-5106		2002	SRCIT
N Amityville	Amity Senior	110 Cedar Rd.	67	841-0946		1991	SRCIT
N Amityville	Cloverdale Apts.	1-200 Great Neck Rd. & Dareka	127	789-8600		<1970	
N Amityville	Dominican Village	565-595 Albany Ave.	266	842-6091		1995	SRCITCONG
N Amityville	Krystie Manor	865 County Line Rd.& Ritter Av	62	841-0744		1988	SRCIT
N Amityville	Nu Horizons Manor (pt.)	Cassata Dr. & New Hwy.	56	225-9130		1997	
N Amityville	Nu Horizons Manor (Sr. pt.)	Cassata Dr. & New Hwy.	80	225-9130		1997	SRCIT
N Amityville	Southwood at Amityville	25 Brefni St.	174	789-3433		1985,2003	SRCIT
N Amityville	Terrace Garden Apts.	777 County Line Rd.	50	789-8599		<1970	
N Babylon	Nob Hill Apartments #1	538-548 Garnet St. & Wallace	16			<1970	
N Babylon	Nob Hill Apartments #2	450-471 Beebe Ct. & Garnet St.	20			<1970	
N Babylon	Northwood Village	Northwood Ct. & Weeks Rd.	65	242-1566		1969	
N Babylon	Pickwick Apts.	1-27 Pickwick La. & Deer Park	15			<1970	
N Babylon	Somerset Village	1501-1772 August Rd.	271	667-9575		<1970	
N Babylon	Weeks Manor I	15 Weeks Rd.	62	586-0127		1981	SRCIT
N Babylon	Weeks Manor II	25 Weeks Rd.	50	586-8839		1992	
N Lindenhurst	Baratta Apartments	680-688 Wellwood Ave.& Farmers	12			<1970	
N Lindenhurst	Forsythe Gardens	Forsyth Ave. & Sunrise Hwy.	104	789-0707		<1970	
N Lindenhurst	Karp Apartments #1	20-26 Perry St. & Lake Blvd.	8			<1970	
N Lindenhurst	Karp Apartments #2	Lake Blvd. & Frank St.	16			<1970	
N Lindenhurst	Karp Apartments #3	1090,1094 N. Allegany Ave.	8			<1970	

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
N Lindenhurst	Monroe Gardens	N. Monroe Ave.	86	666-1122		1995	SRCIT
N Lindenhurst	Normandy Gardens	850 N. Monroe Ave.	118	884-4446		1973	
N Lindenhurst	Putnam Gardens	930, 934 N. Putnam Ave.	12			<1970	
N Lindenhurst	Roman Hill Apts.	375 5th St.	36			<1970	
N Lindenhurst	Royal Gardens	1 Maple Dr. & Wellwood Ave.	24			<1970	
N Lindenhurst	Seventh Street Apts.	208 7th St. & 2nd Ave.	12			<1970	
N Lindenhurst	Sunrise Villas	Leonard Ct. & Farmers Ave.	100	226-5555		1997	SRCIT
N Lindenhurst	Wellwood Gardens	633-639 Wellwood Ave.& 49th St	24			<1970	
W Babylon	---	Muncie Rd.	24			1973 E	
W Babylon	---	96 Calvert Ave.	12			<1970	
W Babylon	Babylon Court Apts.	Claire Ct. & Little E Neck Rd.	138	669-7799		<1970	
W Babylon	Bay-Point Apts.	Bay Point Ct. & Muncie Rd.	55	669-6100		1994	SRCIT
W Babylon	Bonnie Apts.	76-80 Justice St.	16			<1970	
W Babylon	Evergreen Garden Apts.	Athens Ct & Great East Neck Rd	48	422-5122		1988	SRCIT
W Babylon	Fairfield Maples South	850 Little East Neck Rd.	48	587-6464		1985	SRCIT
W Babylon	Fairfield Oaks	2-16 Baker St. & Great E. Neck	32	587-6096		<1970	
W Babylon	Fairfield West at Babylon	Phillip Walk & Little E. Neck	60	587-6096		1972	
W Babylon	Great South Bay Villas	Great East Neck Rd. & RR Ave.	44			2002	SRCIT
W Babylon	Harbour Club, The	Milligan Rd. & Muncie Rd.	335	669-2680		1968	
W Babylon	Holiday Square Sr.Housing (Pt)	10 Muncy Ave. & Great E. Neck	5	422-6720		1983	SRCIT
W Babylon	Jolam Apts.	100-110 Calvert Ave.	16			<1970	
W Babylon	Karis Manor	730 S. Railroad Ave.	46	666-1122		1985	SRCIT
W Babylon	Manor Park V	Nicole Pl. & Hubbards Path	62	661-1483		1988	SRCIT
W Babylon	Maplewood Village	870 Little East Neck Rd.	48			1988	SRCIT
W Babylon	Platt Gardens	Route 109 & Platt Ave.	34	218-6440	UC	2005	SRCIT
W Babylon	Shur Commons (Beaver Lake)	Route 109 & Badger La.	74		UC	2004	SRCIT
W Babylon	South Shore Commons (pt.)	Rogers Ct. & Rte. 109	28	321-7191		1995	
W Babylon	South Shore Commons (Sr. pt.)	Rogers Ct. & Rte. 109	114	321-7191		1995	SRCIT
W Babylon	Suburbia Gardens	381-399 Great East Neck Rd.	47	884-7431		<1970	
W Babylon	Thunderbird Apts.	110-130 Magaw Pl.& Sunrise Hwy	40	587-4217		<1970	
W Babylon	West Babylon Manor	Cassata Ct. & Rte. 109	148	669-0207		1986	SRCIT
W Babylon	Westminster Park Apts.	642-668 Sunrise Hwy. & Strand	56	587-1834		1972	
Wheatley Hgts	Wheatley Hollow Gardens	50 Colonial Springs Rd.	72	643-8854		1981	SRCIT
Wyandanch	Belmont Villas	Wyandanch Ave.	164	643-3570	UC	2005	SRCIT

Total for Town of BA (94 complexes): 5,682

TOWN OF BR APARTMENT COMPLEXES:

Center Moriches	Crystal Pond Villas	Jerusalem Hollow Rd.	84			1991	
Center Moriches	Mirror Pond Villas	Jerusalem Hollow Rd.	100	878-2525		2002	
Centereach	Fairfield Gables	Neal Path & Rte.347(S.Setauket)	64	737-9030		2000	
Centereach	Jefferson's Ferrv	Route 347 (South Setauket)	248	246-9522		2001	LIFECARE
Centereach	North Shore	4089 Nesconset Hwy. & Arrowhead	99	473-8000		1989	SRCITCONG
Centereach	Setauket Knolls	Emily Dr. & Route 347	108	585-5757		1973 E	
Coram	Avalon Pines	Pine Rd. & C.R. 83	450	8662373701	UC	2003	
Coram	Brookwood Townhouse Apts.	Townhouse Dr.& Rte.112/OldTown	432	736-9367		1996	
Coram	Brookwood Village Garden Apts	1057 Old Town Rd.	400	698-2711		1973 E	
Coram	East Pointe	Pointe Cir. & 50 Gibbs Rd.	441	928-3000		1984	
Coram	Fairfield Hills North	Horizon View Dr.& Bicycle Path	169	451-0969		2000	
Coram	Fairfield Knolls South	Route 112 & Pine Rd.	173	451-1282		2005	SRCIT
Coram	Island View	Vista View Dr. & Bicycle Path	228	732-5100		2000	
Coram	La Bonne Vie	Country Club Dr. & Rte. 25	256	698-4300		1973 E	
Coram	Pinewood Estates	Coram-Swezeytown Rd.	200	736-8515		2003	SRCIT
Coram	Pinewood Village	1998 Route 112	84	732-1313		<1970	
Coram	Stonegate	Stonegate Way & Coram-Swezytow	165	696-6888		1999	
Coram	Villa D'Est	Villa D'Est Dr. & Rte. 25	70	736-1081		1973 E	
E Moriches	Walden Pond at East Moriches	Walden Ct. & 181 Frowein Rd.	323	874-7500		2003	SRCIT
E Patchogue	Conifer Village	1 Brookwood La. & C.R. 101	174	207-4477		2003	SRCIT
E Patchogue	East Winds	887-909 Montauk Hwy.	98			<1966	
E Patchogue	Greenbriar Garden Apts.	301-319 Robinson Ave.& Sunrise	80	475-7313		<1970	
E Patchogue	La Bonne Vie II	La Bonne Vie Dr. & Hospital Rd	800	289-4400		1975, 1982	SRCIT
E Patchogue	Lakeside Village	Pond View Dr. & Hospital Rd.	249	654-0555		1978	

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
E Patchogue	Mt. Vernon Garden Apts.	72-76 Mt. Vernon Ave.	48	475-1667		<1970	
Farmingville	Centereach Garden Apts.	50-60 Horseblock Rd.	68	585-4191		<1970	
Farmingville	Fairfield Hills South	Overlook Dr. & Bicycle Path	202	451-7171		2001	
Lake Grove	Lake Grove Garden Apts.	Williams Blvd. & Hawkins Rd.	368	981-0755		1971	
Lake Grove	Regency Garden Apartments	184 Hallock Rd. & Route 347	86	588-1177		<1970	
Lake Ronkonkom	Fairfield at Ronkonkoma	Union Ave. near Mill Rd.	60	585-1280	UC	2005	
Lake Ronkonkom	Heatherwood on the Lake	147 Lake Shore Dr. & Heatherwd	144	585-2562		<1970	
Lake Ronkonkom	Hertlin House	Portion Rd. & Cenacle Rd.	120	981-1880		2003	SRCITCONG
Lake Ronkonkom	Waterfalls, The	Cassata Rd. & Smith Rd.	318	738-6700		1999	SRCIT
Lake Ronkonkom	Woodmont Village	100 Ronkonkoma Ave. & Colonial	96	588-5530		<1970	
Manorville	Pine Hills	Country Club Dr. & Wading River	1,400	878-2525		1976	
Mastic	---	1550 Montauk Hwy.	10			1946	
Mastic	Rivers Edge at Moriches	1745 Old Montauk Hwy.	37	399-7275		1992	SRCIT
Medford	Villas at Medford	Route 112 & Granny Rd.	112	736-7400		2002	
Middle Island	Eagleview Court	Robin Dr. & Middle County Rd.	150	205-1256		1999	SRCIT
Middle Island	Fairfield Village	248 Lake Pointe Circle & Rt 25	180	924-1100		1976, 1981	
Middle Island	Tudor Oaks	Tudor La. & Middle Country Rd.	110	345-2138		1973	
Miller Place	Miller Place Gardens	124 Sylvan Ave.	11			2001	
Moriches	Tall Oak Country Club Villas	Moriches-Middle Island Rd.	224	878-2525		1985 E	
N Bellport	Atlantic Point	Orchid Circle & Woodside Ave.	795	205-1300		2002	
Patchogue	---	3,5 Lake St.	24			<1961	
Patchogue	Bayview Garden Apts.	234 River Ave.	96			1962 E	
Patchogue	Capri Gardens	1 Park Ave.	15			1967 E	
Patchogue	Church Street Apts.	45 Church St. & Railroad Ave.	28			<1961	
Patchogue	Colonial Garden Apts.	250 River Ave.	64			1967 E	
Patchogue	Fairfield at West Lake	311 W. Main St.	37	758-2866		2002	SRCIT
Patchogue	Fairfield on the Bay	Midship La. & River Ave.	132	475-8922		1972 E	
Patchogue	Heatherwood House at Patchogu	99 Waverly Ave. & E. 2nd St.	192	289-3208		1962 E	
Patchogue	Maple Tree Apts.	90-98 Maple Ave. & Thorne St.	84	475-4145		1960 E	
Patchogue	Seacrest Village	127 South Ocean Ave.	30	475-1540		2003	
Patchogue	Terry Apts.	38 Rider Ave. & Terry St.	65	758-1655		1973 E	
Patchogue	Tiffany Apartments	1 Maple Ave. & E. Main St.	88	758-7977		1973 E	
Patchogue	Wave Lake Apt.	77 Waverly Ave.	80	289-3208		1990	
Port Jefferson	Barnum House	Route 112 & Barnum Ave.	30			2002	
Port Jefferson	Belle Terrace	1-7 Dark Hollow Rd.	64	928-0033		<1970	
Port Jefferson	Fairfield at Port Jefferson	655 Belle Terre Rd. & Myrtle Rd	92	928-7250		<1970	
Port Jefferson	Fairfield Landmark	Dark Hollow Rd.	66	928-7250		2001	
Port Jefferson	Harbour Heights Country Club	645 Belle Terre Rd.	96	928-1437		<1970	
Port Jefferson	Jefferson Woods Apts.	84 North Country Rd.	34	474-7265		<1970	
Port Jefferson	Jefferson Woods Apts.	150 North Country Rd.	42	474-7265		<1970	
Pt Jeffersn Sta	Heatherwood House at Port Jeff	39-61 Piedmont Dr.	272	928-0569		<1970	
Pt Jeffersn Sta	Plaza Garden Apartments	125 Terryville Rd.	50	473-3881		<1970	
Pt Jeffersn Sta	Sylvan Meadows	Sylvan La. & Route 347	54	473-3130		1991	
Pt Jeffersn Sta	Wisdom Gardens	115 Terryville Rd.	40	476-0013		2002	SRCIT
Ridge	Brookwood at Ridge	Middle Country Rd & Randall Rd		924-2431		2005	
Selden	Fairfield at Selden	111 College Rd. & Mooney Pond	240	698-8344		1972 E	
Terryville	Fairfield Knolls North	Village Green Dr. & Rte. 347	291	331-4407		2003	SRCIT
Terryville	Woodcrest Estates	Woodcrest Dr. & Route 347	256	473-4114		2000	SRCIT-AFFO

Total for Town of BR (72 complexes): **12,596**

TOWN OF EH APARTMENT COMPLEXES:

N W Harbor	Maidstone Village	295 Three Mile Harbor Rd.	14			<1989	
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Total for Town of EH (1 complex): **14**

TOWN OF HU APARTMENT COMPLEXES:

E Northport	Apartments	376 Larkfield Rd.	21			<1970	
E Northport	Apartments	360 Larkfield Rd.	21			<1970	
Huntington	---	159 Main St.	12			<1970	
Huntington	---	7 Dewey St.	10			<1970	

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
Huntington	Oakwood Road Apts.	40-44 Oakwood Rd. & Hazelwood	12			<1970	
Huntington Sta	---	150 1st Ave. & E. 11th St.	10			<1980	
Huntington Sta	Brandywine Apartments	168-180 Lenox Rd. & Pulaski Rd	100			1952 E	
Huntington Sta	Twin Oaks Apartments	2114 & 2116 New York Ave.	23			<1970	
Melville	Avalon Court	55 Republic Rd. & Ruland Rd.	154	420-8300		1997	
Melville	Avalon Court North	Court North Dr. & Republic Rd.	340			2000	
Melville	Highlands at Huntngton Terrace	70 Pinelawn Rd. & L. I. E.	55	297-6813		2002	SRCIT
Melville	Melville Garden Apts.	1135 Old Walt Whitman Rd.	26			<1970	
Northport	Linberg Apartments, The	177-197 Laurel Ave.	24			<1970	
Northport	Neptune Arms Apartments	7 Beach Ave.	10			<1970	
Northport	Northport Arms	451 Main St.	36			<1970	
Northport	Northport Harbor Apts.	425-429 Main St.	32	261-7662		<1970	
Total for Town of HU (16 complexes):			886				

TOWN OF IS APARTMENT COMPLEXES:

Bay Shore	---	8, 10 Cherry St.	10			1994	
Bay Shore	---	50-52 Center Ave.	12			<1966	
Bay Shore	---	12 Shore La. & Gibson St.	12			<1966	
Bay Shore	---	26-52 Garfield Ave.	14			1999	
Bay Shore	---	11 Maple Ave. & Gibson St.	48			1968	HOSPCONV
Bay Shore	Bay Shore Gardens	413-437 East Main St.	104	666-8235		<1966	
Bay Shore	Bay Shore Manor	2-24 E Garfield St.84-903rd Av	112	665-1424		<1966	
Bay Shore	Berkely Garden Apartments	54-58 S. Clinton Ave.	20	581-1369		<1966	
Bay Shore	Birches, The	91 S. Clinton Ave.	28			<1966	
Bay Shore	Brook Gardens	June Ct. & Brook Ave.	96	789-0707		1984	SRCIT
Bay Shore	Chatham Square	Union Blvd.	24	666-4040	UC	2005	
Bay Shore	College Park	92 4th Ave.	31	968-8118	UC	2005	CONV
Bay Shore	Eastbrook Apartments	325-335 Brook Ave. & E. Forks	64	968-2932		1969	
Bay Shore	Fairfield Arms at Bayshore	80 S. Clinton Ave.	20	666-1463		1968	
Bay Shore	Fairfield Gardens at Bayshore	64 S. Clinton Ave.	16	666-1463		<1966	
Bay Shore	Fairfield North at Bayshore	25 N. Clinton Ave.	22	666-1463		1973 E	
Bay Shore	Fairfield Renaissance	55 5th Ave.	14	587-6096		1998	SRCIT
Bay Shore	Fairfield South at Bayshore	53 S. Clinton Ave.	28	666-1463		1969	
Bay Shore	Fairwood Gardens	2259 Union Blvd.	62	968-1777		<1966	MOTELCON
Bay Shore	Gables, The	70-72 S. Clinton Ave.	24	666-3750		<1966	
Bay Shore	Greenview Gardens	Debora Ct. & Fifth Ave.	36	666-4040		1991	
Bay Shore	Hedges, The	5,9 Brentw'd Rd.401-409 E Main	88	666-7860		1968	
Bay Shore	Laurel Apartments	92 S. Clinton Ave.	45			<1966	
Bay Shore	Maples, The	11 S. Saxon Ave. & Montauk Hwy	39	665-3090		<1966	
Bay Shore	Mid Island Apts.	2053-2075 Union Blvd.	120	665-6565		<1966	
Bay Shore	Pines, The	21 Brentwood Rd. & Union Blvd.	29			1968	
Bay Shore	Redwood Gardens	99 S. Clinton Ave. & Lawrence	114	666-0916		<1966	
Bay Shore	Royal Apartments South	361 E. Main St. & Penataquit	112			<1966	
Bay Shore	Saxon Green	16,18,20Union Blvd & Saxon Ave	76	666-1122		1997	SRCIT
Bayport	Fairway Manor	Clubhouse Dr. & Sunrise Hwy.	394	363-6918		1996, 2001	SRCIT
Bayport	Southern Meadows	101 Terrace Rd. & Gillette Ave	452	363-6300		1968, 1971	
Bohemia	Fairfield at Sunrise Gardens	Westgate Dr. & Lakeland Ave.	354	567-1144		<1970	
Bohemia	Heatherwood House at Oakdale	164-172 Oakdale-Bohemia Rd.	64			<1970	
Bohemia	Saddle Cove	Saddle Cove Rd. & Johnson Ave.	74	472-3453		2004	
Bohemia	Springwood Garden Apts.	1314 Smithtown Ave.	54	567-5622		1973 E	
Brentwood	---	829 Suffolk Ave.	14			<1976	
Brentwood	Apartments	77 Wicks Rd.	10			<1977	
Brentwood	Brentwood Apartments	28 1st Ave.	13			<1977	
Brentwood	Brookwood Garden Apts.	East Dr. & Walter St.	64	698-2711		<1970	
Brentwood	East Newbrook Gardens	Eastbrook Ct. & Commack Rd.	58			1985	
Brentwood	Heritage Gardens	1 Leroy Ave. & 8th St.	145	231-4306		<1970	
Brightwaters	Apartments	104 & 106 Orinoco Dr.	20	567-1193		<1966	
Brightwaters	Gem Estates	140 Orinoco Dr. & Richland Bvd	16			<1966	
Brightwaters	South Shore Garden Apts.	Hiawatha Dr. & Orinoco Dr.	24			<1966	
Central Islip	Court Plaza Senior Apts.	1 Hoppen Dr. & Carleton Ave.	153	232-0802		2003	SRCIT-AFFO
Central Islip	Coventry Village	Coventry La. & Wheeler Rd.	90	234-8834		1972	

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
Central Islip	Hawthorne Court	111-217 Hawthorne Ave.	435	234-2063		<1970	
E Islip	Belfran #4	255-265 East Main St.	88	277-1315		<1970	SCHOOLCON
E Islip	Carleton Green	25 Carleton Ave., N/27A	12	666-1122		2000	SRCIT
E Islip	Country Club Gardens	280 Bellmore Ave. & Sunrise	128	581-1475		1971	
E Islip	Main Street Gardens	Montauk Hwy. & Carleton Ave.	26	277-7733	UC	2002	SRCIT
Great River	Fairfield at East Islip	115 Connetquot Ave.	27	462-6060		1989	
Hauppauge	Devonshire Hills	Devonshire Rd. & Veterans Hwy.	297	234-3535		1968	
Hauppauge	New England Village	425-461 Lincoln Blvd.	83	366-3446		<1970	
Hauppauge	Stratford Greens	Dorado Cir & 1064 Veterans Hwy	359	234-3595		<1970	
Holbrook	Fairfield Greens at Holbrook I	825 Broadway Ave(Broadway Cir)	114	218-9044		1973	
Holbrook	Fairfield Greens at HolbrookII	Broadway Ave.	58	218-9044		1998	
Holbrook	Hillcrest Village	865 Broadway Ave.	372	567-1761		<1970	
Holbrook	Saddle Rock Apts.	Saddle Rock Rd. & Sunrise Hwy.	330	563-0174		1995	
Holbrook	Spruce Pond	Spruce Dr. & Sunrise Hwy.	360	758-2121		1997	
Holbrook	Stonehurst Terrace	835 Broadway Ave.	56	698-2711		1973 E	
Holtsville	Victorian Gardens	Furrows Rd. & Waverly Ave.	402	207-0880		1999	
Islip	Fairfield at Saxon Arms	16-20 N. Saxon Ave.	36	666-1463		1968	
Islip	Greenview Village	Nikia Dr.,Chelsea Dr & Moffitt	212	224-8978		1994,1999	SRCIT
Islip	Lakeview Gardens	3-15 Willowbrook Ave.& Montauk	39			<1966	
Islip	Locustwood Green	24 Locust Ave. & Grant Ave.	36	666-1122		1989	SRCIT
Islip	Maplewood Apts.	2455 Union Blvd.	86	277-6781		1973 E	FAM
Islip	Oakwood Manor	Justine Ct. & Oakwood Blvd.	120	968-8360		1997	SRCIT
Islip	Pine Brook Apts.	155, 159 Nassau Ave.	16	799-2620		<1966	
N Bay Shore	Pineaire Manor	1721-1747 N. Gardiner Dr.	54			<1970	
Oakdale	Brookwood at Oakdale	Patricia Ct. & Race Pl.	88	698-2711		1988	SRCIT
Oakdale	Fairfield at Oakdale	20 West Shore Rd.&Montauk Hwy.	19	567-6333		1973 E	
Oakdale	Greenview Commons	Meredith La. & Sunrise Hwy.	163	244-8113		2000	SRCIT
Oakdale	Greenview Court	Greenview Ct.& Oakdale-Bohemia	68	218-1771		1997	SRCIT
Ronkonkoma	Colony Park at Lakeland	500 Peconic St. & 1st Ave.	540	981-1900		1972 E	
Sayville	---	105 Lincoln Ave& 15 Overton Av	24			1973 E	
Sayville	Brookwood Terrace Apts.	14 Easy St. & 198 Greeley Ave.	36	698-2711		1971	
Sayville	Fairfield at Woodview Gardens	60-142 Easy St. & Cherry St.	36	567-6333		1988 E	
Sayville	Fairfield Plaza	194-226 Lakeland Ave.	92	567-6333		<1970	
Sayville	Garfield Apartments	Garfield Ave.	29	567-6333		<1970	
Sayville	Sayville Commons	Adams Way & Sunrise Hwy.	342	218-2397		2002	SRCIT
Sayville	Sayville Gardens	52-78 Hiddink. 69-75 LincolnAv	34	589-2088		<1970	
Sayville	South Bay Manor	333 Candee Ave.	60	567-0800		<1970	
Sayville	Village Court Apartments	47-65 Island Blvd. & Smithtown	60			1973 E	
W Islip	Keith Gardens	533-537 Keith La.	15			<1966	
W Sayville	Dutchman's Cove	Bevelander Pl.& Rollstone Ave.	56	475-1800		1997	SRCIT
W Sayville	Greenview Circle	Greenview Circle & Montauk Hwy	52	244-8113		1989	SRCIT
W Sayville	Sunburst at Savville	Rollstone Ave. & Weaver Rd.	28			<1970	

Total for Town of IS (88 complexes): 8,907

TOWN OF RV APARTMENT COMPLEXES:

Riverhead	---	724, 726 E. Main St.	12			<1970	
Riverhead	Fairfield Pines	1750 W. Main St.	95	369-3884		<1970	
Riverhead	Fairfield Pines West	1355 Roanoke Ave.	168	369-0385		1970	
Riverhead	John Wesley Village II	2 Aldersgate & Middle Road	220	369-2598		1998	SRCIT
Riverhead	John Wesley Village III	Middle Rd.	92	369-2598		2005	SRCIT
Riverhead	Riverhead Landing	1145 Middle Rd. & Osborne Ave.	156	208-0060		1999	SRCIT

Total for Town of RV (6 complexes): 743

TOWN OF SM APARTMENT COMPLEXES:

Commack	Fairfield Village at Commack	Fairfield Way & Commack Rd.	245	462-9150		<1970	
Commack	Mayfair Garden Apts.	Jericho Tpke. & Beechwood La.	106	543-0254		<1970	
Hauppauge	Fairfield at Hauppauge	650-668 Veterans Memorial Hwy.	80	366-3446		<1970	
Hauppauge	Fairfield West	550-562 New Highway & Vets Hwy	92	366-3446		<1970	
Kings Park	Kings Park Manor (Pt.)	Wartburg Dr. & 1st Ave.	242	544-5003		1989	SRCIT

**Apartment Complexes of 10 or More Units
Suffolk County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
Nesconset	Avalon Commons	744 Route 347 & Terry Rd.	316	979-2929		1996	
Nesconset	Enchanted Manor Apts.(Fam.pt)	116 Smithtown Blvd.	41	265-6131		1992	
Nesconset	Enchanted Manor Apts.(Sr. pt.)	116 Smithtown Blvd.	6			1992	SRCIT
Nesconset	Fairhaven Garden Apts.	Fairhaven Dr. & 835 Rte. 347	144	724-4343		<1970	
Saint James	Stonehenge Apartments	196-206 Jefferson Ave.	92	584-7232		<1970	
Smithtown	Fairfield at Smithtown	35-39 Elliot Pl. & Prospect St	48	462-9150		<1966	
Smithtown	Maple Garden Apts.	73-83 Maple Ave.	50			1963	
Smithtown	Sherbrooke at Smithtown	355 Route 111	48	863-0355		1964 E	APTCONV
Smithtown	Willow Lake	44 Route 25A	72	724-1330		1974	
Total for Town of SM (14 complexes):			1,582				

TOWN OF SO APARTMENT COMPLEXES:

Hampton Bays	---	162 Montauk Hwy.	10			1974	
Hampton Bays	Town & Country Apts.	1-128 Lamplight Circle & 27A	128	728-6219		<1970	
Tuckahoe	---	2201 North Rd.	30			<1970	
Westhampton Bch	Country Style Garden Apts.	325 Montauk Hwy. & Mortimer St	24	288-2813		<1970	
Westhampton Bch	Ocean Bay Apartments	Jessup La.	24	288-9395		<1970	
Westhampton Bch	Westhampton Beach Apts.	62 Oak St.	17	288-4578		<1970	
Total for Town of SO (6 complexes):			233				

TOWN OF SU APARTMENT COMPLEXES:

Southold	Colonial Village	52965 Main Rd. & Boisseau Ave.	31	765-3436		<1970	
Total for Town of SU (1 complex):			31				

**Subsidized Apartment Complexes of 10 or More Units
Nassau County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
TOWN OF GC SUBSIDIZED APARTMENT COMPLEXES:							
Glen Cove	Daly Housing	140 Glen Cove Ave.	98	671-3161		1963	FAM
Glen Cove	Harold W. Seidman Sr. Cit. Vill	6-14 Butler St. & Town Path	64	676-9148		1972	SRCIT
Glen Cove	Kennedy Heights	Glen Cove Ave.	48			1952	FAM
Glen Cove	Lee Gray Court	Lee Gray Court & Hill St.	38			1969	FAM
Glen Cove	Samuel Pierce Houses	136 Glen St.	60	795-1888		1981 E	SRCIT
Glen Cove	Stanley Park	Janet La. & Dickson St.	54			1973	FAM
Total for Town of GC (6 complexes):			362				
TOWN OF HE SUBSIDIZED APARTMENT COMPLEXES:							
Baldwin	Brookside Gardens	1810 Grand Ave.	78	546-7110		1970	SRCIT
Baldwin	Holandia Shores Sr. Cit. Hsng.	2878 Grand Ave.	132			1981	SRCIT
Bellmore	Bellmore Gardens	2000 Bellmore Ave. & Martin Av	98	221-9696		1971	SRCIT
E Garden City	(Part of Roosevelt Raceway site)	Merchants Concourse & Corp. Dr	40		UC	2004	SRCIT
E Garden City	(Part of Roosevelt Raceway site)	Merchants Concourse & Corp. Dr	39		UC	2004	AFFORD
E Meadow	Mitchel Houses	1485 Front St.	126	794-2458		1981	SRCIT
Elmont	Westover Gardens	132-158 Elmont Rd. & Hemp.Tpk	130	485-9666		1972	SRCIT
Franklin Square	Dogwood Terrace	1178 Martha Place	104	485-9666		1971	SRCIT
Freeport	Dr. E. Mitchell Mallette Sr. Cit.	100 N. Main St.	100			1976	SRCIT
Freeport	Liberty Park Apts.	Liberty Park Dr. & Liberty Ave	100	223-6010		1974	FAM
Freeport	Moxey A. Rigby Apts.	20-36 Albany Ave. & E.Merrick	100			1958	FAM
Freeport	Peternana Terrace	45 Wallace St. (N/Sunrise Hwy)	97	486-1000		1985	SRCIT
Freeport	Rev. John J. Madden Apts.	250 S. Main St. & Raynor St.	50			1963	SRCIT
Freeport	Rev. Madden Sr. Cit. Apts.	240 S. Main St.	84			1971	SRCIT
Freeport	Rev. Madden Sr. Cit. Apts.	260 S. Main St.	16			1971	SRCIT
Hempstead	---	251 Jackson St. & Washington St	237			1973 E	FAM
Hempstead	Antioch Citadel of Hope	107 James L. Burrell Ave.	36	292-4157		2000	SRCIT
Hempstead	Clinton Court	114-134 Yale St.	32			1973 E	FAM
Hempstead	Clinton Plaza	80 Clinton St.	105		UC	2005	SRCIT
Hempstead	Columbia Commons	123 W. Columbia St. & Main St.	36	486-5600		1996 E	SRCIT
Hempstead	Douglas MacArthur Sr. Village	260 Clinton St.	144	489-8500		1967 E	SRCIT
Hempstead	Gladys Gardens	20,40 Gladys Ave. & Henry St.	30			1972	FAM
Hempstead	Hofstein House at Clinton Court		24			1998	
Hempstead	Parkside Gardens	75 Laurel Ave. & Elm Ave.	81	489-8500		1951	FAM
Hempstead	Totten Towers	20 Totten St. & Greenwich St.	75	489-8500		1972	SRCIT
Hempstead	Woods Edge Apts.	110 & 130 Jerusalem Ave.	126	538-4868		<1964	
Inwood	Bavview Gardens (fam. pt.)	St. George Pl. & Bavview Ave.	28			1972	FAM
Inwood	Bavview Gardens (sr. pt.)	St. George Pl. & Bavview Ave.	17			1972	SRCIT
Inwood	Inwood Gardens (fam. Pt.)	255 Lawrence Ave.	33			1969	FAM
Inwood	Inwood Gardens (sr. pt.)	255 Lawrence Ave.	17			1969	SRCIT
Inwood	Inwood Terrace	385 Bayview Ave. & St. George Pl	176			1970 E	FAM
Inwood	Mary's Manor Sr. Cit. Housing	60 Doughty Blvd. & Bayview Ave	150			1983 E	SRCIT
Island Park	Island Park Sr. Cit. Housing	347 Long Beach Rd.	40	889-7570		1979	SRCIT
Levittown	Newbridge Gardens	555 N. Newbridge Rd.	84	433-5454		1969	SRCIT
Lynbrook	Nathan Hale Senior Village	30 Doxsey Pl.	126	887-7457		1971	SRCIT
N Wantagh	Eastover Garden Sr. Cit. Housin	1150 Seamans Neck Rd.	144	781-3964		1972	SRCIT
Oceanside	Bishop Kellenberg Gardens	2477 Long Beach Rd.	57	486-1000		1984	SRCIT
Oceanside	Mill River Gardens	2900 Rockaway Ave. & Atlantic	106	764-3344		1971	SRCIT
Rockville Ctr	Halandia Court	266-274 N. Centre Ave.	165	536-4767		1979	SRCIT
Rockville Ctr	Mill River House	40 Maine Ave.	95	766-4499		1971	
Rockville Ctr	Mill River House 2	1-20 Meehan La. & N. Centre Av	80	536-3430		1971	FAM
Rockville Ctr	Rockville Manor	579 Merrick Rd.	50	536-3060		1975	SRCIT
Rockville Ctr	Sr. Cit. Housing	274 N. Centre Ave. & Lakeview	163			1978	SRCIT
Roosevelt	Centennial Gardens	2 Babylon Tpk & Centennial Av	50	867-1612		1982	SRCIT
S Valley Stream	Green Acres	400 Flower Rd. & Mayfield La.	120	872-8810		1968	SRCIT
Salisbury	Salisbury Gardens	460 Salisbury Park Dr.	100				SRCIT
Uniondale	Meadowbrook Gardens	750 Jerusalem Ave.	80	485-9666		1971	SRCIT
Uniondale	Park Gardens	840 Uniondale Ave. & Park Ave.	120	538-0797		1970	SRCIT
Uniondale	St. Agnes Village	St. Agnes Rd. & Jerusalem Ave.	75	486-1000		1990	SRCIT

**Subsidized Apartment Complexes of 10 or More Units
Nassau County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
Total for Town of HE (49 complexes):			4,296				
TOWN OF LB SUBSIDIZED APARTMENT COMPLEXES:							
Long Beach	Channel Park Homes	500 Centre St. & National Blvd	108	431-2444		1971	FAM
Long Beach	Michael Valente Apts.	415 National Blvd. & W.Chester	66	431-2444		1971	SRCIT
Long Beach	Morton Cohen Apts	35 E. Broadway	66			1972	SRCIT
Long Beach	Pine Town Houses	29-153 E. Pine St. & Riverside	130	432-8429		1973 E	FAM
Long Beach	Sol Scher Apts.	225 W. Park Ave.	71	431-2444		1925	SRCIT
Long Beach	Sonny Duckman Apts.	175 W. Broadway & Magnolia Blvd	66			1972	SRCIT
Total for Town of LB (6 complexes):			507				
TOWN OF NH SUBSIDIZED APARTMENT COMPLEXES:							
Garden City Prk	Denton Green Sr. Cit. Housing	500 Denton Ave.	131	248-1199		1972	SRCIT
Great Neck	Arrandale	700 Middle Neck Rd.	75	482-2727		1983	SRCIT
Manhasset	Manhasset Valley Residence	155 East Shore Rd.	99	627-5552		1972	SRCIT
Manhasset	Pond View Homes	High St. & Community Dr.	52			1964	FAM
Manhasset	Spinney Hill Homes	Pond Hill Rd. & Community Dr.	102	627-6433		1951	FAM
New Cassel	Apex Senior Citizen Housing	Union Ave. (Brush Hollow Rd.)	28	486-1000		2003	SRCIT
New Cassel	Magnolia Gardens	899 Broadway	90	627-6433		1986	SRCIT
Pt Washington	Cow Bay Housing	Bay Green La. & Harbor Rd.	87	883-1767		1972	
Pt Washington	Harbor Homes	Harbor Rd. & Port Wash. Blvd.	153	767-1026		1951	FAM
Roslyn Heights	Laurel Homes	Laurel St.	71			1958	FAM
Roslyn Heights	Laurel St. Urban Renewal Rede	Laurel St.	104			1978	FAM
Total for Town of NH (11 complexes):			992				
TOWN OF OB SUBSIDIZED APARTMENT COMPLEXES:							
Bethpage	Corsentino Sr. Cit. Housing	7 Burkhardt Ave.	37	349-1003		1972	SRCIT
E Massapequa	Massapequa Sr. Cit. Housing	530 Clocks Blvd., 20 Lake St.	75	349-1003		1972	SRCIT
E Massapequa	TOB Housing (pt.)	203-227 Oakley Ave.	13			1976	FAM
E Massapequa	TOB Housing (pt.)	203-227 Oakley Ave.	159			1976	SRCIT
Farmingdale	Hardscrabble Apts.	400-410 Main St. & Weiden St.	80	293-9736		1984	SRCIT
Hicksville	TOB Sr. Cit. Housing	355 Newbridge Rd.	72	349-1003		1972	SRCIT
Old Bethpage	TOB Sr. Cit. Housing	101-108 Round Swamp Rd.	140	349-1003		1985	SRCIT
Oyster Bay	Housing Authority	41,45 Lexington Ave,96 Orchard	48			1970	SRCIT
Oyster Bay	Housing Authority	50 Glen Cove-Oyster Bay Rd.	48			1971	FAM
Oyster Bay	TOB Sr. Cit. Housing	125 W. Main St.	92	349-1003			SRCIT
Plainedge	TOB Sr. Cit. Housing	50 Hicksville Rd. & Mary La.	36	349-1003		1971	SRCIT
Plainview	Harmon Shepherd Hill	101-115 Central Park Rd.	117	349-1003		1981	SRCIT
Plainview	TOB Sr. Cit. Housing	80 Barnum Ave.	69	349-1003		1974	SRCIT
Syosset	TOB Sr. Cit. Housing	40 Eastwoods Rd.	96	349-1003		1972	SRCIT
Total for Town of OB (14 complexes):			1,082				

**Subsidized Apartment Complexes of 10 or More Units
Suffolk County, New York**

COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	STATUS	YEAR OPENED	COMMENT
TOWN OF BA SUBSIDIZED APARTMENT COMPLEXES:							
Deer Park	Brookview Commons	Common Way & Brook Ave.	208	242-6667		2002	SRCIT
N Amityville	Andpress Plaza (Fam. pt.)	Harrison Ave.	40	789-3780		1983	FAM
N Amityville	Andpress Plaza (Sr. pt.)	Harrison Ave.	10	789-3780		1983	SRCIT
N Amityville	Thea Bowman Residence	Schleigel Ct. & Schleigel Blvd	31	893-5719		1998	SRCIT
W Babylon	Holiday Square Sr.Housing (Pt)	10 Muncy Ave. & Great E. Neck	120	422-6720		1983	SRCIT
Total for Town of BA (5 complexes):			409				
TOWN OF BR SUBSIDIZED APARTMENT COMPLEXES:							
Coram	George Link, Jr. Apts.	Geo. Link Cir.& Mt.Sinai-Coram	76	486-1000		1992	SRCIT
Coram	Homestead Village (Fam. pt.)	Homestead Dr.	381	732-5600		1971	FAM
Coram	Homestead Village (Sr. pt.)	Homestead Dr.	100	732-5600		1971	SRCIT
E Patchogue	Avery Village	Village Dr. & Hewlett Ave.	300	475-7625		1978	SRCIT
Lake Ronkonkom	Brookwood on the Lake	Round Pond Rd. & Hans Blvd.	336	981-5212		1978	SRCIT
Medford	Monsignor Henry J.Reel Village	Christopher Ct. & Southaven Ave	120	475-6285		1994, 2001	SRCIT
Patchogue	Northwood Village	Northwood La. & Rte. 27A	64	475-1800		1978	SRCIT
Ridge	Ridgehaven Village (Fam. pt.)	Ridge Haven Vlg. Dr. & Rte. 25	52	924-0013		1983	FAM
Ridge	Ridgehaven Village (Sr. pt.)	Ridge Haven Vlg. Dr. & Rte. 25	167	924-0013		1983	SRCIT
Selden	St. Joseph's Village	2000 Boyle Rd.	200	732-1279		1979	SRCIT
Total for Town of BR (10 complexes):			1,796				
TOWN OF EH SUBSIDIZED APARTMENT COMPLEXES:							
E Hampton N	Acabonac Apartments	316 Accabonac Rd.	50	329-7427		1999	
E Hampton N	Windmill Village	207 Accabonac Rd.	40	324-7195		1987	SRCIT
E Hampton N	Windmill Village II	219 Accabonac Rd.	47			2002	SRCIT
Montauk	Avallone Apts.	Fort Pond Rd. & Flamingo Ave.	17			1992	FAM
N W Harbor	Whalebone Village Apts.	Boatheaders La.& Springy Banks	45	324-8836		1989	FAM
Total for Town of EH (5 complexes):			199				
TOWN OF HU SUBSIDIZED APARTMENT COMPLEXES:							
Greenlawn	Paumanack Village I, II	Paumanack Village Dr.& Pulaski	289	261-1121		1979	SRCIT
Greenlawn	Paumanack Village III, IV	Duncan Elder Dr. & Pulaski Rd.	137	266-5765		1992	SRCIT
Huntington Sta	Gateway Gardens (Fam. pt.)	1-9 Lowndes Ave.	30	427-6220		1967	FAM
Huntington Sta	Gateway Gardens (Sr. pt.)	1-9 Lowndes Ave.	10	427-6220		1967	SRCIT
Huntington Sta	Lincoln Farm Apts.	123 1st Ave. & 9th St.	30	421-2272		1980	FAM
Huntington Sta	Whitman Village (Fam. pt.)	100-320 Lowndes Ave.	216	549-0330		1973 E	FAM
Huntington Sta	Whitman Village (Sr. pt.)	100-320 Lowndes Ave.	46	549-0330		1973 E	SRCIT
Melville	Millennium Hills (pt.)	Walt Whitman Rd.	40			2004	
Total for Town of HU (8 complexes):			798				
TOWN OF IS SUBSIDIZED APARTMENT COMPLEXES:							
Bay Shore	Bay Towne Village (Fam. pt.)	33 N. Clinton & 5th Ave.	5	665-4885		1982	FAM
Bay Shore	Bay Towne Village (Sr. pt.)	33 N. Clinton & 5th Ave.	144	665-4885		1982	SRCIT
Bay Shore	Hemlock Green	241 W. Main St. & Hemlock St.	13	666-1122		1991	SRCIT
Bay Shore	Penataquit Village	Millpond La. & Union Blvd.	134	589-7100		1971, 1979	SRCIT
Bay Shore	South Wind Village (pt.)	Smith Ave. (Betw Main & Union)	16			2001	
Bay Shore	South Wind Village (pt.)	Smith Ave. (Betw Main & Union)	10			2001	SRCIT
Bay Shore	Tudor Village	Tudor Lane & E. 3rd Ave.	18			1975	FAM
Brentwood	Broadway West	75 Springfield Rd. & 2nd Ave.	114	434-9540		2000,2003	SRCIT
Brentwood	St. Anne's Gardens	80 2nd Ave. & 8th St.	100	434-6535		2000	SRCIT
Brentwood	St. Pauls Gardens	Wicks Rd., adj. to St. Luke's	85	486-1000		1997	SRCIT
Brentwood	Village at Brentwood	79-91 2nd Ave. & 8th St.	100	231-5858		1977	SRCIT
Central Islip	Allyn Robinson Village	Allyn Dr. & Suffolk Ave.	100	589-7100		1978	SRCIT

**Subsidized Apartment Complexes of 10 or More Units
Suffolk County, New York**

<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>STATUS</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
Central Islip	Bishop McGann Village	Carleton Ave.	125	486-1000		1998	SRCIT
Central Islip	Hamilton Village	Allyn Dr. & Suffolk Ave.	46	231-5858		1978	SRCIT
Oakdale	Ockers Gardens	Ockers Dr. & 963 Montauk Hwy.	100	589-7100		1975	SRCIT
Total for Town of IS (15 complexes):			1,110				
TOWN OF RV SUBSIDIZED APARTMENT COMPLEXES:							
Riverhead	Doctors Path Apartments	500 Doctors Path	40	766-3737		1982	FAM
Riverhead	John Wesley Village	1 Aldersgate Rd. & Middle Road	115	727-4220		1981	SRCIT
Riverhead	Millbrook Apts.	821 East Main St.	135	727-6766		<1966	FAM
Total for Town of RV (3 complexes):			290				
TOWN OF SM SUBSIDIZED APARTMENT COMPLEXES:							
Kings Park	Kings Park Manor (Pt.)	Wartburg Dr. & 1st Ave.	45	544-5003		1989	SRCIT
Kings Park	Martin Luther Terrace	Wartburg Ct. & 1st Ave.	115	544-7062		1983	SRCIT
Smithtown	Siena Village	2000 Bishops Rd. & Rte. 25A	298	360-6000		1978	SRCIT
Total for Town of SM (3 complexes):			458				
TOWN OF SO SUBSIDIZED APARTMENT COMPLEXES:							
Hampton Bays	Bishop Ryan Village	10 Squiretown Rd.	74	728-2413		1991	SRCIT
Hampton Bays	Hampton Bays Apartments	57 Springville Rd.	40	728-2242		1983	SRCIT
Hampton Bays	Woodbridge at Hampton Bays	10 Springville Rd.	29	728-5671		1998	SRCIT
Total for Town of SO (3 complexes):			143				
TOWN OF SU SUBSIDIZED APARTMENT COMPLEXES:							
Greenport	Lakeside Gardens	North St. & Kaplan Ave.	16			1987	FAM
Total for Town of SU (1 complex):			16				

Senior Citizen Multi-Unit Housing Complexes Nassau County, New York

TYPE OF HOUSING	COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	YEAR OPENED	COMMENT
Town of GC:							
COND	Glen Cove	Cambridge Court Condominium	Glen St., S/ Pearsall Ave.	50	671-0413	1998	SRCIT
SAPT	Glen Cove	Harold W. Seidman Sr. Cit. Village	6-14 Butler St. & Town Path	64	676-9148	1972	SRCIT
SAPT	Glen Cove	Samuel Pierce Houses	136 Glen St.	60	795-1888	1981 E	SRCIT
Total for Town of GC (3 complexes):				174			
Town of HE:							
SAPT	Baldwin	Brookside Gardens	1810 Grand Ave.	78	546-7110	1970	SRCIT
SAPT	Baldwin	Holandia Shores Sr. Cit. Hsng.	2878 Grand Ave.	132		1981	SRCIT
COOP	Baldwin	Milburn Estates	Milburn Ave. & Sunrise Hwy.	21		2003	SRCIT
COOP	Baldwin Harbor	Harbour Cove	Webster St. & Verity La.	60	485-9666	1996	SRCIT
SAPT	Bellmore	Bellmore Gardens	2000 Bellmore Ave. & Martin Av	98	221-9696	1971	SRCIT
SAPT	E Garden City	(Part of Roosevelt Raceway site)	Merchants Concourse & Corp. Dr	40		UC 2004	SRCIT
COND	E Garden City	Meadowbrook Pointe	Corporate Dr. & Merchants Conc	720	843-7646	PRE 2005	SRCIT
COOP	E Meadow	Knolls of East Meadow	555 Salisbury Park Dr.	240	794-7006	1994	SRCIT
COOP	E Meadow	Knolls of East Meadow IV	425 Salisbury Park Dr.	102	485-9666	1999	SRCIT
COOP	E Meadow	Meadows at Mitchel Field, The	250 Merrick Ave.	438	794-0440	1998	SRCIT
SAPT	E Meadow	Mitchel Houses	1485 Front St.	126	794-2458	1981	SRCIT
COND	E Meadow	The Bel-Aire	50 Merrick Ave. & Glen Curtiss	95	542-1051	2005	SRCIT
COOP	Elmont	(Golden Age)	Elmont Rd.	29		UC 2005	SRCIT
SAPT	Elmont	Westover Gardens	132-158 Elmont Rd. & Hemp.Tpke	130	485-9666	1972	SRCIT
APT	Floral Park	---	1 Depan Ave.	27		1997	SRCIT
APT	Floral Park	St. Hedwig's Gardens	8 Linden Ave.	27	486-1000	1998	SRCIT
SAPT	Franklin Square	Dogwood Terrace	1178 Martha Place	104	485-9666	1971	SRCIT
APT	Franklin Square	Renken Apartments	1140 Hempstead Tpke.	48	352-4252	1990	SRCITCONG
SAPT	Freeport	Dr. E. Mitchell Mallette Sr. Cit.	100 N. Main St.	100		1976	SRCIT
SAPT	Freeport	Peternana Terrace	45 Wallace St. (N/Sunrise Hwy)	97	486-1000	1985	SRCIT
SAPT	Freeport	Rev. John J. Madden Apts.	250 S. Main St. & Raynor St.	50		1963	SRCIT
SAPT	Freeport	Rev. Madden Sr. Cit. Apts.	240 S. Main St.	84		1971	SRCIT
SAPT	Freeport	Rev. Madden Sr. Cit. Apts.	260 S. Main St.	16		1971	SRCIT
SAPT	Hempstead	Antioch Citadel of Hope	107 James L. Burrell Ave.	36	292-4157	2000	SRCIT
SAPT	Hempstead	Clinton Plaza	80 Clinton St.	105		UC 2005	SRCIT
SAPT	Hempstead	Columbia Commons	123 W. Columbia St. & Main St.	36	486-5600	1996 E	SRCIT
SAPT	Hempstead	Douglas MacArthur Sr. Village	260 Clinton St.	144	489-8500	1967 E	SRCIT
APT	Hempstead	Greenwich Gardens	155 Greenwich St. & Cruikshank	294	489-5480	1977	SRCIT
APT	Hempstead	Rivoli House	145 Main St. at Columbia	112		1997	SRCIT
SAPT	Hempstead	Totten Towers	20 Totten St. & Greenwich St.	75	489-8500	1972	SRCIT
SAPT	Inwood	Bayview Gardens (sr. pt.)	St. George Pl. & Bayview Ave.	17		1972	SRCIT
SAPT	Inwood	Inwood Gardens (sr. pt.)	255 Lawrence Ave.	17		1969	SRCIT
SAPT	Inwood	Mary's Manor Sr. Cit. Housing	60 Doughty Blvd. & Bayview Ave	150		1983 E	SRCIT
SAPT	Island Park	Island Park Sr. Cit. Housing	347 Long Beach Rd.	40	889-7570	1979	SRCIT
SAPT	Levittown	Newbridge Gardens	555 N. Newbridge Rd.	84	433-5454	1969	SRCIT
COOP	Levittown	Victorians of Levittown	Gardiners Ave.	33		UC 2003	SRCIT
SAPT	Lynbrook	Nathan Hale Senior Village	30 Doxsey Pl.	126	887-7457	1971	SRCIT

TYPE OF HOUSING	COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	YEAR OPENED	COMMENT
COOP	N Bellmore	Victorian Homes	Doria La., 1830 Bellmore Ave.	23	485-9666	2000	SRCIT
COOP	N Merrick	Victorians, The	Jerusalem Ave. & North Dr.	34		2001	SRCIT
COOP	N Valley Stream	Meadows, The	Dutch Broadway & Ascan St.	104		2001	SRCIT
SAPT	N Wantagh	Eastover Garden Sr. Cit. Housing	1150 Seamans Neck Rd.	144	781-3964	1972	SRCIT
SAPT	Oceanside	Bishop Kellenberg Gardens	2477 Long Beach Rd.	57	486-1000	1984	SRCIT
COOP	Oceanside	Knolls of Oceanside		120		1997 E	SRCIT
SAPT	Oceanside	Mill River Gardens	2900 Rockaway Ave. & Atlantic	106	764-3344	1971	SRCIT
COOP	Oceanside	Oceanside Cove (pt.)	100 Daly Blvd. & Cove Dr.	120	485-9666	1995	SRCIT
SAPT	Rockville Ctr	Halandia Court	266-274 N. Centre Ave.	165	536-4767	1979	SRCIT
SAPT	Rockville Ctr	Rockville Manor	579 Merrick Rd.	50	536-3060	1975	SRCIT
SAPT	Rockville Ctr	Sr. Cit. Housing	274 N. Centre Ave. & Lakeview	163		1978	SRCIT
SAPT	Roosevelt	Centennial Gardens	2 Babylon Tpk & Centennial Av	50	867-1612	1982	SRCIT
SAPT	S Valley Stream	Green Acres	400 Flower Rd. & Mayfield La.	120	872-8810	1968	SRCIT
SAPT	Salisbury	Salisbury Gardens	460 Salisbury Park Dr.	100			SRCIT
COOP	Seaford	Cedar Cove	2601 Cedar St. & Iona St.	72	679-5949	1992	SRCIT
SAPT	Uniondale	Meadowbrook Gardens	750 Jerusalem Ave.	80	485-9666	1971	SRCIT
SAPT	Uniondale	Park Gardens	840 Uniondale Ave. & Park Ave.	120	538-0797	1970	SRCIT
SAPT	Uniondale	St. Agnes Village	St. Agnes Rd. & Jerusalem Ave.	75	486-1000	1990	SRCIT
COOP	W Hempstead	(Golden Age)	Oriole Ave., S/Eagle Ave.	56		2004	SRCIT

Total for Town of HE (56 complexes):

5,890

Town of LB :

SAPT	Long Beach	Michael Valente Apts.	415 National Blvd. & W.Chester	66	431-2444	1971	SRCIT
SAPT	Long Beach	Morton Cohen Apts	35 E. Broadway	66		1972	SRCIT
SAPT	Long Beach	Sol Scher Apts.	225 W. Park Ave.	71	431-2444	1925	SRCIT
SAPT	Long Beach	Sonny Duckman Apts.	175 W. Broadway & Magnolia Bvd	66		1972	SRCIT

Total for Town of LB (4 complexes):

269

Town of NH:

COND	Albertson	Willis Terrace	800 Willis Ave.	60	747-1997	1984	SRCIT
SAPT	Garden City Prk	Denton Green Sr. Cit. Housing	500 Denton Ave.	131	248-1199	1972	SRCIT
SAPT	Great Neck	Arrandale	700 Middle Neck Rd.	75	482-2727	1983	SRCIT
SAPT	Manhasset	Manhasset Valley Residence	155 East Shore Rd.	99	627-5552	1972	SRCIT
SAPT	New Cassel	Apex Senior Citizen Housing	Union Ave. (Brush Hollow Rd.)	28	486-1000	2003	SRCIT
SAPT	New Cassel	Magnolia Gardens	899 Broadway	90	627-6433	1986	SRCIT
COND	New Cassel	Tiffany, The	54 School St. & Old Country Rd	79	997-0097	1992	SRCIT
APT	Pt Washington	Hadley House Apts.	464 Main St. & 5th Ave.	41	944-6808	1983	SRCIT
COND	Pt Washington	Harbor View	Harbor View Dr.&West Shore Rd.	270		UC 2002	SRCIT
COND	Pt Washington	Port Harbor	372 Main St.	36	944-3595	1982	SRCIT
COND	Pt Washington N	Mill Pond Acres	Harbor Rd. & Pleasant Ave.	250	921-2262	2005	SRCIT
APT	Roslyn	Horizon at Roslyn	Landing Rd.	49		UC 2005	SRCIT
APT	Roslyn	Sterling Glen at Roslyn	100 Landing Rd.	158	626-6900	UC 2004	SRCIT

Total for Town of NH (13 complexes):

1,366

Town of OB :

COOP	Bethpage	Apollo	1969 Grumman Rd. E. & Central	220		2000	SRCIT
COOP	Bethpage	Central Park Estates	Amalia Ct. & Powell Ave.	52	624-6176	1996	SRCIT

<i>TYPE OF HOUSING</i>	<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
SAPT	Bethpage	Corsentino Sr. Cit. Housing	7 Burkhardt Ave.	37	349-1003	1972	SRCIT
COOP	Bethpage	Sunnylane of Bethpage	400 Central Ave. & Sunny La.	300	349-7047	1997	SRCIT
COOP	E Massapequa	County Line Villas	Merrick Rd. & County Line Rd.	46	UC	2002	SRCIT
SAPT	E Massapequa	Massapequa Sr. Cit. Housing	530 Clocks Blvd., 20 Lake St.	75	349-1003	1972	SRCIT
SAPT	E Massapequa	TOB Housing (pt.)	203-227 Oakley Ave.	159		1976	SRCIT
COND	Farmingdale	Elizabeth Ann Gardens	197 Fulton St. & Conklin St.	20	6317242424	2003	SRCIT
APT	Farmingdale	Grand Haven	262 Eastern Pkwy.	23	903-6400	2003	SRCIT
SAPT	Farmingdale	Hardscrabble Apts.	400-410 Main St. & Weiden St.	80	293-9736	1984	SRCIT
APT	Farmingdale	Silver Manor	81 Secatogue Ave.	49	779-1771	2002	SRCIT
APT	Farmingdale	Woodbridge at Farmingdale	477-481 Fulton St.	28	6316677636	1997	SRCIT
APT	Farmingdale	Woodbridge II	461 Fulton St.	62	6316677636	2000	SRCIT
COOP	Hicksville	Cambridge Court	Nicole Ct. & S. Oyster Bay Rd.	136	624-6176	2003	SRCIT
SAPT	Hicksville	TOB Sr. Cit. Housing	355 Newbridge Rd.	72	349-1003	1972	SRCIT
COOP	Massapequa Park	Whitewood Landing	Whitewood Dr. & Merrick Rd.	48	798-0244	2001	SRCIT
SAPT	Old Bethpage	TOB Sr. Cit. Housing	101-108 Round Swamp Rd.	140	349-1003	1985	SRCIT
SAPT	Oyster Bay	Housing Authority	41,45 Lexington Ave,96 Orchard	48		1970	SRCIT
SAPT	Oyster Bay	TOB Sr. Cit. Housing	125 W. Main St.	92	349-1003		SRCIT
SAPT	Plainedge	TOB Sr. Cit. Housing	50 Hicksville Rd. & Mary La.	36	349-1003	1971	SRCIT
COND	Plainview	Hamlet on Olde Oyster Bay	L.I.E. & Round Swamp Rd.	250		2001	SRCIT
SAPT	Plainview	Harmon Shepherd Hill	101-115 Central Park Rd.	117	349-1003	1981	SRCIT
SAPT	Plainview	TOB Sr. Cit. Housing	80 Barnum Ave.	69	349-1003	1974	SRCIT
SAPT	Syosset	TOB Sr. Cit. Housing	40 Eastwoods Rd.	96	349-1003	1972	SRCIT
COOP	Woodbury	Woodbury Cove	500 Park Ave. & Jericho Tpke.	100	624-6176	1999	SRCIT
COOP	Woodbury	Woodbury Gardens	Jericho Tpke (E. of Fairhaven)	214	624-6170	2001	SRCIT
COOP	Woodbury	Woodbury Meadows	Carnegie Ct. & Woodbury Rd.	114	624-6176	2001	SRCIT
Total for Town of OB (27 complexes):				2,683			

Senior Citizen Multi-Unit Housing Complexes Suffolk County, New York

TYPE OF HOUSING	COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	YEAR OPENED	COMMENT
Town of BA :							
APT	Amityville	Amity Oaks	Noelle Ct. & Oak St.	36	207-0880	1999	SRCIT
COND	Amityville	Snug Harbor	Harbor St. & S. Bayview Ave.	176	691-6034	1974	SRCIT
COND	Amityville	Village Estates	Sunrise Hwy. & County Line Rd.	135		2004	UC SRCIT
APT	Babylon	Goose Bay Apartments	99 Prospect St.	40	669-4231	1984	SRCIT
APT	Copiague	Bunt Commons II	Marconi Blvd. & Wartburg Ave.	123		2002	UC SRCIT
COND	Copiague	Cambridge Square	Cambridge Dr. & 375 Scudder Av	203	842-1108	1987	SRCIT
APT	Copiague	Lakeside Manor	75-105 Cedar Ct. & Howard Ave.	55	842-0177	1985	SRCIT
APT	Deer Park	Babylon Park Center	Park Center Dr. & Carrls Path	72	586-1469	1978	SRCIT
SAPT	Deer Park	Brookview Commons	Common Way & Brook Ave.	208	242-6667	2002	SRCIT
APT	Deer Park	Manor Park I, II	215 Carlls Path & Commack Rd.	215	242-4600	1983,1986	SRCIT
APT	E Farmingdale	Farmingdale Villas	Genova Ct. & 975 Main St.	268	843-0307	1999	SRCIT
APT	Lindenhurst	---	183 N. Wellwood Ave.	10		2000	SRCIT
APT	Lindenhurst	Bunt Commons	150 N. Broadway & School St.	50		1989	SRCIT
APT	Lindenhurst	Gail Grace Manor	Washington Ave. & Montauk Hwy.	21	957-5106	2002	SRCIT
COND	Lindenhurst	Villas at Narragansett	Montauk Hwy. & S. Greene Ave.	138	956-3500	2004	SRCIT
APT	N Amityville	Amity Senior	110 Cedar Rd.	67	841-0946	1991	SRCIT
SAPT	N Amityville	Andress Plaza (Sr. pt.)	Harrison Ave.	10	789-3780	1983	SRCIT
APT	N Amityville	Dominican Village	565-595 Albany Ave.	266	842-6091	1995	SRCITCONG
APT	N Amityville	Krystie Manor	865 County Line Rd.& Ritter Av	62	841-0744	1988	SRCIT
APT	N Amityville	Nu Horizons Manor (Sr. pt.)	Cassata Dr. & New Hwy.	80	225-9130	1997	SRCIT
APT	N Amityville	Southwood at Amityville	25 Brefni St.	174	789-3433	1985,2003	SRCIT
SAPT	N Amityville	Thea Bowman Residence	Schleigel Ct. & Schleigel Blvd	31	893-5719	1998	SRCIT
COND	N Babylon	Primrose Lane	Primrose La. & Weeks Rd.	64	242-8951	1988	SRCIT
APT	N Babylon	Weeks Manor I	15 Weeks Rd.	62	586-0127	1981	SRCIT
APT	N Lindenhurst	Monroe Gardens	N. Monroe Ave.	86	666-1122	1995	SRCIT
APT	N Lindenhurst	Sunrise Villas	Leonard Ct. & Farmers Ave.	100	226-5555	1997	SRCIT
APT	W Babylon	Bay-Point Apts.	Bay Point Ct. & Muncie Rd.	55	669-6100	1994	SRCIT
APT	W Babylon	Evergreen Garden Apts.	Athens Ct & Great East Neck Rd	48	422-5122	1988	SRCIT
APT	W Babylon	Fairfield Maples South	850 Little East Neck Rd.	48	587-6464	1985	SRCIT
APT	W Babylon	Great South Bay Villas	Great East Neck Rd. & RR Ave.	44		2002	SRCIT
APT	W Babylon	Holiday Square Sr.Housing (Pt)	10 Muncy Ave. & Great E. Neck	5	422-6720	1983	SRCIT
SAPT	W Babylon	Holiday Square Sr.Housing (Pt)	10 Muncy Ave. & Great E. Neck	120	422-6720	1983	SRCIT
APT	W Babylon	Karis Manor	730 S. Railroad Ave.	46	666-1122	1985	SRCIT
APT	W Babylon	Manor Park V	Nicole Pl. & Hubbards Path	62	661-1483	1988	SRCIT
APT	W Babylon	Maplewood Village	870 Little East Neck Rd.	48		1988	SRCIT
APT	W Babylon	Platt Gardens	Route 109 & Platt Ave.	34	218-6440	2005	UC SRCIT
APT	W Babylon	Shur Commons (Beaver Lake)	Route 109 & Badger La.	74		2004	UC SRCIT
APT	W Babylon	South Shore Commons (Sr. pt.)	Rogers Ct. & Rte. 109	114	321-7191	1995	SRCIT
APT	W Babylon	West Babylon Manor	Cassata Ct. & Rte. 109	148	669-0207	1986	SRCIT
APT	Wheatley Hgts	Wheatley Hollow Gardens	50 Colonial Springs Rd.	72	643-8854	1981	SRCIT
APT	Wyandanch	Belmont Villas	Wyandanch Ave.	164	643-3570	2005	UC SRCIT

Total for Town of BA (41 complexes):

3,834

TYPE OF HOUSING	COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	YEAR OPENED	COMMENT
Town of BR :							
COND	Blue Point	Springhorn	Oyster Cove La. & Blue Pt. Av.	70	363-0139	2000	SRCIT
APT	Centereach	Jefferson's Ferry	Route 347 (South Setauket)	248	246-9522	2001	LIFECARE
APT	Centereach	North Shore	4089 Nesconset Hwy.& Arrowhead	99	473-8000	1989	SRCITCONG
COND	Coram	Country Village	Theodore Dr. & Mooney Pond Rd.	195	698-9022	1993	SRCIT
APT	Coram	Fairfield Knolls South	Route 112 & Pine Rd.	173	451-1282	2005	SRCIT
SAPT	Coram	George Link, Jr. Apts.	Geo. Link Cir.& Mt.Sinai-Coram	76	486-1000	1992	SRCIT
SAPT	Coram	Homestead Village (Sr. pt.)	Homestead Dr.	100	732-5600	1971	SRCIT
COND	Coram	Oaks at Hawkins Path, The	Hawkins Path (at Sandpiper La)	37	744-5900	2004	UC SRCIT
APT	Coram	Pinewood Estates	Coram-Swezeytown Rd.	200	736-8515	2003	SRCIT
COND	Coram	Strathmore Gate East	Freemont La.& Old Town, C.R.83	175	736-3810	1972	SRCIT
APT	E Moriches	Walden Pond at East Moriches	Walden Ct. & 181 Frowein Rd.	323	874-7500	2003	SRCIT
SAPT	E Patchogue	Avery Village	Village Dr. & Hewlett Ave.	300	475-7625	1978	SRCIT
APT	E Patchogue	Conifer Village	1 Brookwood La. & C.R. 101	174	207-4477	2003	SRCIT
APT	E Patchogue	La Bonne Vie II	La Bonne Vie Dr. & Hospital Rd	800	289-4400	1975, 1982	SRCIT
COND	Eastport	Encore Atlantic Shores	Symphony Ct. & C. R. 51	240	325-1616	2005	SRCIT
COND	Lake Grove	Villages at Lake Grove	Moriches Rd. & Route 347	228		2005	UC SRCIT
SAPT	Lake Ronkonkoma	Brookwood on the Lake	Round Pond Rd. & Hans Blvd.	336	981-5212	1978	SRCIT
APT	Lake Ronkonkoma	Hertlin House	Portion Rd. & Cenacle Rd.	120	981-1880	2003	SRCITCONG
APT	Lake Ronkonkoma	Waterfalls, The	Cassata Rd. & Smith Rd.	318	738-6700	1999	SRCIT
COND	Manorville	Country Pointe Woods	Oceanview Blvd&Eastport MnrRd.	36	325-2121	2003	SRCIT
COND	Manorville	Greenwood Village	Chapman Blvd. & Railroad Ave.	500	878-4200	1981	SRCIT-SF
APT	Mastic	Rivers Edge at Moriches	1745 Old Montauk Hwy.	37	399-7275	1992	SRCIT
SAPT	Medford	Monsignor Henry J.Reel Village	Christopher Ct.& Southaven Ave	120	475-6285	1994, 2001	SRCIT
APT	Middle Island	Eagleview Court	Robin Dr. & Middle County Rd.	150	205-1256	1999	SRCIT
COND	Miller Place	Villages at Mount Sinai	Village Dr.&Mt.Sinai-Coram Rd.	185	331-2677	2005	UC SRCIT-SF
COND	Miller Place	Vineyards at Miller Place, The	Rte. 25A & Sylvan Ave.	85	331-6080	2005	UC SRCIT
COND	Moriches	Waterways at Moriches	Oak Bluff Ct. & Bay Pointe Dr.	346	874-2356	1988,2000	SRCIT
COND	Mount Sinai	Plymouth Estates at Mt. Sinai	Canal Rd. & C.R. 83	285	331-4196	2005	PRE SRCIT
COND	Mount Sinai	Woodridge Terrace	Chippendale Dr. & Plymouth Ave	231	331-1208	1975, 1985	SRCIT
APT	Patchogue	Fairfield at West Lake	311 W. Main St.	37	758-2866	2002	SRCIT
SAPT	Patchogue	Northwood Village	Northwood La. & Rte. 27A	64	475-1800	1978	SRCIT
COND	Pt Jeffersn Sta	Setauket Meadows	Hulse Rd. & Comsewogue Rd.	150	474-5300	2004	UC SRCIT
APT	Pt Jeffersn Sta	Wisdom Gardens	115 Terryville Rd.	40	476-0013	2002	SRCIT
COND	Ridge	Leisure Glen	Glen Dr. & Randall Rd.	646	744-4988	1987, 1999	SRCIT
COND	Ridge	Leisure Knoll	Sheffield Dr. & Whiskey Rd.	701	744-6000	1972	SRCIT-SF
COND	Ridge	Leisure Village	Bridgewater Dr. & Whiskey Rd.	1500	744-0473	1970	SRCIT
SAPT	Ridge	Ridgehaven Village (Sr. pt.)	Ridge Haven Vlg. Dr. & Rte. 25	167	924-0013	1983	SRCIT
SAPT	Selden	St. Joseph's Village	2000 Boyle Rd.	200	732-1279	1979	SRCIT
COND	Stony Brook	Knolls at Stony Brook, The	Knolls Dr. & Oxhead Rd.	180	689-7439	1983	SRCIT
COND	Stony Brook	Oaks at Stony Brook, The	Oxhead Rd. & Pembroke Dr.	45	744-5900	2004	UC SRCIT
COND	Stony Brook	Strathmore Gate	Strathmore Gate & Stony Brk Rd	150	689-5924	1971	SRCIT
APT	Terryville	Fairfield Knolls North	Village Green Dr. & Rte. 347	291	331-4407	2003	SRCIT
APT	Terryville	Woodcrest Estates	Woodcrest Dr. & Route 347	256	473-4114	2000	SRCIT-AFFOR

Total for Town of BR (43 complexes):

10,614

Town of EH:

TYPE OF HOUSING	COMMUNITY	NAME	ADDRESS	UNITS	TELEPHONE	YEAR OPENED	COMMENT
SAPT	E Hampton N	Windmill Village	207 Accabonac Rd.	40	324-7195	1987	SRCIT
SAPT	E Hampton N	Windmill Village II	219 Accabonac Rd.	47		2002	SRCIT

Total for Town of EH (2 complexes): **87**

Town of HU:

COND	Dix Hills	Stone Ridge Estates	Deer Park Ave.	78	667-7636	2003	UC SRCIT
SAPT	Greenlawn	Paumanack Village I, II	Paumanack Village Dr. & Pulaski	289	261-1121	1979	SRCIT
SAPT	Greenlawn	Paumonack Village III, IV	Duncan Elder Dr. & Pulaski Rd.	137	266-5765	1992	SRCIT
SAPT	Huntington Sta	Gateway Gardens (Sr. pt.)	1-9 Lowndes Ave.	10	427-6220	1967	SRCIT
SAPT	Huntington Sta	Whitman Village (Sr. pt.)	100-320 Lowndes Ave.	46	549-0330	1973	E SRCIT
COND	Melville	Cove at Melville, The	Walt Whitman Rd. & Park Dr.	175		2004	SRCIT
COND	Melville	Greens at Half Hollow, The	Half Hollow Rd. & Old South Path	1100	385-7575	2004	SRCIT
APT	Melville	Highlands at Huntington Terrace	70 Pinelawn Rd. & L. I. E.	55	297-6813	2002	SRCIT
COOP	Melville	Knolls of Melville	Cody Dr. & Round Swamp Rd.	228	5167450150	1997	SRCIT

Total for Town of HU (9 complexes): **2,118**

Town of IS :

SAPT	Bay Shore	Bay Towne Village (Sr. pt.)	33 N. Clinton & 5th Ave.	144	665-4885	1982	SRCIT
APT	Bay Shore	Brook Gardens	June Ct. & Brook Ave.	96	789-0707	1984	SRCIT
APT	Bay Shore	Fairfield Renaissance	55 5th Ave.	14	587-6096	1998	SRCIT
SAPT	Bay Shore	Hemlock Green	241 W. Main St. & Hemlock St.	13	666-1122	1991	SRCIT
SAPT	Bay Shore	Penataquit Village	Millpond La. & Union Blvd.	134	589-7100	1971, 1979	SRCIT
APT	Bay Shore	Saxon Green	16,18,20 Union Blvd & Saxon Ave	76	666-1122	1997	SRCIT
SAPT	Bay Shore	South Wind Village (pt.)	Smith Ave. (Betw Main & Union)	10		2001	SRCIT
COND	Bay Shore	Windcrest on the Lake	Joyces Way & Saxon Ave.	43	665-1500	1997	SRCIT
APT	Bayport	Fairway Manor	Clubhouse Dr. & Sunrise Hwy.	394	363-6918	1996, 2001	SRCIT
COND	Bayport	Oakwood Homes	327-349 Oakwood Ave. & 27A	12		1996	SRCIT
COND	Bohemia	Hedges, The	Church St. & Locust Ave.	20	589-1135	1992	SRCIT
SAPT	Brentwood	Broadway West	75 Springfield Rd. & 2nd Ave.	114	434-9540	2000,2003	SRCIT
SAPT	Brentwood	St. Anne's Gardens	80 2nd Ave. & 8th St.	100	434-6535	2000	SRCIT
SAPT	Brentwood	St. Pauls Gardens	Wicks Rd., adj. to St. Luke's	85	486-1000	1997	SRCIT
SAPT	Brentwood	Village at Brentwood	79-91 2nd Ave. & 8th St.	100	231-5858	1977	SRCIT
SAPT	Central Islip	Allyn Robinson Village	Allyn Dr. & Suffolk Ave.	100	589-7100	1978	SRCIT
SAPT	Central Islip	Bishop McGann Village	Carleton Ave.	125	486-1000	1998	SRCIT
APT	Central Islip	Court Plaza Senior Apts.	1 Hoppen Dr. & Carleton Ave.	153	232-0802	2003	SRCIT-AFFOR
SAPT	Central Islip	Hamilton Village	Allyn Dr. & Suffolk Ave.	46	231-5858	1978	SRCIT
COND	Central Islip	Islip Landing (pt.)	Belt Dr. East	67	297-8008	2005	PRE SRCIT
COOP	E Islip	Bel-Laurel	20 Laurel Ave. & Union Blvd.	85	227-1315	1986	SRCIT
APT	E Islip	Carleton Green	25 Carleton Ave., N/27A	12	666-1122	2000	SRCIT
APT	E Islip	Main Street Gardens	Montauk Hwy. & Carleton Ave.	26	277-7733	2002	UC SRCIT
APT	Islip	Greenview Village	Nikia Dr., Chelsea Dr & Moffitt	212	224-8978	1994,1999	SRCIT
APT	Islip	Locustwood Green	24 Locust Ave. & Grant Ave.	36	666-1122	1989	SRCIT
APT	Islip	Oakwood Manor	Justine Ct. & Oakwood Blvd.	120	968-8360	1997	SRCIT
APT	Oakdale	Brookwood at Oakdale	Patricia Ct. & Race Pl.	88	698-2711	1988	SRCIT
APT	Oakdale	Greenview Commons	Meredith La. & Sunrise Hwy.	163	244-8113	2000	SRCIT
APT	Oakdale	Greenview Court	Greenview Ct. & Oakdale-Bohemia	68	218-1771	1997	SRCIT
SAPT	Oakdale	Ockers Gardens	Ockers Dr. & 963 Montauk Hwy.	100	589-7100	1975	SRCIT
APT	Sayville	Sayville Commons	Adams Way & Sunrise Hwy.	342	218-2397	2002	SRCIT

<i>TYPE OF HOUSING</i>	<i>COMMUNITY</i>	<i>NAME</i>	<i>ADDRESS</i>	<i>UNITS</i>	<i>TELEPHONE</i>	<i>YEAR OPENED</i>	<i>COMMENT</i>
COND	Sayville	Sunrise Village	Revere Dr. & Lincoln Ave.	213	589-2727	1985	SRCIT
APT	W Sayville	Dutchman's Cove	Bevelander Pl.& Rollstone Ave.	56	475-1800	1997	SRCIT
APT	W Sayville	Greenview Circle	Greenview Circle & Montauk Hwy	52	244-8113	1989	SRCIT
COND	W Sayville	Windmill Gate	Windmill Gate & Locust Ave.	110	563-8349	1989	SRCIT-SF

Total for Town of IS (35 complexes): **3,529**

Town of RV :

COND	Calverton	Foxwood Village	Middle Rd. & Mill Rd.	244	369-2424	1986,2004	SRCIT-SF
COND	Calverton	Windcrest East	Middle Rd. & Mill Rd.	126	369-6626	2003	UC SRCIT-SF
SAPT	Riverhead	John Wesley Village	1 Aldersgate Rd. & Middle Road	115	727-4220	1981	SRCIT
APT	Riverhead	John Wesley Village II	2 Aldersgate & Middle Road	220	369-2598	1998	SRCIT
APT	Riverhead	John Wesley Village III	Middle Rd.	92	369-2598	2005	SRCIT
APT	Riverhead	Riverhead Landing	1145 Middle Rd. & Osborne Ave.	156	208-0060	1999	SRCIT
COND	Riverhead	Saddle Lakes	Saddle Lakes Dr. & Middle Rd.	196	727-7935	2001	SRCIT
COND	Riverhead	Sunken Pond Estates	Middle Rd.	192	208-9340	2003	SRCIT

Total for Town of RV (8 complexes): **1,341**

Town of SM:

APT	Kings Park	Kings Park Manor (Pt.)	Wartburg Dr. & 1st Ave.	242	544-5003	1989	SRCIT
SAPT	Kings Park	Kings Park Manor (Pt.)	Wartburg Dr. & 1st Ave.	45	544-5003	1989	SRCIT
SAPT	Kings Park	Martin Luther Terrace	Wartburg Ct. & 1st Ave.	115	544-7062	1983	SRCIT
APT	Nesconset	Enchanted Manor Apts.(Sr. pt.)	116 Smithtown Blvd.	6		1992	SRCIT
COND	Saint James	Fairfield at St. James	Fairfield Dr. & Moriches Rd.	674	862-8502	1976,1986	SRCIT
SAPT	Smithtown	Siena Village	2000 Bishops Rd. & Rte. 25A	298	360-6000	1978	SRCIT

Total for Town of SM (6 complexes): **1,380**

Town of SO :

COND	E Quogue	Eagle's Walk	Old Country Rd.& Bennett Dr.	67	723-3197	2003	UC SRCIT
SAPT	Hampton Bays	Bishop Ryan Village	10 Squiretown Rd.	74	728-2413	1991	SRCIT
SAPT	Hampton Bays	Hampton Bays Apartments	57 Springville Rd.	40	728-2242	1983	SRCIT
SAPT	Hampton Bays	Woodbridge at Hampton Bays	10 Springville Rd.	29	728-5671	1998	SRCIT
COND	Remsenb-Speonk	Westhampton Pines	Old Country Rd.	189	653-7400	2002	PRE SRCIT-SF

Total for Town of SO (5 complexes): **399**

Town of SU :

COOP	Greenport W	Peconic Landing at Southold	Main Rd.(Adj to Island End CC)	250	765-9150	2003	LIFECARE
COND	Southold	Founders Village	2555 Youngs Ave. & Founders La	92	765-1719	1984	SRCIT

Total for Town of SU (2 complexes): **342**

Appendix D
Literature Review Results

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Introduction

This document summarizes the literature review conducted for the study *Access to Transportation on Long Island*. The literature review was conducted on three main topics as follows:

- Obligations and government recommendations for providing access to transportation. Federal government regulations were reviewed to assess the extent of mandatory service to be provided as designated in different regulations including Title VI of the Civil Rights Act of 1964, the Department of Transportation (DOT) Environmental Justice Order, and the Americans with Disabilities Act (ADA). Guidance and policies from New York State and NYMTC were also reviewed.
- Transit industry standards and guidelines for the suitability of fixed route and demand response service. Several sources were consulted to identify industry standards regarding the suitability of fixed route and demand response services in areas with different characteristics. These standards were often based on residential and employment densities. Sources included the *Transit Capacity and Quality of Service Manual*, other Transit Cooperative Research Program publications, technical papers from various transit publications, and internet information from various transit-related websites.
- Area-specific mobility visions, goals, and standards. The literature review revealed a number of examples of state or county-level goals for the type or level of mobility to be provided to residents. Examples of specific standards that are used in particular areas, or by particular transit providers, to define the most desirable level of transit service or performance, were identified as well.

The following three sections of this report correspond to each of the topics outlined above. Each section contains a brief summary at the beginning, which describes the main points learned from the literature review, followed by a section discussing each of the documents reviewed under that category. The last section provides a summary of how these three topics can be used to define adequate access and identifies next steps in the process of establishing a definition of adequate access for Long Island. A technical appendix, included as Appendix E to the *Access to Transportation on Long Island Technical Report*, provides additional details and direct legislative and policy language for most of the laws and examples included in this summary.

Obligations and Government Recommendations for Providing Access to Transportation

Regulations and statements issued by the government at the federal, state, and local level were reviewed to determine the obligations for providing access to transportation on Long Island.

At the federal level, sources included Title VI of the Civil Rights Act of 1964 and its implementation regulation 49 CFR 21, the Americans with Disabilities Act (ADA) and its implementation regulations 49 CFR 27, 49 CFR 37, and 49 CFR 38, and the DOT Environmental Justice Order. It was found that most of these regulations provide general guidelines or policies on the provision of transportation but do not specify access level standards. The exception is Title 49, Part 37. This Title specifically mentions that complementary paratransit service, required of public entities that operate fixed route transit services, must be provided within $\frac{3}{4}$ of a mile from fixed route transit, and must meet other specific service criteria.

At the state level, guiding principles for the provision of public transportation services are stated in the statewide transportation plan, and supported by the Quality Communities program. Similar guidance is provided through several regional plans developed by NYMTC. Regional studies also provide recommendations on service enhancements to improve access to public transportation.

Guidance and recommendations regarding access to transportation from each of these sources is summarized below. Additional details and excerpts of legislative language from most sources are in the technical appendix (found in Appendix E of the *Access to Transportation on Long Island Technical Report*).

Federal Obligations

Obligations that have been established at the federal level regarding public transportation services are related primarily to civil rights, and require that services be provided in a manner that does not discriminate against individuals or certain groups of individuals. Key pieces of federal legislation are discussed below. Recent renewed emphasis by federal agencies on the coordination of transportation services, through the United We Ride initiative, is also described.

Title VI of the Civil Rights Act of 1964⁽¹⁾

Title VI of the Civil Rights Act of 1964 states that

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

It is important to note that Title VI prohibits both intentional discrimination as well as discrimination in the form of an impartial policy or practice that has an unequal impact on protected groups.⁽²⁾

Title 49 Part 21⁽³⁾

Part 21 of Title 49 from the Code of Federal Regulations (49 CFR 21) effectuates the provisions of non-discrimination of Title VI in federally-assisted programs of the Department of Transportation. Thus, its purpose states that

"...no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance from the Department of Transportation."

Both Title VI and 49 CFR 21 provide a general obligation to avoid discrimination on the grounds of race, color, or national origin in federally assisted programs, in this case from the Department of Transportation. However, no specific guideline is provided in terms of access or service level obligations to transit agencies or transit providers. The most specific terms are provided in Appendix C to 49 CFR 21, which is the Application of Part 21 to Certain Federal Financial Assistance of the Department of Transportation. It provides examples, which are not exhaustive, but illustrate the application of the nondiscrimination provisions of Part 21 on projects receiving federal financial assistance under the programs of certain Department of Transportation operating administrations (see Appendix E).

Americans with Disabilities Act (ADA) ⁽⁴⁾

The ADA bars disability-based discrimination in employment, federal, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. ⁽⁵⁾ Of particular interest to this review are Titles II and III of the ADA. Title II discusses in further detail the non-discrimination policy for state and local government activities, and public transportation. Title III does the same for Public Accommodations, which include transportation facilities.

Title 49 Part 37 (49CFR37) ⁽⁶⁾

Parts 27, 37, and 38 of Title 49 of the Code of Federal Regulations implement the transportation and related provisions of Titles II and III of the Americans with Disabilities Act of 1990. Part 37 states that

“No entity shall discriminate against an individual with a disability in connection with the provision of transportation service.”

This part provides a set of guidelines regarding the provision of transportation services for individuals with disabilities including the standards for vehicles, facilities, service levels, the eligibility process, and the planning and implementation plans. Subpart F of Part 37, *Paratransit as a Complement to Fixed Route Service*, mandates that a complementary paratransit service be provided for all origins and destinations within a ¾ mile-wide corridor from fixed route bus service and ¾ mile radius from rail stations. This complementary service must operate at least during the same days and hours as the fixed route service and all trip purposes must be allowed for eligible passengers.

Paratransit services must also be comparable to fixed route services in several other service criteria. Paratransit fares must be no more than twice the regular fixed route fare for a comparable trip. In order to be comparable to fixed route service in terms of response time, paratransit trip reservations must be taken until at least close of business on the day prior to the trip. Finally, paratransit providers must not operate with “capacity constraints;” that is, they must not limit the availability of service to eligible individuals.

The issue of “capacity constraints” is complex, and has been the subject of several recent ADA paratransit court cases. In general, providers must not limit the number of trips an individual may make, maintain waiting lists for service, or exhibit operational patterns or practices that significantly limit service. Such patterns or practices may include substantial numbers of significantly untimely pickups, substantial numbers of trip denials or missed trips, and substantial numbers of excessively long trips. Court decisions have imposed particular obligations regarding capacity constraints on specific transit providers. FTA currently requires that transit providers plan to meet 100% of the demand for ADA paratransit services.

ADA Accessibility Guidelines (ADAAG) and Public Rights-of Way Guidelines ⁽⁷⁾

In addition to complementary paratransit requirements, the ADA establishes a set of accessibility requirements for public entities that operate public facilities and communicate with the public. Under Title II, Subpart D (§35.151), *Program Accessibility*, the ADA requires all public facilities (government facilities, places of public accommodation, and commercial facilities) being built or altered to be designed and built “readily accessible to and usable by individuals with disabilities.” In other words, a person with a disability should be able to easily and conveniently approach, enter and use the facility. A facility includes structures, equipment, roads, walkways, passages, and the property upon which the facility is located. Subpart E (§35.160) of the same title addresses communications with members of the public by a public entity, and requires public entities to develop an effective means of communicating with individuals regardless of disability.

The Access Board,ⁱ a federal agency focused on accessibility for persons with disabilities, developed and maintains the ADA Accessibility Guidelines (ADAAG) for buildings and facilities. The Access Board also provides accessibility guidelines for the Architectural Barriers Act of 1968 (ABA), which requires that facilities being designed, built, changed, or leased using federal funding be accessible to persons with disabilities. ADAAG and ABA standards were last updated by the Access Board in 2004. The Department of Justice (DOJ) and Department of Transportation (DOT) base their enforceable ADA standards on the guidelines from the Access Board.ⁱⁱ As of March 2006, DOJ and DOT were in the process of drafting new ADA standards based on the updated 2004 ADAAG. The previous regulations from DOT based on the 1991 ADAAG remain intact until the new standards are adopted. The previous standards are located in Appendix A of 49 CFR 37, which was described above, and are available on the Access Board's website (www.access-board.gov).⁽⁷⁾

In June 2002, the Access Board developed a set of draft guidelines specifically dealing with public rights-of-way (ROW) to supplement ADAAG and ABA guidelines. While ADAAG and ABA guidelines cover facilities and public sidewalk features, the draft ROW guidelines address other conditions exclusive to public rights-of-way, such as pedestrian access routes, curb ramps, warning surfaces, and pedestrian crossings. The draft guidelines are proposed to apply to construction of or alterations to a pedestrian route or facility as part of a public rights-of-way improvement project (no alterations to existing rights-of-way would be required under the guidelines).

A revised version of the draft rights-of-way guidelines, incorporating earlier public comments, was published by the Access Board in the *Federal Register* in November 2005 (Vol. 70, No. 225, November 23, 2005). At some point in the future, the Access Board will publish its final proposed guidelines and request public comment before issuing a final rule. When the Access Board issues its final ROW Accessibility Guidelines, DOJ and DOT will develop corresponding, updated regulations. Until that time, current regulations remain valid and enforceable. As of March 2006, DOT's current regulations are those based on the 1991 ADAAG, which can be found in Appendix A of 49 CFR 37, and on the Access Board's website (www.access-board.gov).

The revised draft Access Board rights-of-way guidelines can be found on the organization's website (www.access-board.gov).

Department of Transportation Guidance on ADA Paratransit Service Regulations: Origin-to-Destination Service

In its regulations implementing the transportation provisions of the ADA, the Federal Transit Administration (FTA) in the Department of Transportation requires transportation providers to make ADA complementary paratransit service "origin to destination" service. The wording of the regulation intentionally excludes the requirement for either "curb-to-curb" or "door-to-door" service, leaving the question as to what level of service is most appropriate as an item to be considered in the local paratransit planning process.

ⁱ The Access Board is the U.S. Architectural and Transportation Barriers Compliance Board

ⁱⁱ The General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the United States Postal Service are responsible for developing and enforcing standards that are consistent with the Access Board's ABA guidelines.

In September 2005, DOT issued further guidance on this topic.⁽⁸⁾ In summary, the guidance advises transportation providers to offer either curbside-to-curbside or door-to-door service, as selected by the local planning process, but to retain enough flexibility to ensure that each passenger is able to use the paratransit service to travel from his/her origin to his/her destination. This may mean providing door-to-door assistance for some passengers (in all circumstances, or when factors such as weather, physical barriers or disability prevent the passenger's traveling unassisted from door to curbside) even if the basic level of assistance is curbside-to-curbside. The guidance makes it clear that requiring advance notice of the need for additional assistance is reasonable, and that providing additional assistance when required, on a case-by-case basis, does not obligate the transportation provider to "fundamentally alter the nature of the service" or "create undue burdens". For example, providing assistance beyond the door of a home or destination or taking unsafe actions in order to accommodate a particular passenger would not be appropriate.

Environmental Justice (EJ) ^(9, 10)

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" mandates all federal agencies to include environmental justice considerations in their policies, activities and procedures. In order to comply with the EO and attain environmental justice, the agencies must identify and address "disproportionately high and adverse health and environmental impacts on minority and low-income populationsⁱⁱⁱ to the maximum extent practical, and as permitted by law."⁽¹⁰⁾ Federal agencies were provided with the following essential principles on environmental justice to guide them in their efforts:

- To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low income populations
- To ensure the full and fair participation by all potentially affected communities in the decision making process
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations ^(10, pg 1)

In response to Executive Order 12898, various federal agencies established environmental justice guidelines and procedures. The Department of Transportation (DOT) issued Order 5610.2 in 1997 to comply with the EO. Under the DOT Order, all operating administrations under the DOT are required to

ⁱⁱⁱ U.S. DOT Order 5610.2 on Environmental Justice defines:

Minority: as Black (a person with origins in any of the black racial groups of Africa), Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race), Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands), and American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains a cultural identification through tribal affiliation or community recognition).

Low Income: as a person whose median household income is at or below the Department of Health and Human Services guidelines.

Disproportionately high and adverse effect on minority and low-income populations: as adverse effects that are predominantly borne by a minority and/or low income population, or will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low-income population

take the principles of environmental justice into account during planning and decision making activities. The requirement includes development of programs, policies, and activities that fall under the jurisdiction of the National Environmental Policy Act (NEPA), the Civil Rights Act (Title VI), ISTEA and other regulations. The DOT developed procedures for addressing environmental justice issues:

- DOT and its operating administrations are to collect, maintain, and analyze information on the race, color, national origin, and income level of persons adversely impacted by DOT programs, policies and activities.
- Planning and programming activities that potentially result in disproportionately high and adverse impacts will include explicit considerations on the effects on minority and low-income populations.
- DOT and its operating administrations are to take steps to provide the public, including low-income and minority populations, access to public information regarding the human health or environmental impacts resulting from programs, policies and activities, including information that addresses the concerns of minority and low-income populations specifically.
- DOT and its operating administrations will monitor its programs, policies and activities on a continuous basis to ensure that disproportionately high and adverse impacts on minority and low-income populations are avoided, minimized or mitigated.
- DOT and its operating administrations will comply with Title VI to ensure that no person, on the grounds of race, color or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program receiving federal financial assistance. ^(10,pg 2)

In addition to Order 5610.2, the US DOT issued a memorandum in 1999 to FHWA and FTA administrators clarifying how to comply with the non-discrimination (Title VI) and environmental justice obligations during planning processes. ⁽²⁾ In the memorandum, entities are urged to ensure representation of minorities and low-income populations during the planning and design stages of projects.

United We Ride and Other Recent Federal Coordination Efforts

United We Ride (UWR) is the name of an initiative launched in late 2003 by the Federal Transit Administration (FTA) to encourage and support increased coordination among human service transportation programs. UWR consists of five components designed to make coordination of human service transportation easier and more rewarding for states and local communities to pursue:

- Framework for Action: Building the Fully Coordinated Transportation System --an assessment tool that can be used by states or community organizations to determine how well local transportation services measure up to the ideal of a fully coordinated transportation system, and to establish a plan for achieving improved coordination
- Awards to states and transportation providers that have achieved successes in human service transportation coordination
- National Leadership Forum on Human Service Transportation Coordination (held in February 2004)
- Coordination grants for states
- Technical assistance activities for states and local communities known collectively as Help Along the Way

United We Ride is closely related to efforts at the federal level to implement Executive Order 13330 on Human Service Transportation Coordination, issued by President Bush in February 2004. Executive Order 13330 reasserts the federal government's commitment to improved mobility for transportation disadvantaged citizens and more efficient use of transportation resources. The Executive Order establishes a new Interagency Transportation Coordinating Council on Access and Mobility, composed of representatives of: the departments of Transportation, Health and Human Services, Education, Labor, Veterans Affairs, Agriculture, Housing and Urban Development, and the Interior; the Attorney General; and the Social Security Commissioner. The Council's goals include eliminating duplication and overlap among federal transportation programs and services, facilitating use of the most cost-effective services available within existing resources, and developing policies and procedures to enhance transportation services.

While United We Ride and the Executive Order do not establish requirements for state or local agencies to coordinate human service transportation services, they do make it clear that efficient use of the resources that are devoted to the provision of this type of transportation service is a federal priority.

The federal emphasis on coordination is also reflected in several provisions of the 2005 reauthorization of FTA grant programs (and other federal transportation programs), known as SAFETEA-LU. SAFETEA-LU requires that projects funded by FTA's Elderly Persons and Persons with Disabilities (Section 5310), Job Access and Reverse Commute (Section 5316), and New Freedom (Section 5317) programs be included in a "locally developed human service transportation coordination plan" beginning in federal fiscal year 2007. Coordination is encouraged by broadening the allowed sources of matching funds for grants from these programs to include all federal non-Department of Transportation grant programs.

New York State Obligations

While it has not established obligations for transportation providers with regard to type or level of service that is provided, New York has several state guidance statements regarding adequate access and public transportation. That guidance is summarized below.

Statewide Transportation Plan and State Transportation Operating Assistance Program

The most recent statewide transportation plan, *Transportation Strategies for a New Age: New York's Transportation Plan for 2030*, indirectly addresses level of access under its priority areas of mobility and reliability for state transportation.⁽¹¹⁾ The plan is further broken down into strategies, guiding principles, and issues, some of which relate to public transportation access. While these are not specific, they provide direction for counties, towns and providers regarding how much public transportation should be provided. The plan touches on:

- Improving coordination
- Using technology to meet customer needs
- Asset management
- Meeting customer expectations
- Improving safety by investing in station accessibility
- Addressing transportation demand management in light of increasing reliance of the elderly and persons with disabilities on public transportation
- Increasing coordination with human service agencies

New York transportation is also guided by the State Transportation Operating Assistance (STOA) program. Services must be open and marketed to the general public, set a reasonable fare, use a vehicle with a capacity of at least 15 passengers^{iv} in order to receive STOA funds. Providers operating with STOA funds must be sponsored by the municipality, keep records of revenue vehicles miles and passenger counts, and follow the state's accounting requirements. The required operating statistics must be reported to the state DOT quarterly. ⁽¹²⁾ The rules and regulations for STOA regarding elderly and disabled persons are set out in Section 975 Part 11 of the New York Code of Rules and Regulations. ⁽¹³⁾ In order for a transportation provider to qualify for STOA support, they must, among other requirements, offer a discounted fare to elderly and disabled clients during off-peak times "to the extent necessary to enable the public transportation system to apply for Federal operating assistance payments."^v Between the transportation plan and STOA program, localities and providers in New York are directed to learn the needs of transit-dependent clients, especially the elderly and disabled, to provide them with service at a discounted rate as much as possible, and to work together to coordinate the services in order to be efficient.

State DOT Procedural Requirements for Pedestrian Accommodations

The New York DOT released an Engineering Instruction (EI) report regarding pedestrian accommodations for transportation projects that are classified as new builds, reconstruction, bridge replacement or rehabilitation, safety improvements, etc. ⁽¹⁴⁾ The EI requires completion of a Pedestrian Generator Checklist, which is a tool to determine pedestrian need and coordinate with the Regional Bicycle and Pedestrian Coordinator. The instructions in the EI are based on the fact that pedestrian movement is critical for transitioning between transportation modes. Further justification for improved pedestrian accommodations was the state's aging population that will become more dependent on walking and public transportation for mobility. The EI is founded on guidelines from the American Association of State Highway Transportation Officials and ADAAG.

Quality Communities Initiative

Governor George Pataki signed Executive Order #102 (EO102) into effect on January, 21, 2000, establishing the Quality Communities Interagency Taskforce. It is the Taskforce's responsibility to:

- Inventory programs influencing community development, preservation, and revitalization goals for all state municipalities
- Make recommendations regarding coordination, reorganization, and program delivery;
- Gather public input
- Offer recommendations on how to increase local capacity in the development of land use planning and community strategizing
- Suggest changes in state regulations that will enhance community choices regarding land use, preservation and rehabilitation
- Consider in formulating recommendations, among others, "integrating transportation decisions into local land use planning"

^{iv} Services operating vehicles smaller than 15 passengers are reviewed on a case-by-case basis for eligibility.

^v Recipients of Section 5307 funding from FTA, which supports public transportation services in urbanized areas, are required to offer reduced fares to seniors and persons with disabilities.

Along with the taskforce, the New York state legislature established a set of eight Quality Community Principles to guide the program (Chapter 63, Part U (f) 2005).⁽¹⁵⁾ Principle six deals with transportation and states activities, should “[p]rovide transportation choices, including increasing public transit, pedestrian and bicycle and other choices, in order to improve health and quality of life, reduce automobile dependency, traffic congestion and automobile pollution.” Other principles include public investment, economic development, community livability, and sustainability.

In conjunction with EO102, New York established the New York State Quality Communities Grant Program. The grants are eligible to various municipalities, local public authorities, and some non-profit organizations for planning purposes that promote community growth and enhancement, inter-municipal cooperation and development, etc. The grants require a 20% local match; communities designated as economically distressed only require a 10% match. There are five grant programs covering different activity types, two of which are related to transportation planning. The Community Growth Program provides grants for activities that support land use and development components of a comprehensive plan, including transportation planning. The Community Centers Program covers transportation planning for transit-oriented projects that augment transportation choices, assess downtown traffic impacts, parking strategies, and pedestrian-friendly streetscape design.

While EO102 does not establish or require a certain level of transportation access, it promotes transportation choices and provides a funding opportunity for municipalities to enhance their public transportation services.

Regional/Local Obligations and Guidance

Several documents prepared by NYMTC, in its role as the Metropolitan Planning Organization for the New York metropolitan region, including Nassau and Suffolk Counties, contain goals, direction, and information about target markets and needed services that can be used by communities and transportation providers as they make transportation decisions. Other regional or local transportation studies offer similar assistance, as noted below.

Regional Transportation Plan

NYMTC provides some guidance to towns and providers regarding adequate access through visions and goals in the *Regional Transportation Plan*.⁽¹⁶⁾ Vision 1 of the plan calls for using partnerships to balance resource needs and transportation service priorities. Improving regional quality of life through meeting the needs of the customers is a regional goal under Vision 1. The needs of transit-dependent residents are implicit in this regional goal.

NYMTC Annual Meeting Shared Goals

NYMTC principals recently agreed to a set of shared goals that were announced at the Commission’s annual meeting. The shared goals for the region include: advance the regional economy, improve the regional environment, improve quality of life throughout the region, “provide convenient, flexible transportation access within the region,” and to bolster the argument to increase resources for regional investment.⁽¹⁷⁾

Area-wide Job Access and Reverse Commute (JARC) Transportation Plan⁽¹⁸⁾

Nationally, there is a considerable disconnect between the location of new entry level jobs in the suburbs and where welfare recipients live, either in rural areas or cities. Welfare-recipients and low-income people

are usually unable to afford automobiles to reach the jobs in the suburbs. In response to this gap in transportation and employment, the Job Access Reverse Commute (JARC) grant program was established by TEA-21 in 1998. The purpose of JARC is to provide transportation for low-income persons and welfare recipients in order for them to access employment opportunities; and to promote collaboration between transportation providers, human service agencies, service providers, employers and metropolitan planning organizations (MPOs).⁽¹⁹⁾

JARC is an important source of public transportation funding to enhance job access and reverse commuting options by expanding current services or establishing new ones. In order to receive a federal Job Access and Reverse Commute grant for a project, the project must be included in a short term Area Wide JARC plan. JARC plans identify and deal with transit service gaps that inhibit access to jobs and employment services for welfare recipients and low-income individuals. The plans are intended to be the result of a coordinated planning process between public transit providers and human service agencies.

The Area-Wide JARC plan for the New York Metropolitan Area was developed by NYMTC, with the most recent update in 2003. The plan provides an overview of the current relationship between jobs and housing locations, as well as trends that will impact this relationship over the next several years. The plan also includes recommended actions for traveler assistance and persons with disabilities, recommended additional research, and an evaluation of opportunities in priority employment markets. The recommended actions for the region are:

- Further development and promotion of the regional JARC information clearinghouse that was created under the 2001 JARC plan, especially in marketing to organizations not currently involved in JARC
- Continued updates on the labor market conditions for the Access-to-Jobs Working Group; special attention should be given to distributing local information to small geographic areas or job sectors with significant potential
- Increase efforts to establish transportation brokerage services through partnerships between transportation providers, transportation demand management (TDM) organizations and human service organizations
- Transportation resource training for employment specialists and human service employees
- Increase promotion of TDM services among small employers, low income workers, and individuals seeking employment
- Add criteria to the JARC grant proposal evaluation process that prioritizes project proposals that improve job access for persons with disabilities through actions such as
 - Improving accessibility on public and private transportation
 - Training persons with disabilities to use public transportation to travel to work or training centers
 - Provide a demand responsive program that increases transportation options for persons with disabilities

The additional research recommendations primarily revolve around childcare facilities and coordination of transportation services for low-income employees.

The evaluation of JARC opportunities identified five locations in Long Island as priority employment markets:

- Central Nassau Centers

- Northern Nassau
- Route 110 Corridor in Suffolk
- Central Suffolk Centers
- East End of Suffolk County

These locations were selected based on criteria related to employment size, employment growth, trip potential and input from communities, various social, human service and employment agencies, and NYMTC. Table 1 identifies the highest ranking types of potential service enhancements for each of the five locations.

Table 1: Potential Service Enhancements in Long Island Markets

Potential Enhancement	Central Nassau	Northern Nassau	Route 110 Corridor	Central Suffolk	East End
Public Transit					
Extend service hours	High	High	High	Med-High	High
Increase service frequency	Med-High	Medium	High	High	High
Service Delivery					
Transportation Brokerages	High	Medium	High	Med-High	Med-High
Marketing & Advertising	High	Medium	High	High	High
TDM Strategies					
Car Pools	Medium	High	High	High	High

Note: This partial listing of potential enhancements only includes those enhancements with the highest rankings for most locations. Source: Regional Plan Association, 2003

Overall, the Job Access and Reverse Commute program is vital to providing adequate access to public transportation for low income individuals. The recommendations in the area-wide JARC plan are based on local information and knowledge of transportation gaps preventing low-income individuals from reaching job opportunities on Long Island and in near by locations. The criteria and information used to determine JARC program priorities and service needs lend themselves to the broader definition of adequate access and should be incorporated into the formal definition.

Environmental Justice Assessment

NYMTC is required by federal mandate to consider environmental justice principles throughout its planning and decision making processes, including development of its Regional Transportation Plan, Unified Planning Work Program, and Transportation Improvement Program. NYMTC's approach to the planning process includes a multi-tiered method of public participation. These principles are also used to develop an improved regional transportation planning framework that enables member agencies to enhance the quality

of transportation planning and their ability to meet transportation planning requirements and issues, including environmental justice.

Each NYMTC member county must demonstrate compliance with Title VI once every three years. The transit plans are scored on a point system which includes variables such as vehicle assignment and transit amenity distribution. NYMTC member agencies have their own strategies and degree of formality in dealing with environmental justice requirements. Overall, under a common framework, each agency accounts for the intent of the environmental justice guidelines according to their individual circumstances.

Metropolitan Transportation Authority (MTA)

The MTA uses the Title VI program and its own capital program to address environmental justice concerns. Under federal guidance, routes that have at least 1/3 of the population along the route categorized as a minority are designated as “minority routes.” To identify minority routes, the MTA assesses a number of operating variables in terms of populations above and below the poverty level and minority and non-minority populations. The MTA conducts a strong public outreach effort as part of its Capital Plan. The MTA also follows the National Environmental Protection Act (NEPA) or the State Environmental Quality Review (SEQR) guidelines for environmental impact statements, which include an environmental justice assessment. ⁽¹⁰⁾

Nassau and Suffolk Counties

In order to identify communities of concern, both Nassau and Suffolk County develop a set of base maps using census information. Bus route maps are then overlaid on the base maps to determine how many communities are served by transit. This process has identified a set of communities categorized as communities of concern in Nassau and Suffolk Counties. ⁽¹⁰⁾ Table 2 presents the communities in each county identified as communities of concern by the *Environmental Justice Assessment Report*.

Table 2: Villages and Hamlets Containing Communities of Concern on Long Island

Nassau County		Suffolk County	
Town	Village/Hamlet	Town	Village/Hamlet
Glen Cove	Glen Cove	Huntington	Huntington Station
Hempstead	East Garden City		Wyandanch
	Uniondale		Wheatley Heights
	Hempstead		N. Amityville
	Roosevelt		Copiague
Freeport	Islip	Brentwood	
Elmont		Central Islip	
Inwood		Oakdale	

	N. Valley Stream	Islip/Brookhaven	Holbrook
	Valley Stream		Holtsville
North Hempstead	New Cassel	Brookhaven	Patchogue
	Westbury		Stony Brook
Oyster Bay	East Massapequa		Centereach
			Selden
		Coram	
		Middle Island	

Long Island Bus Study ⁽²⁰⁾

The Long Island Bus Study (LIBS) was conducted in 2000 in order to identify strategies and innovations that would bolster bus service delivery on Long Island. The goals of the enhanced service were to increase mobility in the region, ease congestion, and improve air quality. The study included an intense review of previous studies and various sources of data. Information from those studies and a series of surveys resulted in a clear long-term vision for Long Island bus service. The vision statement articulates that bus service on Long Island will:

- Focus on customers
- Add service to previously un-served areas, primarily commuters and students traveling within Long Island, but also from Long Island to New York City
- Provide a mixture of fixed route, fixed schedule and others services to expand Nassau operations and complete the planned basic service for Suffolk County
- Strive to find dedicated funding from local and state sources
- Establish inter-county service protocols with a goal of coordination
- Improve communication between the state and bus service providers

The LIBS also provides a set of recommended service changes. These changes are intended to:

- Close gaps in the system by adding connections between two locations that either requires two or more buses to make the trip or no service is available
- Enhance the network through implementation of new service types in areas underserved or not currently served, such as a limited/express bus service along commuter routes
- Increase level of service via increasing frequency and expanding hours of operation
- Integrate fare structures by honoring transfers across providers, adopting a pricing scheme that accounts for the variety of trips available, implementing peak pricing and using seamless fare payment

The bulleted point regarding level of service deals with current service standards that are not presently being met. Table 3 provides an overview of the service standards outlined in LIBS:

Table 3: Suggested service standards for buses on LI

Day	Start	End	Duration (hrs)
Weekday	6:00 a.m.	10:00 p.m.	16
Saturday	7:00 a.m.	7:00 p.m.	12
Sunday	8:00 a.m.	6:00 p.m.	10

Maximum headways of 30 minutes during peak and 60 minutes at other times

*Note: These are not LI Bus service guidelines, which are provided on page 19.

A set of service changes to meet these service standards are proposed in the study. The LIBS also provides a detailed list of proposed alternative network strategies and operating plans to deal with the other recommended service changes. Additional detail on the alternatives is in Appendix E.

Similar to the area-wide JARC plan, the Long Island Bus Study has provided a good deal of information on service gaps in Nassau and Suffolk counties. These service gaps were identified using information necessary in defining adequate access to transportation, such as connectivity, level of service and coordination between providers.

Long Island Transportation Plan 2000 (LITP) ⁽²¹⁾

The purpose of the LITP is to “identify and evaluate all reasonable strategies for dealing with the identified transportation needs, including low-cost options, and combinations of strategies.” After reviewing transportation models, maps and related documents, the study team released a “preliminary preferred alternative” in May 2002. The preferred alternative included the Long Island Rapid Commute transit system consisting of 91 routes and 1,270 vehicles, transit priority lanes along the Long Island Expressway and other major roads, and proposals for new stations. There were several committees and subcommittees assigned to look at different aspects of the transportation system for the major impact study (MIS). The committees/subcommittees developed a set of programs and recommended transit improvements that were then sorted by rank of importance. The three program solutions rated by the Special Travel Needs Subcommittee that are relevant to defining access to transportation are:

- Improvements to the paratransit scheduling system as part of a strategy to increase capacity to meet demand
- Establishing programs that facilitate use of public transportation by seniors
- Enhancing transit infrastructure by adding wheelchair lifts, in-vehicle wheelchair tie-downs, and more kneeling buses.

The Public Committee on Transportation Mobility provided recommended improvements. These are organized by mode rather than by ranked importance.

- General mass transit: increase frequency and improve travel times to be more competitive with automobiles
- Long Island Railroad: add more intra-island services; coordinated rail schedules with bus schedules; improve bus connections at the stations

- Long Island Bus: increase and improve the information available to riders; post schedules and maps at stops; provide towns and neighborhoods with local bus route information

The Transit, Ridesharing, and Commute Options Subcommittee also identified and ranked solutions that are related to this study. Those related to this study include:

- Coordination of bus and rail schedules where appropriate
- Create an expanded network of shuttle buses that serve the train
- Establish a regional information system for passengers that includes all modes
- Use paratransit services in areas too low in density to support regular bus service
- Extend the span of service, such as including later nights and weekends

The recommendations from the LITP are based on significant background research and public input. They establish a level of expectation for public transportation on Long Island, and are relevant and important contributors to defining adequate access to transportation.

Sustainable East End Development Strategies (SEEDS)

The SEEDS project was undertaken by NYMTC and the five towns and nine villages on the eastern end of Long Island to define and evaluate alternative future land use and transportation strategies for the East End that could help to achieve a balance between economic growth and the preservation of the area's natural resources and quality of life for its residents.

As part of the SEEDS study, public workshops were conducted in May 2005. Participants reviewed computer models that simulated different future land use and transportation scenarios for the East End. In general, workshop participants were in favor of land use and transportation policies that would concentrate both development and transit improvements around hamlet centers.

Other possible future scenarios on which individuals representing Southampton, Southold, Shelter Island, East Hampton, and Riverhead in both morning and afternoon workshop sessions reached consensus included the following:

- Increased transit service and connectivity without additional infrastructure
- An organized system of transit hubs, including a variety of amenities
- A maximum 30-minute wait time for rail-based transit systems and a maximum 15-minute wait for all bus services
- Suffolk County Transit service improvements including increased frequency and route extensions
- Inter-hamlet shuttle services with flexible routes and flexible pick-up and drop-off locations

Workshop participants made several comments regarding the potential inter-hamlet shuttle services. It was felt that such shuttles should connect to medical facilities, doctors' offices, and post offices; focus on moving the labor force; use green technology and green energy; and receive priority treatment to bypass traffic congestion.

These transportation services and characteristics, which were deemed desirable for the East End, provide insight into what might constitute adequate access to transportation in that area.

Long Island Non-Motorized Transportation Study (LINMTS)

The goal of the LINMTS project, sponsored by NYSDOT and NYMTC, was the development of a plan to guide improvements to non-motorized transportation facilities on Long Island that would make walking, bicycling, and traveling by other non-motorized means safer, more convenient and more attractive. The project featured extensive data collection, an online survey that was completed by nearly 800 respondents, and consultation with communities and a technical advisory committee. The plan includes not only prioritized bicycle network improvements and pilot projects, but suggested policies and standards related to non-motorized travel.

As discussed in the *Long Island Non-Motorized Transportation Study White Paper: Bicycle and Pedestrian Policy, Final Draft*, NYSDOT Region 10 adopted a regional bicycle and pedestrian policy to implement the LINMTS Bicycle and Pedestrian Transportation Plan, and to comply with policy guidelines and program guidance on the topic established by the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and NYSDOT.

The policy calls for the integration of the needs of non-motorized travelers (including cyclists, pedestrians, and persons with disabilities) in all planning, programming, project development, construction, maintenance, and operations activities in Region 10. The policy states that bicycle and pedestrian facilities shall be provided as part of construction, reconstruction, and maintenance projects unless one or more of three conditions are met. The conditions include a legal prohibition on the use of a roadway by cyclists or pedestrians, disproportionate cost of providing facilities in relation to their anticipated use, and an absence of need.

The requirement to consider and include the needs of individuals traveling by non-motorized means in transportation programs, plans and studies applies to the Access to Transportation on Long Island project.

Nassau County Office of Economic Development – Nassau County Transportation Policy Recommendations, 2005 and Beyond ⁽²²⁾

Based on the need to develop, encourage, and make available alternatives to private auto transportation as energy costs rise and supplies dwindle, the Nassau County Office of Economic Development and The Planning Federation developed the following transportation policy recommendations:

- Build on the LIRR network
- Establish north-south transportation links; emphasize villages as destinations
- Encourage transit use, especially for work trips
- Create more bicycle/pedestrian options for reaching transit stations and stops
- Establish a rail link to the Nassau Hub along the Meadowbrook State Parkway corridor
- In the future, consider transportation and housing as elements of development plans

Nassau Hub Major Investment Study – Nassau County Planning Commission ⁽²³⁾

The Nassau County Hub Major Investment Study (MIS) was conducted as part of a planning process aimed at improving the economic vitality of the commercial heart of Nassau County while protecting the suburban quality of life in other areas. The MIS focused on transportation in the Hub area and identified several transportation problems and needs:

- Road and highway congestion
- Connectivity between six Long Island Rail Road (LIRR) and Hub activity centers
- Other incomplete transportation connections between activity centers
- Insufficient north to south transit options

Additionally, the study identified a set of measures to define “successful transit,” which are relevant to the study discussed in this paper. These measures include:

- Transit ridership, which is influenced by service area population, level of service and land use
- Accessibility to transit, including service frequency and accessibility to stops, stations and vehicles
- Coordination with land use, including density and transit oriented development policies
- Promotion of economic development

Joint Executive/Legislative Task Force on Transportation Issues in Suffolk County ⁽²⁴⁾

In April 2000, the Joint Executive/Legislative Transportation Task Force was established in Suffolk County to investigate transportation needs of county residents and provide reasonable recommendations for transportation system improvements. The needs focused on transit (15 separate concerns), congestion management, social and health issues, special needs in the East End, land use, and financial resources.

Members of the task force were drawn from various agencies and organizations at the state, county and local level. The task force was given two goals for transportation in Suffolk County:

- Offer public transportation services within the financial limitations of the county government
- Employ technical solutions and traffic calming methods to enable people to make trips for work, shopping and recreation while disrupting the community and environment as little as possible

The task force gathered information on various aspects of transportation in Suffolk from many plans, reports, forecasts, and other research on transportation.^{vi} Funding sources at the federal, state and regional level were identified separately. The data from these sources were used to establish a clear overview of what transportation services were available in the county and to help the task force identify gaps and areas of need. The task force used this information to establish a set of priorities and final recommendations. The recommendations relevant to the *Access to Transportation in Long Island* include:

- Suffolk County Transit improvement recommendations
 - Improve bus headways
 - Provide bus route extensions and new services
 - Consider increasing operating hours to earlier in the morning and later in the evening
 - Consider adding Sunday bus service
 - Provide parallel improvements to all paratransit services

^{vi} Transit information reviewed by the task force include the *Long Island Transportation Plan to Manage Congestion*, the *Long Island Bus Study*, the Dept of Public Works Capital Budget, the Town of Huntington Bus Service. Information was also gathered on social services, such as Medicaid, labor services, health services and disability services.

- Secure local legislation enabling the county to handle the installation of bus shelters on local roads
- Develop a five-year plan using information from the Long Island Bus Study, including performance measures such as:
 - Accessibility
 - Impact on ridership
 - Cost effectiveness
 - Quality of life
 - Environmental impacts
- Encourage localities to push for better taxi services
- Maximize use of storage and maintenance facilities to improve route service and structure
- Continue improvements to dispatching, scheduling and training for SCT and SCAT
- Develop public outreach on transit use, including consideration of marketing to reach potential bus users
- Consider establishing a bus operations and maintenance inspection program at the county level
- Consider revising MTA distribution of taxes and surcharges to gain more income for county service improvements; impact on MTA service needs to be reviewed
- Promote Long Island Railroad expansion to all portions of Suffolk County
- Monitor new method of state financing for transit operations to determine whether it is more beneficial than the previous method
- Maintain pressure on the state to increase public transportation operations funding while searching for additional funding sources at the local level
- Create a committee to coordinate and deliver medical services and job opportunities for all

The task force priorities are listed in Appendix E.

Long Island Bus Service Guidelines ⁽²⁵⁾

Long Island Bus (LI Bus) established a set of service guidelines that enable it to configure, evaluate and revise its service routes to run at an optimal level of service. Performance indicators and service standards are used to gauge productivity, efficiency and effectiveness of the system. The standards included in the service guidelines are listed in Table 4.

Table 4. Long Island Bus Service Guideline Standards

Measure	Definition	Standard
Vehicle Load	Ratio of seats on bus to number of passengers; indicates extent of overcrowding	Seating = 44 Standing = 11 Peak = 125% of seated load Off Peak = 110% seated
Vehicle Assignment	Process of assigning vehicles to routes according to vehicle age, size, amenities, etc	Maintain for good state of repair and assigned equitably according to: newer buses, accessibility, non-polluting, cleanliness, climate control, operational public announcement systems
Vehicle Headway	Time interval between two buses traveling in the same direction on the same route	Service Headways: no greater than 45 minutes during weekday peak and 60 minutes during off peak and on weekend (given constraints and demand)
	The number of service hours per day based on demand, vehicle availability and operating resources	Service Span: minimum span of service hours Weekday major feeder routes: 5 a.m. to 11 p.m. Inter-county routes: 6 a.m. to 10 p.m. Tertiary routes: 6 a.m. to 7 p.m. Saturday: 7 a.m. to 10 p.m. Sunday: 10 a.m. to 7 p.m.
Transit Amenities	Distribution of transit amenities such as bus shelters, signage, etc.	<u>Stop spacing and location</u> : no less than 4 stops per mile; located within 200 feet of an entrance at major activity centers; generally on far side of intersection <u>Bus shelters</u> : responsibility of Nassau County Planning Commission; should coordinate with county at stops serving 100 boarding or transferring passengers per day <u>Bus stop signs</u> : at minimum provide route number, destination and Travel Information Center phone number <u>Public Information</u> : printed timetables should at minimum have a route map, time points, fare and transfer information; telephone service for bus information should be available during service hours (either an operator or a recording available at all times); current information on MTA website 24-hours.
Transit Access	Distance one must travel to have access to transit service	<u>Residential</u> : based on dwelling units per acre >7.5 = 3/8 mile; 2.5 to 7.5 = 1/2 mile; <2.5 = 1 mile <u>Employment</u> : employment centers with 500 or more employees per shift, hospitals with >400 beds, colleges with >4,000 day students, retail or business districts >200,000 sq ft <u>Directness</u> : no more than 35% of passengers having to transfer <u>Connections</u> : parking, customer volumes, population density

Suffolk County Transit (SCT) Service Guidelines and Standards

The standards used by Suffolk County in the planning and evaluation of services provided by Suffolk County Transit are summarized in Table 5.

Table 5: Suffolk County Transit Service Guidelines Standards

Measure	Definition	Standard
Vehicle Load	Ratio of seats on bus to number of passengers	One seat per passenger except during maximum peak Maximum 125% of seated load during maximum peak
Vehicle Headway	Time interval between two buses traveling in the same direction on the same route Operating Periods	Fixed route peak period headways range from 15 to 60 minutes and average 60 minutes during off peak Weekdays: 5:30am – 8:30pm (some service to 10 pm on transit routes) Saturdays: 6:00am – 8:00pm
Transit Amenities	Distribution of transit amenities including bus shelters, signage, etc.	Bus stop spacing and location: ¼ to ½ mile apart; generally at far side of intersection Bus shelter location: criteria include physical characteristics of site, passenger boardings and alightings at stop, and service frequency
Vehicle Assignment	Process of assigning vehicles to routes according to vehicle age, size, amenities, etc.	Vehicles maintained in a state of good repair and assigned according to loading factors
Transit Access	Distance one must travel to have access to transit service	Walking distance of ½ mile of a bus route

Long Island Rail Road Service Guidelines ⁽²⁶⁾

Long Island Rail Road (LIRR) also has a set of service guidelines that set criteria regarding level and quality of service. LIRR applies the standards within the service guidelines in assessing its productivity, effectiveness and efficiency. The standards are essentially based on the level of service at stations, which is determined by the number of daily passengers. The level of service categories are listed in Table 6. Level 1 is the highest station level; the majority of level one stations are in western Long Island on the Babylon, City Terminal, Port Jefferson, and Port Washington branches. A full listing of level of service for each LIRR station is in Appendix E. The standards included in the service guidelines are listed in Table 6.

Table 6: Long Island Rail Road Service Guideline Standards

Service Element	Measure	Standard
Stations	Level of Service	Based on number of daily customers: Level 1: > 6,000 customers per day Level 2: 2,000 – 6,000 customers Level 3: 1,000 – 1,999 customers Level 4: < 1,000 customers
	Access and Location	Measure of distance a person travels to gain access to LIRR station; adjust service to shifting ridership patterns Customer volume < 400 per day triggers review of whether to close the station
	Distribution of Amenities	Level of amenities based on station level of service (above); amenities include escalators, elevators, pedestrian overpasses, waiting rooms, restrooms, staffed ticket offices, TVMs, platform shelters, pay phones and vending
	Parking	Mostly provided by local municipality; LIRR provides station profiles to assist with decision making on level of parking
Stations Continued	Facilities	Facilities based on station level of service (above); for instance Level 1 will have a staffed ticket office, public restrooms, station waiting rooms, TVMs, public address system, pay phones, and customer information centers; a Level 4 station will only have amenities listed from TVMs to customer information centers. Full details in technical appendix
	Accessibility	99 of 124 stations have elevators and/or ramps for station access; other features include: handrails, Braille signage, audio and visual information systems, accessible station ticket windows, accessible TVMs, tactile warning strips on platform, TDD telephones, accessible restrooms 20 stations have all these features
	Appearance	Maintenance and cleaning schedules based on station level of service (above)

Table 6: Long Island Rail Road Service Guideline Standards, continued

Service Element	Measure	Standard
Ticket Sales	Offices	All tickets available at the office
	Ticket Vending Machines (TVM)	24 hour ticket access using cash or credit card payment 2 types of machines: full service and daily ticket use multiple languages, have Braille and audio instructions
	Mail and Ride	Subscription services with one time enrollment; multiple payment options; receive monthly LIRR ticket in mail
	Web Ticket	Internet website to purchase tickets in advance; available for most ticket types
Service Frequency	Frequency	Measures how often a train stops at a station; based on station level of service (above) Full details in technical appendix
	Hours of Operation	24 hours per day, everyday
	Reliability	Trains considered on time if arriving within 5 minutes 59 seconds of scheduled time
Vehicles	Load Factor and Standards	Ratio of number of seats to number of passengers Goal is to provide adequate seating at all times Full load standards are in the technical appendix
	Assignment	Diesel and electric passenger cars rotated from branch to branch
	Accessibility	Crew members assist customers with wheelchairs in to the vehicles; there are designated seating areas for wheelchairs; some bi-level vehicles have accessible restrooms
	Cleaning	All cars cleaned daily prior to morning peak service; exteriors cleaned in weather > 38F every two or three weeks Extraordinary Interior Cleaning done every 60 to 90 days depending on vehicle type
	Maintenance	On schedule based on vehicle type

Table 6: Long Island Rail Road Service Guideline Standards, continued

Service Element	Measure	Standard
Vehicles Continued	Lifecycle Maintenance Program	Replacement of parts beyond useful life prior to system breakdown
	Mean Distance Between Failure	Weighted average calculated from dividing total number of miles operated by the total number of primary delays
	Spare Ratio	Goal spare ratio is 12%
Customer Communication	Signage	Comply with MTA Sign Manual and ADA regulations;
	Newsletter	Available on trains, at stations, and online
	Information Line	24 hour Travel Information Line for LIRR schedule, fare and service condition
	Passenger Announcements	Minimum announcements should include train's destination, stopping pattern and schedule deviation or delays, including the cause and likely duration whenever possible; information on delays should be made at a minimum interval of 10 minutes
	Website	Goal to contain the most up-to-date information including planned service changes and track outages
	Email Notification	Subscription service to notify customers of changes to service, timetables, etc

Adapted from LIRR Service Guidelines, November 2005

Industry Standards and Guidelines for the Suitability of Fixed Route and Demand Response Service

For this topic, several research studies from the Transit Cooperative Research Program (TCRP), as well as papers from other publications, were reviewed to help determine current standards and guidelines for the suitability of fixed route and demand response service to the characteristics of specific zones. Spatial accessibility guidelines for fixed route transit were more commonly found than those for demand response service. For the latter type of service, guidelines regarding temporal availability were more commonly addressed; its spatial availability seems to be taken as a fact from the ADA regulation (i.e. ¼ mile from fixed route bus service). There are many indices already created to study transit access. However, most of them were developed during studies for specific areas or are very theoretical and have not been widely applied. In both cases, there are no specific standards set. Still, the methodologies developed can be applied to Long Island to evaluate access in the area.

TCRP Report 100 – Transit Capacity and Quality of Service Manual (TCQSM)⁽²⁷⁾

The *Transit Capacity and Quality of Service Manual*, based on a Pushkarev and Zupan study, affirms that areas capable of supporting basic hourly transit service are those with, at a minimum, one or both of the following:

- Household densities of 3 units per gross acre
- Employment densities of 4 jobs per gross acre⁽²⁸⁾

These density standards are useful for determining where at least a minimum level of fixed route service would be appropriate.

For evaluating the Service Coverage provided by a system, this document mentions three measures:

- Route kilometers per square kilometer (or route miles per square mile)
- Percentage of the system area served
- Percentage of transit-supportive area covered

A transit-supportive area is defined as one in which the density of households is at least three per acre, or the density of employment is at least four jobs per acre.

The Manual also presents a level of service (LOS) guideline for service coverage based on the last measure described—percentage of transit-supportive area covered. The LOS table is presented below.

Table 7: Level of Service Guidelines for Fixed Route Service Coverage

LOS	% Transit Supportive Area Covered
A	90.0 - 100.0
B	80.0 – 89.9
C	70.0 – 79.9
D	60.0 – 69.9
E	50.0 – 59.9
F	<50.0

Transit-Supportive Area: The portion of the area being analyzed that has a household density of at least 3 units per gross acre or an employment density of at least 4 jobs per gross acre. Adapted from Kittelson and Associates, 1999.

The Manual describes the “covered area” referred to in the second column of Table 7 as:

- The area within 0.25 miles (0.4 km) of a local bus service

- The area within 0.5 miles (0.8 km) of a busway or rail station

The spatial availability of demand response service is not discussed in the TCQSM; this standard usually refers back to ADA compliance; however, the Manual, provides a LOS table for response or access time (temporal availability) for demand response service, which is shown below.

Table 8: Level of Service Guidelines for Demand Response Service

LOS	Access Time (h)	Comments
A	0.0 – 0.5	Fairly prompt response
B	0.6 – 1.0	Acceptable response
C	1.1 – 2.0	Tolerable response
D	2.1 – 4.0	Poor response, may require advance planning
E	4.1 – 24.0	Requires advance planning
F	>24.0	Service not offered every weekday or at all

Adapted from Kittelson and Associates 1999.

As observed in the table, the level of service mandated for ADA Complementary Paratransit service by 49 CFR 37, which requires that the trip requests be made no later than the day prior to the service, is considered a poor level of service (LOS 'E') in the Manual.

TCRP Report 88 – A Guidebook for Developing a Transit Performance-Measurement System
(29)

This TCRP report was reviewed because measuring the performance of a transit system is similar to evaluating the level or quality of the service that is provided. The report included an extensive literature review and research to form a framework for developing a transit performance-measurement system. The report includes twelve case studies of successful performance-measurement systems. The guidebook contains an extensive list of performance measures including availability, accessibility, and mobility measures, which are of interest to this study. Measures such as these can be used to determine how well a transit service meets needs in its area, or to determine where or how much service should be provided to meet mobility goals. Those measures are listed below. The detailed definition, standards or guidelines, and examples of applications, if available, for each measure are listed in Appendix E. Many of these measures are also discussed in other sources of information; those sources are usually referenced as well.

Fixed Route and Demand Response Performance Measures:

- Demographics – the number of people with a specific characteristic for whom transit could be a significant travel mode
- Accessibility – the ease and convenience with which desired destinations can be reached

- Welfare to Work Accessibility – the ability of the transit network to meet the job-related transportation needs of TANF (Temporary Assistance for Needy Families) clients
- Service Equity – distribution of transit benefits and impacts on various communities and population groups
- Service Coverage –can be defined in many ways; this report recommends using the *Transit-Supportive Area* concept from the TCQSM
- Percent Person-Minutes Served – average percent of time that a transit service is available within a given area (i.e. stop, route, zone)
- Transit Service Accessibility Index – number of trip ends exposed to transit service

Fixed Route Performance Measures:

- Route (corridor) Spacing – distance between two parallel routes or corridors
- Route Coverage – various measures can be used, for example, route miles per square mile or transit miles per square miles
- Service Density – number of routes within walking distance of a zone
- Transit Orientation Index – scored estimate of ridership in a Transportation Analysis Zone (TAZ) based on a locally developed regression model that relates ridership to employment, housing, and retail employment densities
- Transit Accessibility Index – the ease and convenience of reaching a destination by transit; considers total travel time between origin-destination pairs, transit fare, and out-of-pocket cost for autos
- Local Index of Transit Availability – a measure of “transit service intensity,” based on capacity, frequency, and route coverage
- Index of Transit Service Availability – a planning-level measure of metropolitan area transit service availability; it includes a service coverage component (directional route-miles per square mile), a frequency component (vehicle-miles per directional mile), and a system capacity component (seat-miles per capita)

Demand Response Performance Measures:

- Response Time – minimum time between when service is requested and when service can be provided
- Service Denials – the percentage of trip requests in which service cannot be adequately provided

TCRP Report 6 – User’s Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation ⁽³⁰⁾

This 1995 TCRP Report studied rural passenger transportation systems in the U.S. to generate a manual to guide rural communities wishing to establish passenger transportation within their areas. The study reviewed all transportation systems in the U.S. funded by Section 18 (now Section 5311) and studied the cases of selected top performing systems. Although the report does not provide

quantitative guidance with respect to the suitability of demand-responsive and fixed route services, it provides qualitative guidelines for rural areas as shown in the next table.

Table 9: Qualitative Guidelines for Suitable Rural Public Transportation

If your service area is	Densely populated	Sparsely populated	Densely or Sparsely populated
And your trip patterns are	Predictable	Similar on a day-to-day basis	Unpredictable
And your Origins and Destinations are	Similar from day to day	Vary from day-to-day	Vary from day-to-day
Then a good choice would be*	Fixed route, Fixed schedule	Flexible route, Fixed schedule	Demand Responsive Service

*Fixed route, Flexible schedule is not recommended for rural areas.

The report also provides effectiveness and efficiency measures of the top performers for each service type. Details on these measures are located in Appendix E. The report notes that

“...these “best practices” figures are extremely good and worth emulating, but hard to emulate. These top performers have obviously made concerted efforts to keep their costs as low as possible, and have employed special strategies to attract as many passengers as possible.”

These special strategies are highlighted in the report and the contact information for the agencies is also provided in the document.

TCRP Synthesis #10: General Provider Examples ⁽³¹⁾

For the 1994 *TCRP Synthesis 10 - Bus Route Evaluation Standards* study, more than 100 transit agencies were surveyed to understand their use of bus route evaluation standards. The standards were classified into 5 categories: 1) route design standards, 2) schedule design standards (including on-time performance and maintaining headways), 3) economic and productivity standards, 4) service delivery standards, and 5) passenger comfort and safety standards. Of particular interest to this literature review is the first group, which includes standards used in designing or redesigning a routing, and in determining and establishing the pathway for the bus, such as population and employment densities.

Population density, employment density, and the route coverage (spacing between other bus routes or corridors) are among the most widely used criteria to determine service provision. At the bus stop level, bus stop siting (i.e. near side, far side, mid-block) and bus stop spacing were also widely used criteria in the route design standards. Although most agencies expressed that they use population and employment density to establish routes, they did not provide with the specific figures used. In a similar study conducted in 1984, agencies mentioned that route coverage figures used varied between 0.5 and 2 miles. Furthermore, the study says:

“One-half-mile (.805 km) spacings are usually required in areas with high density and close proximity to the CBD; wider spacings of 1 mi (1.61 km) or more are generally

reserved for commuter or express-type routes that serve less densely populated rural or suburban areas. By establishing ideal distances between bus routes, transit agencies attempt to ensure that routes do not overlap covered areas and that transit services are well distributed throughout the jurisdiction. " (31, pg 9)

Mobility Goals and Service Standards

For this topic several studies and reports from various sources, including public transportation policies, plans, and vision statements from other areas, were reviewed to identify the goals and standards established for addressing mobility needs. This section summarizes mobility goals and service standards that guide access to transportation decisions at the state, county, local and provider levels.

At the state level, mobility or access goals are often broadly stated. In some of the examples reviewed, state policies also require lower levels of government or transportation providers to develop more detailed plans for achieving those goals, or establish service standards for the measurement of transportation service applicability or performance.

Specific strategies for providing transportation service, or standards for making decisions about the type or level of service to be provided are more often established at the county, municipality, or transportation provider level.

Although some of these documents provide figures that allow for benchmarking, care must be taken when comparing these policies with Long Island as the characteristics and/or mobility goals of the two areas may be very different. Additional details on specific decision making rules and standards are in the mobility goals and service standards section of Appendix E.

State-Level Mobility Goals

The literature review uncovered examples of transportation plans, or public transportation plans, prepared by a number of states that establish mobility goals or provide guiding principles for transportation planning and decision-making. In some cases, progress toward those goals is encouraged by measures such as state funding programs, requirements for county or local-level plans that address them, and use of performance measures to evaluate transportation services.

Washington

Washington has two state level plans that provide guidance regarding adequate public transportation access.

Goal three of *Washington's Transportation Plan 2003 – 2022* targets special needs transportation.⁽³²⁾ The plan states that the transportation system should provide all citizens access to basic services with the objective of meeting all the basic transportation needs for persons requiring special transportation.

Under the *Public Transportation and Intercity Rail Passenger Plan for Washington State 1997-2016*, (PTIRP) six of 22 policy statements are related to adequate access.⁽³³⁾ These statements are:

- An appropriate level of safe, reliable, and convenient public transportation should be available to all without discrimination or preference based on sex, age, disability, race, religion, ethnic background or economic status
- Public transportation should enhance the quality of life for all persons, particularly those with special needs for whom the lack of transportation would otherwise be a barrier to services and social interactions

- There should be some form of public transportation in all communities of the state
- Public transportation must conform to the ADA
- Public transportation should reduce barriers to travel, enhance access to employment and commercial activities, and stimulate local economies
- Public transportation should support local economies by providing access to employment, commerce and services for people who may be geographically isolated.^(33, pg 4-3)

These policy statements are clear directives for localities and providers to provide a certain level of service for everyone within their service areas.

Within the PTIRP, the state department of transportation (WSDOT) developed an action plan for paratransit service to specifically handle special needs transportation in the state. The action plan establishes WSDOT's commitment to coordinating with other state agencies to develop new program delivery models focusing on enhanced coordination. The plan states that the coordination efforts should include evaluation of roles for the state and various partners. The action plan requires WSDOT and other relevant state agencies to develop a set of services that provide transportation to under-served areas. The agencies should use rural demand forecasting tools and establish proper minimum levels of service. The plan also requires completion of a study on special needs and ADA passengers, and creation of an ADA Public Transit Implementation Grant Program.

Oregon

Oregon's state-level directives on adequate access to transportation are within the statewide transportation plan and the public transportation plan. The *Public Review Draft Oregon Transportation Plan* establishes several transportation goals related to access for transportation disadvantaged populations in the state.⁽³⁴⁾ The mobility and accessibility goal articulates the desire for a balanced, efficient, cost-effective and integrated multimodal system that ensures appropriate access to all areas of the state. The policies under the mobility and accessibility goal promote a system that offers many choices that are reliable, cost-effective, and accessible to all, including transportation disadvantaged individuals. State level strategies for achieving this goal focus on mobility management and include bringing services to levels that meet the local needs for transportation and coordinating between providers. One strategy for achieving the sustainability goal is to reduce barriers for transportation dependent residents by providing infrastructure that accounts for their needs.

Oregon's separate plan for public transportation, the *Oregon Public Transportation Plan: 1997* (OPTP) includes goals, policies and strategies that are focused on the role of public transportation in meeting the needs of the transportation disadvantaged.⁽³⁵⁾ Under this plan, the purpose of public transportation is established as providing mobility alternatives for necessary trips without being dependent on a single-occupancy automobile; as well as to meet these transportation needs in a coordinated, integrated and efficient way. The policy and strategy that are linked to the purpose of public transportation deal with urban and rural access and basic mobility, stating the state will "*encourage adequate and efficient public transportation access to employment, shopping and other commerce, medical care, housing and leisure activities, including access for the transportation disadvantaged.*" The second goal of the OPTP establishes the components of the

public transportation system, including a definition of appropriate minimum levels of service goals for large communities and urban areas. Policy statement 2A states:

"[a]t a minimum, public transportation should serve the transportation disadvantaged with rideshare, volunteer programs, taxis, or minibus services...all places of 10,000 people or more should have demand response service" (see Appendix E for additional detail).

Oregon provides additional guidance documents to define access to transportation, such as benchmarks and checklists in the *2001 Transportation System Planning Guidelines* and transportation planning rules under Oregon Administrative Rule Chapter 660 Division 012 (see Appendix E for detail).^(36, 37)

The state has also established the OTP Sustainability and Transportation Choice Policy Committee (STCPC). The 2004 policy and action recommendations from the committee include:

- Focus public transportation on mobility management and coordination with other service providers
- Develop strategies for reducing existing mobility gaps and barriers to accessing basic services, employment, education and social service
- Assure mobility needs of all small communities are addressed, including poor, seniors, disabled, and children
- Eliminate transportation as a barrier to participate in daily activities; recognize the isolation caused by lack of mobility
- Support seniors in remaining independent by providing access to public transportation and knowledge of how to use it⁽³⁸⁾

Vermont

Section 5083 of 24 V.S.A. Chapter 126 establishes four broad public transportation goals for the state of Vermont.⁽³⁹⁾ The legislation establishes that the state policy is to support the maintenance of existing public transit services and creation of new services including, in order of precedence, the following goals:

- Provision for basic mobility for transit-dependent persons, as defined in the public transit policy plan of January 15, 2000, including meeting the performance standards for urban, suburban, and rural areas. The density of a service area's population is an important factor in determining whether the service offered is fixed route, demand-response, or volunteer drivers
- Access to employment, including creation of demand-response service
- Congestion mitigation to preserve air quality and the sustainability of the highway network
- Advancement of economic development objectives, including services for workers and visitors that support the travel and tourism industry. Applicants for "new starts" in this service sector shall demonstrate a high level of locally derived income for operating costs from fare-box recovery, contract income, or other income.

Vermont law requires the Vermont Agency of Transportation (VTrans) to develop guidelines for the continued development of the state's public transportation system. VTrans is currently updating

the public transportation policy plan (PTPP), which should be finalized in late 2006. Pursuant to these goals, the guidelines in the PTPP are developed from a combination of factors: existing goals and objectives for transportation in the state (including those from long range transportation plans), current public transportation services throughout the state, needs analysis, other issues relating to public transportation, and funding.

The needs assessment aims to establish where the state should focus resources and investment to improve access to public transportation and therefore mobility for transit dependent residents. It involves GIS-based demographic analysis to identify where transit dependent populations are located and their potential needs; comparing current transit ridership with potential demand; and investigating capital replacement needs.

The draft 2006 PTPP under development is using several demographic categories to define potentially transit-dependent individuals, including

- Youth (persons age 5 to 17)
- Elders (persons age 65 and above)
- Low income households (based on median household income)
- Medicaid recipients by town
- Employment centers

Zero vehicle households may also be used for the analysis. The data for this analysis is primarily based on the most recent Census data available. The Census Bureau does not report data on persons with disabilities in categories useful for inclusion in the demographics analysis for Vermont's PTPP and will not be included. The information on employment is obtained from other sources. The data gathered was used to create a series of maps that identify areas with transit need and illustrate scenarios in which people may not have enough access to transportation. Details of the mapping process and criteria are in Appendix E.

In addition to identifying areas needing additional public transportation access, the PTPP will establish performance measures for the various services public transportation operators provide (fixed route, demand response, etc). These measures will be based on peer analysis and service area characteristics. The measures will enable VTrans to monitor the performance of the system and ensure adequate service is being provided to Vermont residents.

Florida

Florida has a significant amount of guidance regarding transportation service for its transportation disadvantaged population, which includes Floridians who are elderly, persons with disabilities, low-income, or otherwise dependent on public transportation. The state established a state-level policy board, the Commission for the Transportation Disadvantaged (CTD), to:

- Establish statewide transportation objectives
- Assist local municipalities in developing coordinated transportation systems
- Establish standards regarding the coordination, operation, costs and use of transportation services for the transportation disadvantaged. ^(40, 41) (Office of Program Policy Analysis and Government Accountability 1997)

State and local agencies that receive federal and state transportation funding for the transportation disadvantaged are required to participate in the coordinated system established by the CTD. These agencies include Medicaid, the Department of Transportation, Elder Affairs, the Department of Education, the Department of Labor, the Department of Health, and Veterans Affairs.

As part of its responsibilities, the CTD distributes funds from the Transportation Disadvantaged Trust Fund (TDTF).^{vii (42)} The fund supports CTD administrative costs and two grant programs: Non-Sponsored Trip/Equipment Grants and Transportation Disadvantaged Planning Related Grants. These grants provide funding for individuals who are not sponsored by another agency, such as Medicaid, and unable to transport themselves or purchase transportation due to age, disability, income, or other reasons. These are formula grants based on need and performance measures.

Under the Florida law, local coordinating boards must designate a Community Transportation Coordinator or CTC. The CTD works with the CTC in each service area in the state to ensure transportation services for the transportation disadvantaged. Each service area in the state is required to annually develop a Transportation Disadvantaged Service Plan (TDSP) with assistance from the CTD. The TDSP must be compatible with local comprehensive plans, regional policy plans, transit development plans, CTD 5 year/20 year plan, long-range transportation plans and transportation improvement plans. The CTD provides detailed instructions on the minimum level of information required in a TDSP, which must be approved by the local coordinating board. The CTC is also required to submit a Medicaid service delivery plan, and monthly budget reports to the Agency for Health Care Administration.

In addition to the CTD, the Florida Department of Transportation (FDOT) has developed a measure for transit availability. An (FDOT) project created a measure of transit availability based on percent person-minutes served, and used GIS-based software to calculate the measure.^{(43) (44)} The software calculates on a minute-by-minute basis the residential population and the number of jobs that have transit availability. The measure reflects both the spatial and temporal aspects of transit availability and, on a system-wide basis, is sensitive to population and employment density. The FDOT measures were included under Section 3, Industry Standards, of this report. Greater detail on how the measures are established is included in Appendix E.

Idaho

In 2004, Idaho produced its 30-year transportation *Vision Plan*.⁽⁴⁵⁾ The plan was based on interviews with and opinions of the general public. The document identifies upcoming transportation challenges and provides counties and local public transportation providers with a general outline for the type of system and performance the state needs to meet those challenges: accessibility, choice and reliability, affordability, and connectivity, among others.

^{vii} The TDTF is funded by a dedicated 15% of the State Transit Block Grant. The State Transit Block Grant is funded by the Florida Transportation Trust Fund, of which, a minimum of 15% is required to be spent on public transportation. Public transportation here includes aviation, rail, etc; transit receives approximately 4% of the FTTF public transportation funds. (TCRP 2003)

While the *Vision* report does not provide specific guidelines in terms of access to public transportation, the plan does recognize the increasing importance of public transportation within its overall transportation system and the need for transit to provide better service to compete with private vehicles as follows:

"Public transportation will need to play a key role within communities in Idaho's future transportation system. Public transportation will need to be increasingly convenient and comfortable to provide a viable alternative to driving. Public transportation will need to offer additional options for safe transportation so that baby boomers will consider voluntarily shifting from private vehicles to avoid the expense of personal vehicles and their greater potential for accidents."

County Level

The following sections summarize comprehensive plans, public transportation plans, and other types of plans developed by counties that provide examples of ways in which mobility and access concerns are addressed at that level. Some these plans were prepared in response to the requirements of state-level transportation plans or policies, or refer back to mobility goals or direction contained in those state-level documents. In some cases, such as Broward County's Transportation Disadvantaged Service Plan, county-level plans go beyond stating broad mobility goals to establish specific standards for transportation services.

King County, WA

King County, Washington has two plans directing transportation in the county. The *King County Comprehensive Plan* articulates transportation policies with explicit concern for persons with disabilities:

"In addition to encouraging transit, and non-motorized mobility choices including pedestrian and bicycle travel, the transportation system should address the needs of persons with disabilities. King County should evaluate and implement, when appropriate, innovative ways to address these needs in the design and operation of transportation infrastructure, facilities and services." ⁽⁴⁶⁾

The *King County Long-Range Policy Framework for Public Transportation* (LRPF) is not as explicit about transit-dependent populations as the comprehensive plan. ⁽⁴⁷⁾ Rather, it offers generalizations about mobility objectives, such as enhancing access to jobs and increasing public transportation travel opportunities through integrated and complementary services. King County transportation providers must interpret for themselves what constitutes adequate access from the suggestions offered by the county plans. Fortunately, the state plans offer more detail and guidance.

Snohomish County, WA

The *Snohomish County GMA Comprehensive Plan* thoroughly outlines the ways in which county transportation decision making is subject to state laws and plans. ⁽⁴⁸⁾ Based on these laws and plans, the county developed a transportation element for its comprehensive plan that is consistent with state objectives, yet highly detailed and relevant to Snohomish County itself. The transportation portion of the comprehensive plan establishes minimum criteria for transit with regard to the level of service (see Appendix E, Table A5 for detail). Snohomish County uses transit

compatibility with land use to establish the level of service based on three factors: land use density, on-site compatibility, and off-site compatibility. The level of service is broken down by urban or rural and residential or commercial. This information is used to determine the type of public transit that is compatible with the development type, such as high capacity transit, regular fixed route, or demand response.

Broward County, FL

Broward County has a number of planning documents that work consistently together to provide guidance on public transportation services. The plans include: *Broward County Comprehensive Plan*, *Strategic Regional Policy Plan*, *Broward County Transit Development Plan*, *Commission for the Transportation Disadvantaged 5 year/20 year Plan*, *Broward County MPO Long-Range 2025 Transportation Plan*, *Broward County Area-wide Job Access Reverse Commute*, and the *Transportation Disadvantaged Service Plan*. The focus here will be on the last of these plans.

The Broward County Metropolitan Planning Organization and the Board of County Commissioners collaborate to produce an annual Transportation Disadvantaged Service Plan (TDSP).⁽⁴⁹⁾ The TDSP includes long-range goals and objectives, a one-year service plan, quality assurance information, and cost allocation information. Each TDSP includes a service analysis that forecasts the transportation disadvantaged population of the county, identifies their needs and the barriers to coordination. The service plan identifies operational elements, such as time and days of operation, various transportation programs for TD clients, and inter-county transportation arrangements. The service plan also identifies ways clients can access services. These include a listing of available transportation services from Broward County Transit (BCT), directories from the Agency on Aging, Developmental Services, and Henderson Mental Health, and a paratransit rider guide from BCT. The service plan encompasses many of the factors necessary to establish what the county and state expect in terms of transportation coverage and service for transportation disadvantaged persons. The TDSP also includes service standards for the transportation providers. These standards are developed in accordance with the ADA, and state and local criteria. Among the service standards, contractors are required to schedule pickups for origination and return trips no more than one hour prior to or after the requested time; provide door-to-door service, although they are not required to lift the client; use vehicles not more than five years old and have a seatbelt for every seat available. Additionally, the service standards mention trips to Miami for various purposes offered twice per week and prohibit schedule prioritization based on the purpose of the trip.

Lancaster County, NE

In September 2004, the *Multimodal Transportation Plan Study* for the City of Lincoln and Lancaster County in Nebraska was completed.⁽⁵⁰⁾ The primary focus of this study was to identify realistic means for expanding travel, mobility, and accessibility opportunities within the City and County by supporting and promoting alternative modes of transportation. The report includes short and long term actions for the public transportation system to help in achieving this goal. The short term actions provide specific design and operational guidelines as follows:

- Establish Core Service Area and Increase Service Levels within that Core Area
 - Identify a core service area for StarTran (fixed route provider) within which transit services would be concentrated and expanded

- Existing *routes would be shortened* based on a minimum threshold of boardings per day per transit *stop of 5 or less boardings per day per stop*
- Reallocate operational funding available (due to route shortening), estimated in \$1.4 million annually, to increase services in the identified core area by decreasing headways to 15-25 minutes during peak times and 30-40 minutes during non-peak times
- Consider Providing Taxi Service to Patrons Outside Core Area: a taxi service could be established to transport patrons that live and work beyond the core service area. This service would transport them to the end of a bus line at which point the patron could "transfer" on to the bus route at no additional charge. The patron would pay for the service at the standard transit fare price, and StarTran would pay for the balance of the taxi fare
- Extend Transit Service Hours and Days of Service
 - Weekday service hours should be extended to run until midnight
 - Saturday service should match non-peak weekday service and be extended until midnight
 - Sunday service should be reintroduced, matching current partial Saturday service and also run until midnight
- Fully Implement Modified Grid System: StarTran should "[e]xpand the modified grid system while maintaining the productive elements of the radial system serving Downtown. Reallocate less productive radial service into grid services by targeting emerging mixed-use activity centers and corridors." (50, pg C7)
- Implement Pilot Project for Low Income Patrons of Bus Services: it is proposed that all eligible low income patrons be provided the opportunity to purchase a StarTran monthly "passport" for \$5.00 per month. This would allow them to take unlimited rides on the StarTran fixed route system. Eligibility would be in accordance with the federal poverty level guidelines used most often by non-profit agencies and the State Health and Human Services System.

Local & Provider Level

Similar to county-level plans, plans developed by transportation providers or municipalities often refer back to statewide transportation goals or priorities. In several of the examples described below, broad mobility goals are translated into specific service strategies or standards and criteria for determining the type or level of transportation service to be provided, or measuring its performance.

King County Metro, Seattle, WA

King County Metro service planning is subject to the objectives and strategies of state and county level plans above it. In the provider's six year plan, objectives to enhance mobility include improving pedestrian access and the waiting environment for transit facilities, including access for persons with disabilities. (51) The plan also includes a strategy for improving specialized transportation that involves finding cost-effective options to transport transit-dependent populations and to supplement mandated paratransit services; and to involve those eligible for paratransit service in transportation services available to the general public. (51)

Corvallis Transit System, Corvallis, Oregon

The Corvallis Public Works Department Division of Transportation recently produced a transit master plan for the city. ⁽⁵²⁾ The plan is superseded by a number of documents with which it must comply, including Benton County's comprehensive plan and Corvallis' comprehensive plan, land development codes, transportation plan, transportation demand management plan, and various area plans. Each of these articulates transportation policies and actions regarding adequate levels of transportation. The county comprehensive plan spells out the need to provide public transportation and paratransit for those with disabilities and the transportation disadvantaged. Building on the general statement from the county plan, the city's comprehensive plan proposes using route and schedule analysis to determine need; it includes policies that provide extra consideration in designing the transportation system for "those people who have limited choice in obtaining private transportation."

Providing practical public transportation options for all citizens, including youth, elderly, persons with disabilities, and low-income residents, is a key aspect of the Corvallis Transit System's (CTS) mission statement. CTS's commitment to this mission is emphasized in the *Corvallis Area Draft Transit Master Plan*. The long-range service concept section of the plan directly addresses transportation for seniors and persons with disabilities. The document lays out the following strategies:

- Preserve service that directly accesses developments and activity centers for seniors and persons with disabilities, as well as other locations frequently visited by the disabled
- Use service routes or deviated fixed routes to cover destinations important to seniors and persons with disabilities when regular fixed route is not feasible
- Promote paratransit use for seniors and persons with disabilities who are unable to use regular fixed route. Continue to encourage those that can use regular fixed route to do so, possibly by offering incentives
- Only allow new developments serving seniors and persons with disabilities to locate along the primary public transportation corridors or major arterials that transit vehicles can easily access, including housing and activity centers.

Tri-Met, Portland, Oregon

A long-range planning study for Tri-Met in Portland, Oregon used the concept of a transit orientation index (TOI). ⁽⁵³⁾ The study found that employment density, housing density, and retail employment density were the most significant variables influencing ridership, accounting for 81% of the variation in transit demand within the Portland area. The TOI scores were used in developing proposed policies for the amount and kind of service provided to areas: the higher the TOI score, the higher the quality of transit service to be provided that area. Because the ridership estimates were developed using local data, the regression equation and the ranges of values used to develop TOI scores only apply to the Portland area. However, the methodology used would be applicable anywhere to develop a similar index.

Massachusetts Bay Transportation Authority, Boston, MA

The MBTA's 1996 Service Delivery Policy was created to implement objective standards and consistent decisions-making procedures for evaluating existing and proposed services. ⁽⁵⁴⁾ Since

1996, the Service Delivery Policy has been revised twice: in 2002 and 2004. These revisions were proposed with the 2002 and 2004 Service Plans and were discussed and commented on at the public meetings/hearings that were held for both Service Plans. The proposed Service Delivery Policy revisions were also posted on the MBTA's web site, through which additional public comment was accepted.

Chapter 3 of the Service Delivery Policy includes service standards for accessibility, reliability, safety and comfort, and cost effectiveness. Of interest to this study are the accessibility service standards or guidelines, which are defined as follows (see Appendix E for additional detail):

- **Coverage:** The MBTA's desired level of service area coverage is expressed as a guideline rather than a standard, because uniform geographic coverage cannot always be achieved due to constraints such as topographical and street network restrictions. The guideline for weekdays and Saturdays is to have transit service accessible within ¼ mile walk to residential areas with a population density greater than 5,000 persons per square mile. The guideline for Sunday extends the walking range to ½ mile.
- **Span of Service:** The MBTA has established Span of Service Standards that define the minimum period of time that any given service will operate. This provides customers with the confidence that particular types of services will be available throughout the day. However, the minimum Span of Service may be extended at either end of the day, based on customer demand and in accordance with the other service standards.
- **Frequency of Service:** The MBTA has established minimum frequency of service levels for each mode, by time of day. On less heavily traveled services, these minimum levels dictate the frequency of service, regardless of customer demand. On heavily used services, the minimum frequency of service levels may not be sufficient to meet customer demand. When load levels indicate that additional service is warranted, the frequency of service is increased to provide a sufficient number of vehicles to accommodate passenger demand.

Capital District, Albany, NY

The original *New Visions* process concluded in 1997, and a review was done in 2000.⁽⁵⁵⁾ The goal of this process was to develop a regional consensus on transportation policy looking at longer-term issues than the 10-year Regional Transportation Plan (RTP) and available financial resources. The result was a multi-modal plan that reflected a consensus of Capital District Regional Planning Commission (CDTC) members regarding the direction and focus that will meet the region's mobility and other needs for transportation in the Capital District through the year 2015. The process was built around public involvement. *New Visions* gave a voice to stakeholder groups not previously represented at the CDTC table. The articulation of widely diverging positions helped identify common ground later.

This plan contains specific performance measures for transportation services regarding access, accessibility, congestion, and flexibility. A general overview of the measures that are directly related to public transportation is presented below. Additional detail may be found in Appendix E.

- **Access:** What travel alternatives exist? Selected performance measures are:
 - % of person trips within a defined non-auto (walk, bike, transit) to auto time difference.
 - % of person trips with a travel time advantage for non-drive-alone modes

- **Accessibility:** How much time does travel take? The specific measure is the travel time between representative locations, including major intermodal facilities; peak vs. non-peak, by quickest mode.
- **Congestion:** What is the level of exposure to traffic congestion?
 - Daily recurring excess person-hours of delay by mode
 - Excess person hours of delay in peak hour per PMT

Literature Review Summary and Conclusion

Federal Obligations Regarding Transportation Access

The federal government does not prescribe specific standards for level of service in public transportation. Rather, it has established several requirements regarding discrimination. Under federal law, transportation providers must provide access and service to all persons regardless of race, color, ethnicity, and abilities. They must also provide their services in a manner that does not disparately impact minority or low-income populations. Additionally, through federal initiatives, the federal government is making strides to improve human service transportation coordination.

New York State, Regional and Local Obligations and Guidance for Transportation on Long Island

New York State has a few requirements for public transportation providers and several other pieces of guidance regarding adequate access. The obligations include those from the State Transportation Operating Assistance Program (STOA) and DOT procedural requirements for pedestrian accommodations. The STOA requirements focus on general operating requirements while the DOT requirements deal with physical access and are based on federal guidelines from the American Association of State Highway Transportation Officials and the ADA Accessibility Guidelines. The guidance documents from NYS include the state transportation plan and the Quality Communities Initiative. The state transportation plan provides public transportation operators with strategies, guiding principles and ways to address transportation issues including coordination, technology, safety and transportation demand for demand responsive services. The Quality Communities Initiative flows from an executive order aimed at improving quality of life for New Yorkers through various initiatives, including providing transportation choices for residents that improve health, reduce automobile dependency, and alleviate congestions problems.

Long Island belongs to a larger region that encompasses New York City and counties such as Putnam, Westchester and Rockland which fall under the jurisdiction of NYMTC. Most of the regional documents from NYMTC and other organizations are for guidance purposes, not binding obligations. The regional transportation plan and NYMTC's shared goals emphasize balancing resource needs with transportation priorities and improving the quality of life, economy and environment of the region. The Area-wide JARC plan and Environmental Justice Assessment are other regional documents related to adequate access to transportation.

Long Island has several other plans and studies directly related to transportation issues in Nassau and Suffolk Counties. In general, these documents encourage the use of public transportation as an alternative to single occupancy vehicles. However, they also recognize the limitations to providing public transportation as a fixed route service, especially in low density areas, and are careful to suggest that coordination of systems and alternatives to traditional public transportation be implemented as much as possible. The documents indicate the need for a balance between what the providers are capable of providing and meeting the needs of the passengers with regard to service frequency, span and fare.

Transit Industry Standards

Standards and guidelines that are used within the transit industry to determine the suitability of fixed route service to a given area are often based on density measures. The most commonly used standard is a density of at least three households per acre or four jobs per acre to support transit service that operates at least hourly. More complex standards that incorporate different types of density and characteristics of transit service have been developed for some local areas.

Fewer standards or guidelines relate to the suitability of flexible or demand responsive services to an area, although it can be inferred that areas that do not contain the densities of population or employment needed to support fixed route services would be served more effectively with one of these other transportation options. The level or quality of demand responsive service is sometimes measured by response time, or the number or percentage of trip requests that are denied.

Measures that are used to evaluate a transportation service's performance can also be used to determine desirable levels of service. Specific quantifiable performance measures have been developed to evaluate items such as the following:

- The extent to which target transportation markets are served (geographically)
- The temporal availability of transit service
- The ability of the transportation service to provide access to key destinations within a reasonable time and at a reasonable cost
- The equity of transit service provision across communities or population groups

Examples of specific industry standards and performance measures are provided in Appendix E.

Area-Specific Mobility Goals and Service Standards

Section Three provided an expansive overview of different transportation policies and strategies from various states, counties and localities. It is important to consider the structure of government in transportation decision making for each area. Due to differences in decision making power, some innovative ideas deployed in one state or region may not be feasible on Long Island. Despite these possible limitations, the information from other areas on how they define adequate access to transportation can be valuable to Long Island transportation decision makers and should be considered in the context of Long Island's transportation needs.

At the state level, mobility or access goals are often broadly stated. Among the more interesting goals that are expressed in the state plans that were reviewed are the following:

- Some form of public transportation should be available in all communities (Washington)
- Public transportation should connect individuals in geographically isolated areas with jobs, commerce, and services (Washington)
- At a minimum, transportation disadvantaged individuals should have access to transportation options such as ridesharing, volunteer programs, taxi service, or minibus service; all areas with populations of 10,000 or more should receive demand response service (Oregon)
- Public transportation should focus on mobility management and coordination of services (Oregon)

- Strategies should be developed to reduce barriers to accessing basic services, employment, education, and social services (Oregon)
- Access to public transportation, and information about using it, should be provided to seniors (Oregon)
- Mobility needs in small communities should be addressed (Oregon)
- Density should determine the type of service that is provided; services must meet the performance standards that have been established for urban, suburban, and rural areas (Vermont)
- Transportation should support access to employment, congestion mitigation, and economic development objectives (Vermont)
- Local transportation options must be provided for transportation disadvantaged individuals, and in a coordinated manner (Florida)

Specific strategies for providing transportation services or standards for making decisions about the type or level of service to be provided are more often established at the county, municipality, or transportation provider level. Examples local mobility strategies include the following:

- Find cost-effective transportation options for transit-dependent populations to supplement mandated paratransit services, and involve paratransit-eligible individuals in general public transportation services (King County Metro)
- Preserve service that provides direct access to developments and activity centers for seniors and persons with disabilities (Corvallis Transit System)
- Use service routes or deviated fixed routes to cover destinations important to seniors and persons with disabilities when regular fixed route is not feasible (Corvallis Transit System)
- Promote paratransit use for seniors and persons with disabilities who are unable to use regular fixed route (Corvallis Transit System)
- Only allow new developments serving seniors and persons with disabilities to locate along the primary public transportation corridors or major arterials that transit vehicles can easily access, including housing and activity centers (Corvallis Transit System)

More detail about mobility goals and service standards can be found in Appendix E.

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Appendix E
Literature Review - Technical Documents

1 Introduction

This Appendix provides additional details and direct legislative and policy language for most of the laws and examples included in the literature review. This document follows the organization of the literature review:

- Obligations and government recommendations for providing access to transportation.
- Industry standards and guidelines for the suitability of fixed route and demand response service.
- Access levels and decision-making processes.

Each section provides the language or technical details of the literature reviewed in the same order it appears in the literature review report.

2 Obligations and government recommendations for providing access to transportation

49 CFR 21, Appendix C – Federal Financial Assistance to the Department of Transportation as part of implementing Title VI of the Civil Rights Act of 1964^(1, 2)

Policy language referring to the Urban Mass Transportation Administration:

(i) Any person who is, or seeks to be, a patron of any public vehicle which is operated as a part of, or in conjunction with, a project shall be given the same access, seating, and other treatment with regard to the use of such vehicle as other persons without regard to their race, color, or national origin.

(ii) No person who is, or seeks to be, an employee of the project sponsor or lessees, concessionaires, contractors, licensees, or any organization furnishing public transportation service as a part of, or in conjunction with, the project shall be treated less favorably than any other employee or applicant with regard to hiring, dismissal, advancement, wages, or any other conditions and benefits of employment, on the basis of race, color, or national origin.

(iii) No person or group of persons shall be discriminated against with regard to the routing, scheduling, or quality of service of transportation service furnished as a part of the project on the basis of race, color, or national origin. Frequency of service, age and quality of vehicles assigned to routes, quality of stations serving different routes, and location of routes may not be determined on the basis of race, color, or national origin.

(iv) The location of projects requiring land acquisition and the displacement of persons from their residences and businesses may not be determined on the basis of race, color, or national origin.

49 CFR 37, Subpart F – implementing comparable complementary paratransit service on fixed route lines for Americans with Disabilities Act^(3, 4)

Sec. 37.121 Requirement for comparable complementary paratransit service.

- (a) ... each public entity operating a fixed route system shall provide paratransit or other special service to individuals with disabilities that is comparable to the level of service provided to individuals without disabilities who use the fixed route system.*
- (c) Requirements for complementary paratransit **do not apply to commuter bus, commuter rail, or intercity rail systems.***

Sec. 37.131 Service criteria for complementary paratransit.

- (a) **Service Area--**(1) Bus. (i) The entity shall provide complementary paratransit service to origins and destinations within corridors **with a width of three-fourths of a mile on each side of each fixed route.** The corridor shall include an area with a three-fourths of a mile radius at the ends of each fixed route.*
 - (ii) Within the core service area, the entity also shall provide service to small areas not inside any of the corridors but which are surrounded by corridors.*
 - (iii) Outside the core service area, the entity may designate corridors with widths from three-fourths of a mile up to one and one half miles on each side of a fixed route, based on local circumstances.*

- (iv) For purposes of this paragraph, the core service area is that area in which corridors with a width of three-fourths of a mile on each side of each fixed route merge together such that, with few and small exceptions, all origins and destinations within the area would be served.
- (2) Rail. (i) For rail systems, the service area shall consist of a circle with a radius of 3/4 of a mile around each station.
- (ii) At end stations and other stations in outlying areas, the entity may designate circles with radii of up to 1 1/2 miles as part of its service area, based on local circumstances.
- (3) Jurisdictional boundaries. Notwithstanding any other provision of this paragraph, an entity is not required to provide paratransit service in an area outside the boundaries of the jurisdiction(s) in which it operates, if the entity does not have legal authority to operate in that area. The entity shall take all practicable steps to provide paratransit service to any part of its service area.
- (b) **Response time.** The entity shall schedule and provide paratransit service to any ADA paratransit eligible person at any requested time on a particular day in response to **a request for service made the previous day.** Reservations may be taken by reservation agents or by mechanical means.
- (1) The entity shall make **reservation service available during at least all normal business hours** of the entity's administrative offices, as well as during time, comparable to normal business hours, on a day when the entity's offices are not open **before a service day.**
- (2) The entity may negotiate pickup times with the individual, but the **entity shall not** require an ADA paratransit eligible individual to **schedule a trip to begin more than one hour before or after the individual's desired departure time.**
- (3) The entity may use real-time scheduling in providing complementary paratransit service.
- (4) The **entity may permit advance reservations to be made up to 14 days in advance** of an ADA paratransit eligible individual's desired trips. When an entity proposes to change its reservations system, it shall comply with the public participation requirements equivalent to those of Sec. 37.131(b) and (c).
- (c) **Fares.** The fare ... **shall not exceed twice the fare** that would be charged to an individual paying full fare (i.e., without regard to discounts) for a trip of similar length, at a similar time of day, **on the entity's fixed route system.**
- (2) The fares for individuals accompanying ADA paratransit eligible individuals... shall be the same as for the ADA paratransit eligible individuals they are accompanying.
- (3) **A personal care attendant shall not be charged** for complementary paratransit service.
- (4) The entity may charge a fare higher than otherwise permitted by this paragraph to a social service agency or other organization for agency trips (i.e., trips guaranteed to the organization).
- (d) **Trip purpose restrictions.** The entity shall **not impose restrictions or priorities based on trip purpose.**
- (e) **Hours and days of service.** The complementary paratransit **service shall be available throughout the same hours and days as** the entity's **fixed route** service.
- (f) **Capacity constraints.** The entity shall not limit the availability of complementary paratransit service to ADA paratransit eligible individuals by any of the following:
- (1) Restrictions on the number of trips an individual will be provided;
- (2) Waiting lists for access to the service; or

- (3) Any operational pattern or practice that significantly limits the availability of service to ADA paratransit eligible persons.
- (i) Such patterns or practices include, but are not limited to, the following:
- (A) Substantial numbers of significantly untimely pickups for initial or return trips;
 - (B) Substantial numbers of trip denials or missed trips;
 - (C) Substantial numbers of trips with excessive trip lengths.
- (ii) Operational problems attributable to causes beyond the control of the entity (including, but not limited to, weather or traffic conditions affecting all vehicular traffic that were not anticipated at the time a trip was scheduled) shall not be a basis for determining that such a pattern or practice exists.

Sec. 37.133 Subscription service.

- (a) This part does not prohibit the use of subscription service by public entities as part of a complementary paratransit system, subject to the limitations in this section.
- (b) Subscription service may not absorb more than fifty percent of the number of trips available at a given time of day, unless there is non-subscription capacity.
- (c) Notwithstanding any other provision of this part, the entity may establish waiting lists or other capacity constraints and trip purpose restrictions or priorities for participation in the subscription service only.

Long Island Rail Road Service Guidelines

LIRR Station Facility Level of Service Matrix ⁽⁵⁾

	Level 1	Level 2	Level 3	Level 4
Staffed Ticket Office	X			
Public Restrooms	X	X		
Station Waiting Rooms	X	X	X	
Ticket Vending Machines (TVMs)	X	X	X	X
Public Address System	X	X	X	X
Platform Shelters	X	X	X	X
Public Pay Phones	X	X	X	X
Customer Information Centers	X	X	X	X

LIRR Service Frequency Level of Service

Level of Service	Weekday Peak	Off-Peak	Weekend
Level 1	20 minutes	60 minutes	60 minutes
Level 2	30 minutes	60 minutes	60 minutes
Level 3	45 minutes	90 minutes	90 minutes
Level 4	60 minutes	120 minutes	120 minutes

LIRR Loading Standards

ELECTRIC			Customer Load Range			
	Seating Capacity		Peak		Off-Peak	
Cars	M-3	M-7	Reduce Cars	Increase Cars	Reduce Cars	Increase Cars
6	720	636	N/A	604	N/A	572
8	960	848	541	806	509	763
10	1200	1060	721	1007	678	954
12	1440	1272	901	N/A	848	N/A

DIESEL		Customer Load Range			
	Seating Capacity	Peak		Off-Peak	
Cars	C-3	Reduce Cars	Increase Cars	Reduce Cars	Increase Cars
1	140	N/A	126	N/A	119
2	280	119	252	112	238
3	420	238	378	224	357
4	560	357	504	336	476
5	700	476	630	448	595
6	840	595	756	560	714
7	980	714	882	672	833
8	1120	833	1008	784	952
9	1260	952	1134	896	1071
10	1400	1071	1260	1008	1190
11	1540	1190	1386	1120	1309
12	1680	1309	N/A	1232	N/A

Industry standards and guidelines for the suitability of fixed route and demand response

Transit Capacity and Quality of Service Manual (TCQSM) ⁽⁶⁾

In addition to minimum density standards, TCQSM also establishes three measures to evaluate service coverage:

- *Route kilometers per square kilometer (or route miles per square mile)*: this measure is relatively easy to calculate, but does not address on a system-wide basis how well the areas that generate the most transit trips are being served, nor does it address how well transit service is distributed across a given area.
- *Percentage of the system area served*: this measure is again relatively easy to calculate with a geographic information system (GIS), but it fails to recognize that land uses and population and job densities may vary greatly from one system to another, depending on how land uses have developed and how the system's boundaries have been drawn. Urban transit system boundaries might include large tracts of undeveloped land that may develop in the future, while county-wide systems will likely include large tracts of rural land. Neither area would be expected to generate transit trips. How the boundaries are drawn will determine how much area is included within the service area, which in turn will affect any area-based performance measures. As a result, service areas are not the best basis for developing service coverage performance measures.
- *Percentage of transit-supportive area covered*: this figure is the recommended measure for service coverage and it seeks to determine how much of the areas that may support transit (i.e. areas with 3 or more households/gross acre) actually have transit available. This measure is easier to determine with a GIS. For policy reasons, or simply to provide a route connecting two high density areas, an agency may choose to—and likely will—cover a larger area. However, service coverage level of service (LOS) is based solely on the percentage of the transit-supportive area covered by transit.

The Manual presents a Level Of Service (LOS) guideline for Service Coverage based on the last measure described—percentage of transit-supportive area covered. The LOS table is presented below.

Guidebook for Developing a Transit Performance Measurement System, TCRP Report 88 ⁽⁷⁾

TCRP Report 88 provides detailed information on performance measures that can be used to determine how well a transit service meets needs in its area, or to determine where or how much service should be provided to meet mobility goals. The measures applicable to both fixed route and demand response are listed first, followed by fixed route only measures and finally demand response only measures.

Demographics

- Definition: the number of people with a specific characteristic for whom transit could be a significant travel mode (pg 240); for example:
 - percent of households in service area without cars
 - percent of population in service area too young to drive
 - percent of population in service area with incomes under \$X
 - percent of elderly/disabled population in service area
- Modes: Fixed Route, Demand Response

- Example: Capital Metro in Austin, Texas pays “close attention” to areas where (1) the percentage of households without an automobile exceeds 10% and (2) the percentage of elderly residents exceeds 10%.

Accessibility

- Definition: The ease and convenience with which desired destinations can be reached (pg 241); it can be measured as
 - number/percent of people/jobs served by transit
 - percent of population living within X miles, Y minutes, Z dollars, or N transfers of opportunities (e.g., jobs, shopping) via transit
 - percentage of major activity centers (office complexes, hospitals, schools, etc.) within X miles or Y minutes of transit services or facilities
 - number of transportation options available
 - percent of special-needs populations with access to transit services
- Modes: Fixed Route, Demand Response
- Example: Capital Metro tries to provide fixed-route service to major activity centers, which include
 - employment centers with at least 500 employees
 - hospitals or nursing homes with at least 100 beds
 - social service agencies with at least 75 daily clients
 - educational institutions with at least 1,000 students
 - retail centers of at least 100,000 square feet
 - government agencies with at least 100 daily clients
 - apartment complexes of at least 300 units.

Welfare to Work Accessibility

- Definition: ability of the transit network to meet the job-related transportation needs of TANF (Temporary Assistance for Needy Families) clients. It can be measured in many ways; the percent of entry-level jobs with transit service during work hours is often used. Thakuria and Metaxatos developed a Welfare to Work Accessibility Index that includes a weighted combination of transit and auto travel times of TANF clients to jobs, and the competition among TANF clients for jobs. ⁽⁸⁾
- Modes: Fixed Route, Demand Response
- Examples: 100% of all entry level jobs in the Chicago metropolitan area are accessible within 90 minutes by car; the percentage drops to 60% for travel by public transportation.

Service Equity

- **Definition:** distribution of transit benefits and impacts on various communities and population groups (pg 244). It can be measured
 - by examining those who benefit and those who are worse off with a transit project
 - by examining whether minority and/or low-income groups are better or worse off
- **Modes:** Fixed Route, Demand Response
- **Examples:** Examples of measures to be used to assess service equity are:
 - Jobs within 60 minutes of transit access by low-income population vs. jobs within 60 minutes of transit access by the rest of the population
 - Percentage of transportation disadvantaged (without access to a car) with access to transit vs. percentage of the non-transportation disadvantaged population with access to transit

Service Coverage

- **Definition:** it can be defined in many ways; this report recommends using the *Transit-Supportive Area* concept from the TCQSM.⁽⁶⁾
- **Modes:** Fixed Route, Demand Response
- **Comments:** see the *TCRP Web Document 6 – Transit Capacity and Quality of Service Manual* table below. For demand-responsive service, the entire service area should be included.

Table A1: Level of Service Guidelines for Fixed Route Service Coverage

LOS	% Transit Supportive Area Covered
A	90.0 - 100.0
B	80.0 – 89.9
C	70.0 – 79.9
D	60.0 – 69.9
E	50.0 – 59.9
F	<50.0

Transit-Supportive Area: The portion of the area being analyzed that has a household density of at least 7.5 units per gross hectare (3 units per gross acre) or an employment density of at least 10 jobs per gross hectare (4 jobs per gross acre)
Covered Area: The area within 0.4km (0.25 mi) of local bus services or 0.8km (0.5 mi) of a bus way or rail station, where pedestrian connections to transit are available from the surrounding area.

Percent Person-Minutes Served

- **Definition:** “Average percent of time that a transit service is available within a given area” (i.e. stop, route, zone). Also known as the “Florida Transit Level of Service (TLOS) Indicator.”^(7, pg 194) ⁽⁸⁾
- **Modes:** Fixed Route, Demand Response
- **Example:** For TAZ 263 in Tallahassee, Florida, from 7:00 a.m. to 7:59 a.m., transit service was available for 7,442 person-minutes out of 109,800 total possible person-minutes. Percent person-minutes served is 7%.
- **Comments:** It is a combined measure of spatial and temporal availability. See also Section 4.

Transit Service Accessibility Index

- **Definition:** Number of trip ends exposed to transit service. ^(7, pg 196)
- **Modes:** Fixed Route, Demand Response
- **Example:** In Tampa, the per capita transit availability rate (total trips exposed to transit per day divided by area population) was 0.095. The percentage of trips possible by transit, assuming 4.2 trips per person

per day, was $(0.095/4.2*100)$, or 2.3%. Transit's mode split in Tampa is 0.7%, from which it can be calculated that 30% $(0.7/2.3)$ of all trips in which transit was an option were made by transit.

- Comments: It ties travel demand to available transit supply.

Route (Corridor) Spacing

- Definition: distance between two parallel routes or corridors (pg 179)
- Modes: Fixed Route
- Guideline: one-half mile spacing is typically required in high-density areas. One mile spacing is typically used for express routes.

Route Coverage

- Definition: various measures can be used, for example routes miles per square mile or transit miles per square miles
- Modes: Fixed Route
- Example: Washington, D.C had 4.3 directional route-miles per square mile in 1990 while its peer group (i.e., cities with population density > 2,000 and population > 1 million) provided an average of 3.3 directional route-miles per square mile in 1990.

Service Density

- Definition: number of routes within walking distance of a zone
- Modes: Fixed Route
- Example: Petersen used a maximum of 10 routes passing through a zone for its Chicago correlation analysis. ⁽¹²⁾

Transit Orientation Index (TOI)

- Definition: Scored estimate of ridership in a Transportation Analysis Zone (TAZ) based on a locally developed regression model that relates ridership to employment, housing, and retail employment densities.
- Modes: Fixed Route
- Comments: It evaluates whether and how much transit service should be available to a TAZ. The higher the TOI, the greater the potential demand for transit in a zone. Nelson Nygaard used it for a study in Portland, OR. See also Section 4. ⁽¹³⁾

Transit Accessibility Index

- Definition: The ease and convenience of reaching a destination by transit; considers total travel time between O-D pairs, transit fare, and out-of-pocket cost for autos. ^(714, pg 198) There are two indexes, one for travel time and one for travel costs. It can be calculated for any two modes.
- Modes: Fixed Route
- Example: The accessibility index for bus travel time is ***Time by bus / (1/2 * (Time by car + Time by bus))***. In Schoon, McDonald, and Lee the travel time accessibility index for bus is 1.3 and for car 0.67 while the travel cost accessibility index is 1.2 for bus and 0.95 for car. ⁽¹⁴⁾
- Comments: It is recommended for corridor analyses, not for region wide analyses.

Local Index of Transit Availability (LITA)

- Definition: A measure of "transit service intensity," based on capacity, frequency, and route coverage. ^(7, pg 199) Rood developed a local index of transit availability (LITA) to measure the intensity of transit service in an area relative to the area's population and size. The LITA contains three components: (1)

frequency, (2) capacity, and (3) route coverage. Frequency is measured using transit vehicles per day, averaged over the course of a week. Seat-miles divided by combined residential population and jobs is used for capacity, while transit stops per square mile is used for route coverage.

- Modes: Fixed Route
- Example: To calculate the LITA, a score value is calculated for each LITA component for each TAZ, census block, or other aggregation area used in the analysis. Only areas with transit service are included in the analysis; areas without transit service are assigned a grade of “F” automatically and not included in further calculations to avoid lowering the mean. The scores for areas served by transit are then standardized by subtracting each component’s mean value from the score value and dividing the result by the standard deviation for that component. Next, the three components are averaged together to produce an overall LITA score for the TAZ, census block, etc. Finally, the scores are rescaled and assigned a letter grade based on a score’s variation from the mean.
- Comments: This measure assesses relative differences in transit availability, rather than providing an absolute measure of the amount of transit availability. As a result, a high or low letter grade does not necessarily mean that service is good or bad relative to some standard, only that service is better or worse than the local area average. As the name implies, the Local Index of Transit Availability scores can only be used to compare transit service within the local area where the data were developed. However, the methodology can be used anywhere.

Index of Transit Service Availability (ITSA)

- Definition: A planning-level measure of metropolitan area transit service availability. (pg 200) It includes a service coverage component (directional route-miles per square mile), a frequency component (vehicle-miles per directional mile), and a system capacity component (seat-miles per capita). All components are normalized and unweighted in the ITSA calculation.
- Modes: Fixed Route
- Example: Henk et al calculated the ITSA for 228 cities.⁽¹⁶⁾ Some examples are: New York (ITSA = 7.5), San Francisco (6.6), Atlanta (6.6), Charlotte (6.1), Portland, OR (5.2), Houston (5.0), Los Angeles (4.7), Kansas City (4.7), Phoenix (4.5), and St. Louis (4.4).
- Comments: This measure allows the comparison of transit service availability over time between metropolitan areas with similar demographic characteristics.

Response Time

- Definition: Minimum time between when service is requested and when service can be provided (pg 191)
- Modes: Demand Response
- Examples: The TCQSM developed the following LOS table for response time:

Table A2: LOS Response Time

LOS	Access Time (h)	Comments
A	0.0 – 0.5	Fairly prompt response
B	0.6 – 1.0	Acceptable response
C	1.1 – 2.0	Tolerable response
D	2.1 – 4.0	Poor response, may require advance planning
E	4.1 – 24.0	Requires advance planning
F	>24.0	Service not offered every weekday or at all

- Comments: ADA Complementary Paratransit service mandate: next day response time

Service Denials

- Definition: The percentage of trip requests in which service cannot be adequately provided. (pg 202) A service denial is specifically defined by the ADA as failure to provide a scheduled trip within an hour of either side of the requested time to travel. Should no trip be available in that 2-hour window, the request for service is termed as “denial”.
- Modes: Demand Response
- Examples: MTA-NYCT Paratransit services had 125,654 denials citywide in 1998.

User's Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation, TCRP Report 6 ⁽¹⁷⁾

The report provides effectiveness and efficiency measures of the top performers for each service type. The tables below show these measures for demand responsive and fixed route types. These agencies are transportation-only agencies, as opposed to multipurpose agencies that have transportation as one of their services.

EFFECTIVENESS AND EFFICIENCY MEASURES PURE DEMAND-RESPONSIVE SYSTEMS TOP TRANSPORTATION ONLY PERFORMERS				
Effectiveness Measures				
		Agency	State	
Cost per Trip	1	Peach County Transit	GA	\$2.23
	2	City Cab Service	WI	\$2.39
	3	Habersham County Transit	GA	\$2.48
	4	Kimball Co. Handi-bus	NE	\$2.48
	5	Pulaski County Transit	GA	\$3.02
Cost per Mile	1	City Cab Service	WI	\$0.72
	2	Peach County Transit	GA	\$0.82
	3	Pulaski County Transit	GA	\$1.05
	4	Scottsbluff Handi-bus Service	NE	\$1.10
	5	Yellow Cab Company	WI	\$1.58
Cost per Hour	1	City Cab Service	WI	\$9.92
	2	Scottsbluff Handi-bus Service	NE	\$11.94
	3	Peach County Transit	GA	\$11.97
	4	Pulaski County Transit	GA	\$12.88
	5	Habersham County Transit	GA	\$14.29
Productivity measures				
Passengers per RVM	1	Habersham County Transit	GA	2.25
	2	Ripley Co. Transit Service	MO	1.33
	3	Kimball Co. Handi-bus	NE	1.12
	4	Liberty County Coa	MT	1.01
	5	City Of Belding Dial-a-Ride	MI	0.86
Passengers per RVH	1	Ripley Co. Transit Service	MO	13.33
	2	Kimball Co. Handi-bus	NE	11.11
	3	City Of Belding Dial-a-Ride	MI	8.88
	4	Ionia Dial-a-ride	MI	8.00
	5	City Of Shafter Dial-a-ride	CA	6.26
Number of systems reporting = 23				

EFFECTIVENESS AND EFFICIENCY MEASURES PURE FIXED-ROUTE SYSTEMS TOP TRANSPORTATION ONLY PERFORMERS				
Effectiveness Measures				
		Agency	State	
Cost per Trip	1	City of Kingston - Citibus	NY	\$2.57
	2	Dufast Transit	PA	\$2.69
	3	Tomtran	NY	\$5.43
	4	City Of Roswell	NM	\$10.23
	5			
Cost per Mile	1	Dufast Transit	PA	\$1.69
	2	City of Kingston - Citibus	NY	\$2.28
	3	Tomtran	NY	\$2.35
	4	City Of Roswell	NM	\$4.49
	5			
Cost per Hour	1	Dufast Transit	PA	\$24.59
	2	City of Kingston - Citibus	NY	\$30.73
	3	City Of Roswell	NM	\$53.88
	4	Tomtran	NY	\$55.62
	5			
Productivity measures				
Passengers per RVM	1	City of Kingston - Citibus	NY	0.89
	2	Dufast Transit	PA	0.63
	3	City Of Roswell	NM	0.44
	4	Tomtran	NY	0.43
	5			
Passengers per RVH	1	City of Kingston - Citibus	NY	11.97
	2	Tomtran	NY	10.24
	3	Dufast Transit	PA	9.14
	4	City Of Roswell	NM	5.27
	5			
Number of systems reporting = 4				

3 Mobility Goals and Service Standards

This section of the Appendix explains in more detail some of the indexes discussed in the previous section that were developed during studies for specific areas, for example the percent person-minutes served in Florida and the Transit Orientation Index in Portland. Public transportation policies, plans, and vision statements from other areas were also reviewed. Although these documents provide some figures that allow for benchmarking, care must be taken when comparing these policies with Long Island as the characteristics of the two areas may be very different.

STATE LEVEL

Oregon

Policy 2A of the 1997 Oregon Public Transportation Plan articulates minimum service standards for public transportation: “Rideshare matching and transportation demand management services should be available in communities of 10,000, and may be available in communities of 5,000 where there are large employers with a base of at least 500 employees who are not covered by a large regional program. General public transportation with fixed route of other service may be available, and all places of 10,000 people or more should have demand response service.”⁽¹⁸⁾

The 2001 Transportation System Plan Guidelines (TSP) provides information on work scope recommendations for public transportation elements of transportation system plans, as well as a needs assessment task checklist. ⁽¹⁹⁾ Tables A3 and A4 are adapted from the TSP.

Table A3: Key Tasks for Public Transportation Elements in Transportation System Plans

Task	Specific Actions
#1. Inventory Existing Conditions	<ul style="list-style-type: none"> • Review policy documents, sources of information, existing TSPs and relevant documents to determine existing services, policies and goals • Review demographic information to assess potential markets • Obtain detailed information regarding providers and services through agency database and phone interviews • ID existing services and data regarding use, demand, cost, capital equipment, proposed changes, problems and opportunities
#2. Assess Existing Shortcomings and Opportunities	<ul style="list-style-type: none"> • ID service and connectivity gaps and overlaps • Assess potential for increased coordination and opportunities to enlarge special needs service to the general public
#3. Assess Service Needs for the Planning Period	<ul style="list-style-type: none"> • Assess demographic and land use trends • Create a prioritized list of necessary improvements, including modal connections, increased frequency, etc • Provide a rough estimate for prioritized improvements
#4. Develop and Prioritize Strategies to Meet Future Needs	<ul style="list-style-type: none"> • ID coordination strategies and programs to enhance service • ID a funding strategy and necessary comprehensive plan amendments • Develop an implementation time frame

Table A4: Public Transportation Needs Assessment Task Checklist (partial list in column 2)

Step	Task Guidance/Examples
------	------------------------

#1. Review plans and documents containing relevant requirements, goals and policies	<ul style="list-style-type: none"> • Transportation Planning Rule • Oregon Transportation Plan • Oregon Public Transportation Plan • Local and County TSPs, corridor plans, and refinement plans
#2. Identify and inventory existing transportation services	<p><u>Organizations to Contact:</u></p> <ul style="list-style-type: none"> • Transit providers • Local government (city, county, tribal, etc) • Human service agencies • Hospitals or clinics • Local taxis • Large employers <p><u>Questions to Ask:</u></p> <ul style="list-style-type: none"> • Any transportation services provided? • If none, is there support for other transportation services? • Who is eligible?
#3. Assess present and future population and land use conditions	<p><u>Data sources:</u> Census, government (city or county), Portland State University population study</p> <p><u>Points of analysis:</u></p> <ul style="list-style-type: none"> • Total present and future population • Populations most likely to need public transportation: Elderly, disabled, low income, minority, people under driving age, persons without vehicles <p><u>Key land uses to map:</u></p> <ul style="list-style-type: none"> • Senior centers • Senior and disabled housing • Social services • Major employers • Major shopping centers • Schools and colleges • Airports and bus terminals
#4. Assess Shortcomings	<ul style="list-style-type: none"> • Comparison of service with standards in OTP and OPTP • Determination of service gaps and deficiencies Including mapping fixed route and highlighting areas with demand response to identify gaps visually
#5. Assess Opportunities	<ul style="list-style-type: none"> • Base initial potential for coordination on contact with providers from step 2 • Contact ODOT Public Transit Div. regarding potential funding options • Identify commuter patterns from step 2 interviews and assess potential for TDM strategies
#6. Develop proposed programs	<ul style="list-style-type: none"> • Outline and describe projects and programs • Create a list of proposed necessary improvements • ID necessary comprehensive plan amendments to support proposed transit programs • ID ways to enhance connectivity between public transportation and pedestrian services

State transportation planning rules are laid out in **OAR Chapter 660, Division 12 Transportation Planning:** ⁽¹⁹⁾

Preparation and Coordination of Transportation System Plans (660-012-0015)

- (1) ODOT shall prepare, adopt and amend a state TSP ... The state TSP shall identify a system of transportation facilities and services adequate to meet identified state transportation needs:
 - (a) The state TSP shall include the state transportation policy plan, modal systems plans and transportation facility plans as set forth in OAR 731, Division 15;
 - (b) State transportation project plans shall be compatible with acknowledged comprehensive plans as provided for in OAR 731, Division 15. Disagreements between ODOT and affected local governments shall be resolved in the manner established in that division.
- (2) MPOs and counties shall prepare and amend regional TSPs in compliance with this division. MPOs shall prepare regional TSPs for facilities of regional significance within their jurisdiction. Counties shall prepare regional TSPs for all other areas and facilities:
 - (a) Regional TSPs shall establish a system of transportation facilities and services adequate to meet identified regional transportation needs and shall be consistent with adopted elements of the state TSP;
 - (b) Where elements of the state TSP have not been adopted, the MPO or county shall coordinate the preparation of the regional TSP with ODOT to assure that state transportation needs are accommodated;
 - (c) Regional TSPs prepared by MPOs other than metropolitan service districts shall be adopted by the counties and cities within the jurisdiction of the MPO. Metropolitan service districts shall adopt a regional TSP for areas within their jurisdiction;
 - (d) Regional TSPs prepared by counties shall be adopted by the county.
- (3) Cities and counties shall prepare, adopt and amend local TSPs for lands within their planning jurisdiction in compliance with this division:
 - (a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;
 - (b) Where the regional TSP or elements of the state TSP have not been adopted, the city or county shall coordinate the preparation of the local TSP with the regional transportation planning body and ODOT to assure that regional and state transportation needs are accommodated.
- (4) Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.
- (5) The preparation of TSPs shall be coordinated with affected state and federal agencies, local governments, special districts, and private providers of transportation services.
- (6) Mass transit, transportation, airport and port districts shall participate in the development of TSPs for those transportation facilities and services they provide. These districts shall prepare and adopt plans for transportation facilities and services they provide. Such plans shall be consistent with and adequate to carry out relevant portions of applicable regional and local TSPs. Cooperative agreements executed under ORS 197.185(2) shall include the requirement that mass transit, transportation, airport and port districts adopt a plan consistent with the requirements of this section.
- (7) Where conflicts are identified between proposed regional TSPs and acknowledged comprehensive plans, representatives of affected local governments shall meet to discuss means to resolve the conflicts. These may include:
 - (a) Changing the draft TSP to eliminate the conflicts; or
 - (b) Amending acknowledged comprehensive plan provision to eliminate the conflicts;
 - (c) For MPOs which are not metropolitan service districts, if conflicts persist between regional TSPs and acknowledged comprehensive plans after efforts to achieve compatibility, an affected local government may petition the Commission to resolve the dispute.

Elements of Transportation System Plans (660-012-0020)

- (1) *A TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.*
- (2) *The TSP shall include the following elements:*
 - (a) *A determination of transportation needs as provided in OAR 660-012-0030;*
 - (b) *A road plan for a system*
 - (c) **A public transportation plan** *which:*
 - (A) **Describes public transportation services for the transportation disadvantaged** and identifies service inadequacies;
 - (B) *Describes intercity bus and passenger rail service and identifies the location of terminals;*
 - (C) *For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses.*
 - (D) *For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at build-out. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.*
 - (d) *A bicycle and pedestrian plan for a network of bicycle and pedestrian routes...*
 - (e) *An air, rail, water and pipeline transportation plan ...*
 - (f) *For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management;*
 - (g) *A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);*
 - (h) *Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;*
 - (i) *For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.*
- (3) *Each element identified in subsections (2)(b)–(d) of this rule shall contain:*
 - (a) *An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition:*
 - (A) *The transportation capacity analysis shall include information on:*
 - (i) *The capacities of existing and committed facilities;*
 - (ii) *The degree to which those capacities have been reached or surpassed on existing facilities; and*
 - (iii) *The assumptions upon which these capacities are based.*
 - (B) *For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency;*
 - (C) *The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).*
 - (b) *A system of planned transportation facilities, services and major improvements...*
 - (c) *A description of the location of planned facilities, services and major improvements, establishing the general corridor within which the facilities, services or improvements may be sited....*
 - (d) *Identification of the provider of each transportation facility or service.*

Vermont

The demographic data are mapped according to block group in order to better visualize areas of potential need. Based on these maps, VTrans works with local providers to develop service plans and identify ways to improve service to transit-dependent populations. The GIS analysis identified areas of the State with unmet transit needs and areas with transit needs but no service. In addition, there are some basic mobility needs not being met even within the current service areas. The number of trips to meet basic mobility needs was estimated using a “target trip rate” per capita. In order to estimate need, the projected trip rates were applied to the populations in areas currently served, and then to the populations in the “expanded” service areas. An estimated one million additional trips are needed in the areas currently served by these systems and 1.4 million new trips are needed outside the areas currently served, for a total annual transit need of 5.1 million trips in Vermont. The trips include only trips needed by residents of the State to meet basic travel needs and do not include estimates of specialized targeted services, such as visitor or campus shuttles. The trip estimates also do not include the need for transportation to agency programs either currently or in the future.

COUNTY LEVEL

Snohomish County, WA

The transportation portion of the comprehensive plan for Snohomish County establishes minimum criteria for transit with regard to the level of service. ⁽²¹⁾

Table A5: Minimum Criteria for Transit Compatibility

Minimum Criteria	Urban Residential	Urban Commercial	Rural Residential	Rural Commercial
Site Related*				
Site Location	≤ ¼ mi to route	≤ ¼ mi to route	≤ ¼ mi to route	≤ ¼ mi to route
Density	4+ dwelling units /gross acre	15+ employees per gross acre	Clustering	15+ employees per gross acre
Design	Transit supportive	Transit supportive	Transit supportive	Transit supportive
Land Use	predefined	predefined	predefined	predefined
Park-n-Ride Capacity Avail.	≤ 2 mi by car or ½ mi by walk	N/A	≤ 6 mi by car	N/A
Off-Site Roadway-Related				
Bus Stop Condition	Seats & shelter	Seats & shelter	Safe & accessible	Safe & accessible
Pedestrian Walkway to Transit Stop**	For ¼ mi to stop	For ¼ mi to stop	N/A	N/A
Peak Transit Headway	≤ 2 hours	≤ 2 hours	≤ 3 hours	≤ 3 hours
Transit Load Factor (bus)	1.2 maximum	1.2 maximum	1.0 maximum	1.0 maximum

*Refers to design features of a development such as building orientation, parking location, circulation for transit vehicles and pedestrians.

**This criterion is for designated pedestrian centers; the pedestrian walkway needs to be on at least one side of the road.

LOCAL & PROVIDER LEVEL

Portland, OR

A long-range planning study for Tri-Met in Portland, Oregon used the concept of a transit orientation index (TOI). ⁽¹³⁾ A regression equation was developed to estimate ridership based on employment density, housing density, and retail employment density, which was applied to TAZs within the Portland area to estimate future ridership based on future population and employment estimates. The estimated ridership of each TAZ was then converted into a TOI score ranging from 0-9, in order to reduce the effects of potential sources of error in estimating ridership.

- Coverage:

Table A6 Service Coverage Guidelines for MBTA

Service Days	Minimum Coverage
Weekdays & Saturday	Access to transit service will be provided within ¼ mile walk to residents of areas served by bus, light rail and/or heavy rail with a population density greater than 5,000 persons per square mile
Sunday	On Sunday, this range increases to a ½ mile walk

- Span of Service: The MBTA has established Span of Service Standards that define the minimum period of time that any given service will operate. The minimum Span of Service may be extended at either end of the day, based on customer demand and in accordance with the other service standards. The standards are shown in the following table.

Table A7: Span of Service Standards for MBTA

Mode		Day	Minimum Span of Service
Bus	Local Routes	Weekday	7:00 AM – 8:30 PM
		Guideline for high density areas:	
		Saturday	8:00 AM – 6:30 PM
		Sunday	10:00 AM – 6:30 PM
	Community Routes	Weekday	10:00 AM – 4:00 PM
	Express/Commuter Routes	Weekday	7:00 AM – 6:30 PM (no service required 9AM – 4 PM)
	Key Bus Routes	Weekday	6:00 AM – Midnight
		Saturday	6:00 AM – Midnight
		Sunday	7:00 AM – Midnight

- Frequency of Service: The MBTA has established minimum frequency of service levels for each mode, by time of day. The standards are shown in the table below.

Table A8: Frequency of Service Standards for MBTA

Mode	Weekday Time Periods	Minimum Frequency
Bus		
Local/Community Rts	AM & PM Peak	30-minute headway
	All Other Periods	60-minute headway (Mid-day policy objective of 30-minute headway in high density area)
	Saturday & Sunday – all day	60-minute headway
Express/Commuter Rts	AM Peak	3 trips in peak direction
	PM Peak	3 trips in peak direction
Key Routes	AM & PM Peak	10-minute headway
	Early AM & Midday Base	15-minute headway
	Evening & Late Evening	20-minute headway
	Saturday – all day	20-minute headway
	Sunday – all day	20-minute headway

Capital District, Albany, NY

The *New Vision* plan contains specific performance measures for transportation services regarding access, accessibility, congestion, and flexibility. ⁽²³⁾ The measures that are directly related to public transportation are presented below followed by a table with the quantification of these measures for 1990, 1996, 2000 and expected values for 2015 and 2021 under current trend and with the implementation of the New Visions Plan.

- **Access:** What travel alternatives exist? Selected performance measures are:
 - % of person trips within a defined non-auto (walk, bike, transit) to auto time difference. The maximum acceptable time difference is approximately 15 minutes; up to 20 minutes for longer trips.
 - % of person trips with a travel time advantage for non-drive-alone modes (including carpools);
- **Accessibility:** How much time does travel take? The specific measure is the travel time between representative locations, including major intermodal facilities; peak vs. non-peak, by quickest mode.
- **Congestion:** What is the level of exposure to traffic congestion?
 - Daily recurring excess person-hours of delay by mode
 - Excess person hours of delay in peak hour per PMT

Table A9: Quantification of Performance Measures Based on Current Trends & New Visions Plan

Selected Core Measures		1990	1996	2000	2015 Trend	2021 Trend	2021 New Visions Full Plan
ACCESS	Percent of PM Peak Hour Trips Transit Accessible	18.60%	na	na	15.20%	na	na
	Percent of PM Peak Hour Trips With Transit Advantage	0.40%	na	na	0.33%	na	na
	Percent of PM Peak Hour Trips Accessible by Bicycle	28.9% (1995)	na	na	26.4%	na	na
ACCESSIBILITY	Travel Time between Representative Locations*	59	64	69	78	83	73
CONGESTION	Daily Recurring Excess Person Hours of Delay	6,546	16,999	26,344	34,298	52,354	22,870
	Excess Person Hours of Peak Hour Delay Per PMT	1.1	2.4	3.2	4.0	5.4	2.9

* Sample time Selkirk Yards to Saratoga Springs [min] PM Peak

Bus Route Evaluation Standards, TCRP Synthesis 10

Route Design Standards ⁽²⁴⁾

For the 1994 *TCRP Synthesis 10 - Bus Route Evaluation Standards* study, more than 100 transit agencies were surveyed to understand their use of bus route evaluation standards. The standards were classified into 5 categories: 1) Route Design Standards, 2) Schedule Design Standards (including on-time performance and maintaining headways), 3) Economic and Productivity Standards, 4) Service Delivery Standards, and 5) Passenger Comfort and Safety Standards. The table shown below corresponds to Table 4 of the TCRP report and shows by size grouping which of the criteria are used by the respondents.

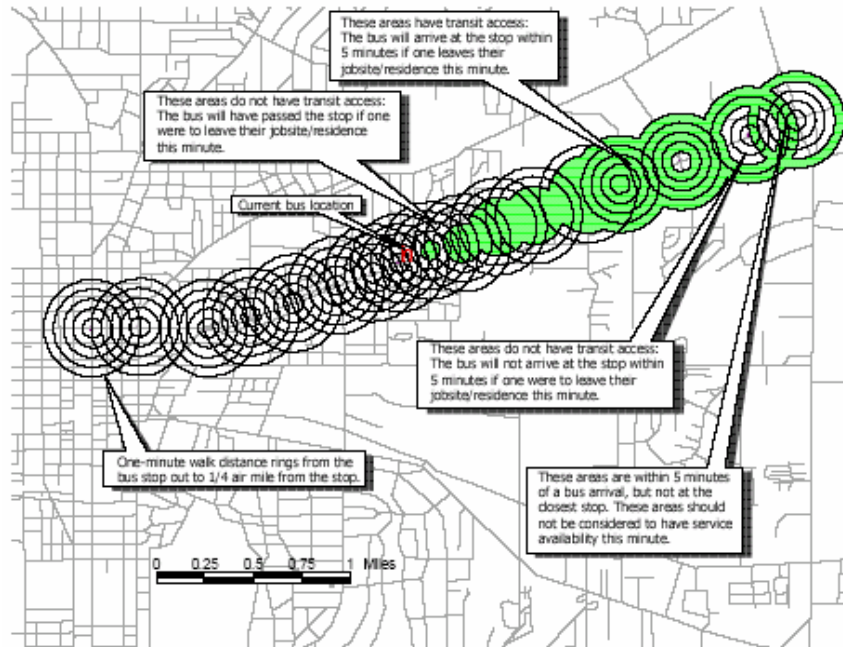
Table A10: Route Design Standards Selected Criteria by System Size

Criterion	Use of Criterion by System Size					Total
	Under 50 buses (42)	51 – 200 buses (34)	201 – 500 buses (16)	501–1,000 buses (9)	> 1,000 buses (10)	
Bus stop spacing requirements	34	31	14	9	10	98
Bus stop siting requirements	33	30	14	9	10	96
Population Density	29	25	13	6	9	82
Employment Density	25	22	13	5	8	73
Spacing between bus routes and corridor	25	23	11	7	7	73
Route directness	12	15	8	3	7	45
Limitations on the number of deviations or branches	9	12	5	5	4	35

Adapted from TCRP 1994. Note: Number in parenthesis indicates # of respondents per category.

Percent Person-Minutes Served, Florida ⁽⁶⁾

Only those areas within walking distance of transit service—defined to be within 0.4 km (0.25 mi) of a transit stop, equivalent to 5 minutes walk time at 5 km/h (3 mph)—will have any transit availability. Using a GIS, rings can be drawn around a bus stop representing one-minute walk distances, and the population and number of jobs within each ring can be calculated. Each ring only has transit availability during a short window of time before a transit vehicle arrives, assumed to be a maximum desirable wait time of 5 minutes. Each transit vehicle, therefore, has a “bubble” that extends in front of it representing the rings that have access to that vehicle if one were to leave their location during that minute and walk to the nearest transit stop. The figure below illustrates this concept, using air distances from transit stops; the FDOT software uses walk distances from stops and accounts for roadway segments that are inaccessible to pedestrians.



On a minute-by-minute basis, therefore, the population and number of jobs with transit availability can be compared to the total number of people and jobs within the analysis area. When summarized over a period of time (an hour, a day, or a week, for example), the total person-minutes served can be computed. This number can then be divided by the total number of people or jobs within the analysis area times the number of minutes during the analysis period to calculate the performance measure. The measure reflects both the spatial and temporal aspects of transit availability and, on a system-wide basis, is sensitive to population and employment density.

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Appendix F
Case Study County Selection and Analysis

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Case Study Selection Introduction

The following memo is summary of a several case studies performed to research access policies in other areas. The goal of the case study analysis was to identify counties with similar demographic, density and income characteristics to those of Long Island. A key consideration was whether other counties showed a variation in density, income levels, and population age that was similar to that found in Nassau and Suffolk Counties. The analysis concluded with a set of suggested case study counties. The counties chosen as case studies were analyzed further to identify the need and level of transit and paratransit services offered and coordination programs or policies that may be useful to Long Island providers. Table 1 provides detail on the range of values captured within Nassau and Suffolk counties and those counties from around the country that have similar values. Wherever possible, additional relevant information was provided.

Case Study Selection Process

Nassau and Suffolk Counties Data Collection

The nationwide search for case study counties began with collecting relevant data for towns and villages in Nassau and Suffolk counties. Data on population, population density (people per square mile), median income, ethnicity (Hispanic, African American, and Asian), and residents over 65 years of age were collected from the 2000 U.S. Census for the 71 cities, towns and villages in Nassau County and 46 in Suffolk County. The overview of the counties achieved from the town and village data provided substantial detail and eliminated the need for data points from localities smaller than villages, such as hamlets. Data on the population with disabilities (ages 16 and older) and students (population between 15 and 21 years of age) was collected and calculated at the county subdivision level rather than town and village. This is primarily due to the way the disability and age data is organized and retrieved from the Census; collecting such information at the town and village level would be highly time consuming and would not reveal much more detail than at the county subdivision level, which is one level more detailed than county data in the Census.

The minimum, maximum and median values were determined for each data factor in both counties. In order to establish a range of values to compare other counties to, the minimum and maximum values for Nassau and Suffolk counties combined were determined for each factor. (e.g., the minimum population density range for both counties is between 32 and 233.4 people per square mile). The range was expanded fifteen percent on either side of the range in order to improve the chances of finding counties that were similar to Nassau and Suffolk in more than one factor area (i.e. the minimum population density range used for comparison was 27.4 to 268.4). The data results for Nassau and Suffolk counties are reported in Table 1.

Case Study Counties Data Collection

The counties considered for case studies had to meet several criteria before collecting data: proximity to a large metropolitan area, strong tourism industry, and known diversity in age, income, and ethnicity. Based on these criteria, population data for 32 counties were considered. Basic elimination based on population size and density reduced the list to eight counties: Westchester County, NY (44 cities, towns and villages); Alameda County, CA (20); Santa Clara County, CA (15); San Diego County, CA (45); Broward County, FL (29); Palm Beach County, FL (37); Orange County, FL (43); and Clark County, NV (23). Barnstable County in Massachusetts, which encompasses all of Cape Cod, was added to the potential case study list after the

project's Advisory Committee recommended the addition to better represent the East End of Long Island in the case study review.

The same collection techniques used to gather data for Nassau and Suffolk counties were employed for the potential case study counties. Census 2000 data were collected at the city, town and village level for population, population density, median income, ethnicity, and residents over 65. Disabled and student population data were collected at the sub-county level. The minimum, maximum, and median values for each factor were determined for each county. These values were compared to those in the established range for Nassau and Suffolk counties, which included the 15% expansion on either side of the range.

Data on the governmental decision making structure for each case study was not collected; however, it should be considered when judging the feasibility of applying an approach from other areas to Long Island.

Case Study Selection Results

The comparison of counties to Nassau and Suffolk resulted in a number of matches for each factor considered. Out of eight possible case study counties included in the comparison, five counties had at least seven values that fell within the range from Nassau and Suffolk (considered a "match"): Westchester, San Diego, Broward, Palm Beach and Orangeⁱ counties. Many of these also had close matches that fell within close proximity of the established range (see Table 1). Santa Clara County had the fewest matches and Alameda County had no matches for the important factors of Hispanic and Asian population, and population over 65 years old. Clark County, Nevada had several matches in ethnicity, but did not align with Nassau and Suffolk counties with regards to population and population density. These counties were eliminated for case studies based on these results.

Since Nassau and Suffolk counties have such great diversity in population density, ethnic make up, income and age, finding case study counties was important in the process of determining and comparing need for and provision of access to transportation services. Based on the results of the search for potential case study counties and comparison, a list of five counties was proposed for further analysis (ranked in order of matches from the selection process; Table 1):

1. Palm Beach County, Florida
2. Orange County, Florida
3. Broward County, Florida
4. Westchester County, New York
5. San Diego County, California
6. Barnstable County, Massachusetts

The list was further reduced to three counties due to time constraints and the ability to collect adequate data. The final counties considered in the case study selection process were:

1. Broward County, Florida
2. Westchester County, New York

ⁱ Two cities in Orange County were extreme outliers and removed from calculations due to the impact they had on population and population density ranges.

3. Barnstable County, Massachusetts

The data collected for each of the final case study counties includes additional information regarding the type and level of fixed route and paratransit services that are available, and the processes used to make decisions about the level of access to transportation that is publicly provided. This data was analyzed and compared to the data from Nassau and Suffolk. The following section presents the data and final results of the case study analysis.

Table 1. Potential Case Study Counties: Search Results



Match



Close to match

# match	County	Name	Population	Density (ppl/mi ²)	Median Income	Hispanic	Black	Asian	Over 65	Disability (≥16 yrs)	Students (15-21yrs)
	NYS		18,976,457	401.9	\$43,393	15.1%	15.9%	5.5%	12.9%	32.5%	9.4%
	Nassau	Min	300.0	233.4	\$45,234	1.0%	0.0%	0.2%	8.5%	21.2%	5.9%
	Summary	Max	755,924.0	20,853.4	\$200,000	33.5%	59.1%	35.5%	35.8%	32.4%	8.6%
		Median	3,412.0	4,114.8	\$102,220	4.8%	1.1%	4.8%	15.6%	25.3%	7.9%
	Suffolk	Min	11	32	\$31,675	0.0%	0.0%	0.0%	7.0%	19.9%	4.1%
	Summary	Max	448,248	7,412	\$165,398	23.8%	23.8%	9.3%	45.5%	37.9%	13.3%
		Median	2,284	817	\$67,129	4.2%	1.5%	1.5%	15.8%	26.0%	7.5%
	Range of Values	Minimum	9.4	27.4	\$26,924	0.0%	0.0%	0.0%	6.0%	16.9%	3.5%
		Range	345.0	268.4	\$52,019	1.1%	0.0%	0.2%	9.8%	24.4%	6.8%
	Considered	Maximum	381,010.8	6,299.9	\$140,588	20.3%	20.2%	7.9%	30.4%	27.5%	7.3%
		Range	869,312.6	23,981.4	\$230,000	38.5%	67.9%	40.8%	52.3%	43.6%	15.3%
10 matches	Westchester	Min	2,189	207.3	\$41,128	2.5%	0.7%	1.0%	7.1%	9.1%	4.3%
1 close	Summary	Max	196,086	15,689	\$182,792	46.2%	59.6%	12.6%	19.2%	36.0%	9.9%
		Median	12,324	3,243	\$83,188	6.9%	2.9%	4.0%	13.3%	19.5%	7.1%
7 matches	San Diego	Min	1,501	60	\$26,708	3.6%	0.0%	0.2%	0.0%	3.8%	5.7%
1 close	Summary	Max	1,223,400	7,810	\$200,000	59.0%	14.5%	18.6%	60.4%	39.2%	33.1%
		Median	15,691	2,308	\$48,625	14.8%	1.4%	2.9%	11.1%	25.7%	10.3%
10 matches	Broward	Min	38	734	\$22,605	1.7%	0.1%	0.0%	3.8%	20.4%	5.3%
3 close	Summary	Max	152,397	8,832	\$142,581	30.2%	67.7%	4.1%	51.0%	44.9%	8.8%
		Median	34,282	4,803	\$40,050	13.1%	13.2%	1.6%	16.4%	33.5%	7.6%
11 matches	Palm Beach	Min	167	277	\$22,715	0.3%	0.0%	0.0%	6.0%	21.0%	5.1%
3 close	Summary	Max	82,103	7,706	\$200,000	30.5%	76.7%	7.8%	66.4%	44.1%	11.7%
		Median	5,273	2,669	\$50,468	7.0%	4.2%	1.1%	20.5%	30.3%	7.7%
11 matches	Orange, FL	Min	16	115	\$25,563	0.0%	0.0%	0.0%	4.3%	22.5%	9.0%
1 close	Summary	Max	185,951	7,115	\$113,819	52.8%	89.3%	9.5%	48.7%	35.4%	14.2%
		Median	5,651	2,111	\$43,651	9.5%	6.7%	2.2%	10.2%	31.3%	9.3%
12 matches	Barnstable	Min	310	99	\$29,583	0.0%	0.0%	0.0%	7.9%	20.4%	4.8%
0 close	Summary	Max	47,821	1,814	\$85,594	3.0%	7.5%	1.8%	50.3%	40.5%	9.2%
		Mean	3,646	714	\$45,316	1.0%	1.0%	0.5%	26.0%	30.9%	6.1%

Case Study Analysis

Introduction

The primary purpose for the case study analysis was to gather information from similar counties that may provide guidance regarding level of transportation access for Long Island decision makers. After performing a national search for counties similar in population, ethnic diversity, age and disability to Nassau and Suffolk, three counties were chosen for further analysis of their decision making regarding adequate access to transportation. The following section will analyze Barnstable County, Massachusetts, Broward County, Florida, and Westchester County, New York with regard to state, regional and local obligations and guidance; the level of fixed route, demand response, and human service agency transportation services; and coordination programs or policies. All of the public transportation providers in Long Island and the case study counties are subject to federal regulations that were outlined in the literature review described in Appendices D and E. These include the Title VI of the Civil Rights Act, the Americans with Disabilities Act (ADA), and Environmental Justice regulations.

For each case study county, the 2000 census data was collected for population, population density, median income and percent population for Hispanics, Asians, African Americans, students (age 15-21), persons over 65 years of age, and persons with disabilities. Data on fixed route and demand response services were gathered from the 2004 National Transit Database, including revenue hours and miles, annual ridership, ADA trips, fares, span of service and operating expenses. Additional information on demand response and human service agency transportation programs was collected by contacting the primary public transportation provider in each county. The governmental structure in each county was not a selection criterion for the case study analysis and no data regarding governmental decision making hierarchy was collected for the case study counties. Differences in governmental structure may impact the feasibility of applying transportation approaches from other areas on Long Island; however, despite these possible limitations, the examples provided by the case study counties are a valuable source of information and innovation regarding transportation decision making and represent future possibilities.

The following sections are organized according to county. Each county portion includes a description of state laws guiding access to transportation, county rules and standards that require a certain level of service, and an overview of the fixed route, demand response and human service transportation services available, including operating guidelines for the service when available. With this information, we were able to identify programs and various ways of providing adequate service and compare them to the programs and resources already in place on Long Island.

Overview of Nassau and Suffolk Counties

Defining Access and Level of Service

The obligations relevant to access to public transportation from New York state and regional bodies was provided in detail in the literature review. This section will summarize what was learned from the literature review.

State Guidance

New York provides guidance in defining adequate access to transportation in four documents:

- Statewide Transportation Plan

- Statewide Transportation Operating Assistance Program (STOA)
- NYS DOT Procedural Requirements for Pedestrian Accommodations
- Quality Communities Initiative

These documents in combination prioritize improving mobility through multimodal transportation options. The needs of older adults and persons with disabilities are specifically addressed by each document, though from different perspectives. The state transportation plan identifies the need to increase coordination and practice transportation demand management given increasing reliance on public transportation by the elderly and persons with disabilities. ⁽¹¹⁾ For the STOA program, providers must comply with program requirements in order to receive funding assistance. ^(12, 13) The procedural requirements from the NYSDOT establish standards for the pedestrian environment to improve movement to and between transportation modes. The procedures are largely based on the ADA Accessibility Guidelines (ADAAG). ⁽¹⁴⁾ Finally, the Quality Communities Initiative aims to improve the quality of life in New York communities through a series of development principles, including providing adequate transportation options to improve health, reduce congestion, and reduce dependency on cars. ⁽¹⁵⁾

Regional Guidance

The literature review revealed numerous regional plans and studies that offer guidance to Nassau and Suffolk counties regarding transportation access. These include:

- Regional Transportation Plan
- NYMTC Shared Goals
- Area-wide JARC Transportation Plan
- Environmental Justice Assessment
- Long Island Bus Study
- Long Island Transportation Plan
- Long Island Non-motorized Transportation Study

In general, the guidance from these plans and studies involves improving mobility, maintaining economic development, improving quality of life, providing access to employment opportunities, reducing congestion, and enhancing air quality. Each of these documents is summarized in Appendix D (Literature Review) of this report.

County and Provider Requirements and Standards

In addition to their own service guidelines, transportation providers also receive guidance from county level plans and studies. These documents do not put public transportation providers under obligation to meet their recommendations; rather, they serve to inform transportation decision makers of the vision and path the counties would like to follow. The literature review assessed the following local documents for direction on the level of access to transportation in the respective county, as well as the service guidelines for MTA Long Island Bus and MTA Long Island Rail Road (LIRR):

- Nassau County Office of Economic Development – Transportation Policy Recommendations
- Nassau Hub Major Investment Study (MIS)

- Joint Executive/Legislative Task Force on Transportation Issues in Suffolk County
- Long Island Bus Service Guidelines
- Long Island Rail Road Service Guidelines

Both Nassau County documents emphasized the need to continue to build upon the current transportation infrastructure, including the rail road and bus network. The MIS recommended the County define successful transit using measures such as:

- Transit ridership, which is influenced by service area population, level of service and land use
- Accessibility to transit, including service frequency and accessibility to stops, stations and vehicles
- Coordination with land use, including density and transit oriented development policies
- Promotion of economic development

The Suffolk County Task Force met to recommend solutions to achieve two goals: 1. Offer public transportation services within the financial limitations of the county government, and 2. Employ technical solutions and traffic calming methods to enable people to make trips for work, shopping and recreation while disrupting the community and environment as little as possible. The Taskforce recommendations included service improvements for Suffolk County Transit and the development of a 5-year transportation plan to address accessibility, costs, quality of life and environmental impact in the county.

The guidelines the providers establish for their own service serve are based on industry standards and local public transportation needs. Long Island Bus and LIRR each have their own set of service guidelines. A brief overview of these guidelines is provided here with greater detail in Appendix D of this report.

Long Island Bus service guidelines are used to gauge productivity, efficiency and effectiveness of the system. The standards cover vehicle loads and headways, service amenities and access. The bus headways are not to exceed 45 minutes during the weekday peak travel times, and no more than 60 minutes during off-peak times and on weekends. The span of service standard is based on the day of the week and the service type. For example, major feeder routes operate from 5 a.m. until 11 p.m. on weekdays. Other service types have shorter spans. Span of service standards for Saturday and Sunday are not based on service type; these are 7 a.m. until 10 p.m. on Saturdays and 10 a.m. until 7 p.m. on Sundays.

The LIRR service standards differ from Long Island Bus partly due to the differences between bus and rail services. LIRR has a level of service standard based on the number of customers at a station per day:

- 1,000 customers

Several other standards are based on the level of service designation including service frequency, access and location, station amenities, and maintenance and cleaning. For example, the access and location standard triggers an investigation of whether to close a station when fewer than 400 customers use it daily. Regarding service reliability, LIRR considers service to be on-time if the train arrives within five minutes and 59 seconds of its scheduled arrival time.

Overview of Transportation Services

Fixed Route and Demand Response Services

Many different public transportation providers operate fixed route services on Long Island. Nassau County services are covered by City of Long Beach Transit, MTA Long Island Bus (LI Bus), MTA Long Island Railroad (LIRR), Huntington Area Rapid Transit (HART), and the Glen Cove Loop and Commuter Buses. Suffolk County services are also offered by LI Bus and LIRR, as well as Suffolk County Transit (SCT), (which is run by the Transportation Division of the Suffolk County Department of Public Works), the Village of Patchogue, and SUNY Stony Brook. Services to New York City are operated by Greyhound (from Islip), Hampton Jitney (from Westhampton or Montauk) and Hampton Luxury Liner (from Southampton).

In general, Nassau and Suffolk counties have weekday service from early morning (the latest service begins at 7am) until mid-to-late in the evening. Suffolk and the Huntington area services end earlier than LI Bus and LIRR. A few of the LI Bus and LI Rail Road services operate a full 24 hours per day, seven days per week. All of the fixed route operators, with the exception of LIRR, Glen Cove and Patchogue, also provide demand response services. Specific details for the fixed route and demand response transportation services offered by each provider in Nassau and Suffolk counties are summarized in Table 2.

Table 2: Fixed Route and Demand Response Transportation Services in Nassau and Suffolk Counties

	City of Long Beach		MTA Long Island Bus		MTA Long Island Rail Road	Huntington Area Rapid Transit		Suffolk County DPW - Transportation Division	
Service Area (sq mi)	3,353		3,353		3,353	3,353		3,353	
2004 Service Population	17,799,861		17,799,861		17,799,861	17,799,861		17,799,861	
Mode	Demand Response	Bus	Demand Response	Bus	Commuter Rail	Demand Response	Bus	Demand Response	Bus
Service Operation	Direct Operation	Direct Operation	Direct Operation	Direct Operation	Direct Operation	Direct Operation	Direct Operation	Purchased	Purchased
Max Vehicles	2	12	96	333	1,138	9	14	64	172
Annual Operating Statistics									
Revenue Miles	8,493	186,828	2,907,043	9,917,736	58,240,340	74,461	317,599	2,609,116	7,355,512
Revenue Hours	4,528	23,482	210,635	807,469	1,991,537	5,877	22,543	158,639	378,336
Ridership	7,660	431,775	318,377	30,241,444	96,202,000	14,472	244,865	167,404	5,040,628
ADA Trips	7,660	0	318,377	0	0	10,617	0	167,404	0
Fare (reg & reduced)	not listed	\$1.50 - \$2 \$0.50 - \$0.75	\$3.50	\$2.00 - \$2.25 \$1.00 - \$2.05	\$19.00 - \$25 \$9.50 - \$10	\$1.25	\$1.25 \$0.50 - \$0.75	\$3.00	\$1.50 \$0.50
Service Hours									
Weekday	5:30 AM	5:30 AM	12:00 AM		12:00 AM	7:00 AM	6:00 AM	5:30 AM	5:15 AM
	11:30 PM	11:30 PM	12:00 AM		12:00 AM	7:00 PM	8:00 PM	9:30 PM	11:15 PM

Table 2: Fixed Route and Demand Response Transportation Services in Nassau and Suffolk Counties, continued

	City of Long Beach	MTA Long Island Bus	MTA Long Island Rail Road		Huntington Area Rapid Transit		Suffolk County DPW - Transportation Division			
Mode	Demand Response	Bus	Demand Response		Bus		Commuter Rail	Demand Response	Bus	Demand Response
Saturday	6:15 AM	6:15 AM	12:00 AM		12:00 AM		9:00 AM	9:00 AM		
	9:30 PM	9:30 PM	12:00 AM		12:00 AM		7:00 PM	7:00 PM	9:30 PM	3:00 PM
Sunday	6:15 AM	6:15 AM	12:00 AM		12:00 AM		none	none	none	7:30 AM
	9:30 PM	9:30 PM	12:00 AM		12:00 AM		none	none	none	3:00 PM
Operating Expenses	\$170,750	\$1,536,750	\$9,837,419	\$96,040,888	\$897,919,758		\$745,024	\$2,440,862	\$7,076,953	\$28,855,097
Total Modes	\$1,707,500		\$105,878,307		\$897,919,758		\$3,185,886		\$35,932,050	
Funding Sources										
Fare	23%	\$394,013	36%	\$38,040,176	45%	\$410,802,424	6%	\$198,354	20%	\$7,049,565
Local	49%	\$843,686	18%	\$18,784,289	25%	\$223,243,402	78%	\$2,488,532	39%	\$13,940,463
State	26%	\$439,801	42%	\$44,310,046	27%	\$244,097,685	15%	\$475,000	29%	\$10,240,827
Federal	0%	\$0	3%	\$3,386,308	0%	\$0	0%	\$0	11%	\$3,800,964

Source: 2004 National Transit Database; Fare is based on a one-way trip.

There are also many other organizations that provide demand response services. These are listed in Table 3; additional service details on the demand response services are in Section 2 of this report.

Table 3: Demand Response Transportation Providers on Long Island

Service Provider	Type of Service*	Service Area	Eligibility
Nassau County			
Able-Ride Operated by Long Island Bus	Curb-to-Curb ADA	Nassau County	ADA
HART ADA operated by Huntington Area Regional Transit	Curb-to-Curb ADA	Town of Huntington	ADA
Long Beach Transit	Curb-to-Curb ADA	Long Beach, Lido, and Point Lookout	ADA
Medicaid Nassau County DSS	Curb-to-Curb	N/A	Medicaid
Nassau County Dept of Mental Health, Retardation, and Developmental Disabilities			
Long Beach Senior Center			
Oyster Bay Senior Community Service Center	Door-to-door demand responsive service for medical and shopping trips only for seniors	Oyster Bay area	
Glen Cove Senior Community Service Center	Food shopping for seniors	City of Glen Cove	

Service Provider	Type of Service*	Service Area	Eligibility
Town of North Hempstead Senior Citizen Division	Food shopping for seniors	Town of North Hempstead	
Suffolk County			
SCAT operated by Suffolk County Transit	Curb-to-curb demand responsive for ADA	Suffolk County	ADA
Town of Brookhaven jitney service	Demand responsive trips for disabled residents/seniors	Town of Brookhaven	
Town of Islip Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Islip	
Commack Senior Center Y-JCC	Home-to-center service for members	Based on membership	Member
Town of Southampton Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Southampton	Homebound persons and non-driving residents of Southampton
Town of Babylon Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Babylon	
Town of Smithtown Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Smithtown	
Town of Riverhead Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Riverhead	

Service Provider	Type of Service*	Service Area	Eligibility
Town of East Hampton Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of East Hampton	
Town of Shelter Island Dept. of Human Services, Senior Citizens Affairs Council	Demand responsive trips for disabled residents/seniors	Town of Shelter Island	
Town of Southampton Dept of Human Services			
Southold Senior Transportation Program operated by the Southold Senior Citizen Division	Demand responsive trips for disabled residents/seniors	Town of Southold	
Disabled Veterans Volunteer Transportation Network	Demand responsive medical trips for veterans	Suffolk County	Disabled veterans

Human Service Agency Transportation

Human service agencies and other non-profit organizations on Long Island also provide demand response service for clients. Agencies with transportation programs include state or county agencies and private non-profit organizations. Nassau and Suffolk County Departments of Social Services both offer transportation to Medicaid recipients. The rides are limited to medical appointments in or within a set distance of from the county boundaries. The Nassau Department of Mental Health, Retardation, and Developmental Disabilities also provides rides to its clients. One volunteer organization provides veterans with rides to and from hospital visits. The rides are limited to destinations within Suffolk County. A number of faith-based organizations, medical facilities and organizations, and residential facilities also operate vehicles or administer volunteer driver programs to provide rides for certain types of individuals or trip purposes.

Barnstable County, Massachusetts

Defining Access and Level of Service

State Guidance

In 2005, a new statute went into effect that reorganized the Executive Office of Transportation (EOT). The new legislation established a regional transit authority council, chaired by the Secretary of Transportation; a state-level Office of Transportation Planning; and a 13-member Transportation Finance Commission, charged with developing a long-range transportation financial plan for the state and identifying opportunities

for reducing costs and strengthening financial policies and procedures. Additionally, EOT is directed to develop a set of performance measures for the RTAs, as well as other transportation agencies that are now part of the office. The new performance measurement system requires each RTA to:

- Establish goals
- Measure program performance against the goals
- Report progress on efficiencies gained regarding transportation design, construction, service and decision making

The annual reports are submitted to the House and Senate Committees on Ways and Means, and the Joint Committee on Transportation. The Massachusetts Regional Transit Authorities (MARTA) hired a consultant to create the strategic plan, which is discussed in detail in the following section on regional guidance.

The Transportation Reform Legislation also establishes the EOT Coordination Steering Committee (CSC). The Secretary of the Executive Office of Transportation appoints the members of the CSC, which currently includes representatives from EOT, Massachusetts Highway Department, Massachusetts Aeronautics Commission, and the Registry of Motor Vehicles. The CSC is responsible for overseeing compliance with major aspects of the reform bill.

The reform legislation created a Transportation Finance Commission (TFC) with the task to develop “a comprehensive, multi-modal, long-range, transportation finance plan” for the state. The comprehensive plan has been delayed and is due to be released in late 2006. The TFC was one of several items in legislation addressing finance for the RTAs; however, these are not relevant to the discussion of defining adequate access.

At the same time as the reorganization, the EOT developed its required statewide transportation plan. The 2005 document, *A Framework for Thinking – A Plan For Action*, provides a good deal of general guidance regarding access to transportation for the Commonwealth. Among the eight guiding principles for transportation decision making in the state, two are related to adequate access to transportation:

Principle 5: “In order to improve our quality of life and provide economic opportunities, the transportation system of the Commonwealth of Massachusetts shall provide increased mobility for people and goods.” (pg 13)

Principle 8: “The transportation system of the Commonwealth of Massachusetts shall be designed, built and operated so that it serves the needs of all of its users and is accessible and convenient for patrons of diverse physical and economic status.” (pg 14) Relevant action items for Principle 8 include:

- Incorporating environmental justice in funding and project development decisions
- Seeking better coordination on the delivery of services for transportation disadvantaged
- Developing better ways to communicate with riders
- Increasing opportunities for suburban and rural public transportation

The discussion of the guiding principles also touches specifically on the ADA, student and senior needs, and environmental justice issues.

Massachusetts has instituted a set of transportation evaluation criteria to be used as part of the project development process. The process works through the first steps of initially identifying transportation needs to inclusion of a solution project in the Metropolitan Planning Organization (MPO) Transportation

Improvement Program (TIP). Each of the ten MPOs prepares a TIP every five years in a process that involves representatives from the relevant MPO, Executive Office of Transportation (EOT), MassHighway, Regional Planning Authority, RTA, and local elected officials. The projects included in the TIP are reviewed based on the transportation evaluation criteria that are organized by funding source and project purpose: preservation, improvement, and expansion. Three evaluation criteria categories are relevant to public transit and the level of transportation from the RTAs:

- Transit preservation – RTA facilities and rolling stock
- Transit service improvements – system wide improvements, RTA intermodal centers and facilities
- Transit service expansion – RTA rolling stock, intermodal centers and facilities

Additionally, there are “other effects” criteria that include service quality and environmental justice. The RTAs are also reviewed through the performance measurement system, a separate process by EOT, which analyzes each system’s capital spending, operating expenses, revenue, ridership, services, fares, etc. This review and a needs analysis help to ensure each RTA is operating efficiently.

Beyond the transportation evaluation process and RTA reviews, several other initiatives by the state aim to improve transportation access and quality. The *Communities First* policy requires consideration of the natural and built environment, use of context sensitive design, and public involvement in the decision making process. *Communities First* led to the revision of the Highway Design Manual to be more context sensitive. The revised document, *Project Development and Design Guidebook*, is under development by a consultant as of April 2006. Once completed, this document will have a major influence on transportation projects and planning in Massachusetts.

Regarding human service agency transportation and coordination, Massachusetts has consolidated and coordinated its human service transportation under the new Human Service Transportation Office. The details of the new arrangement were described in the previous section on public transportation options in Barnstable County.

Currently, the Massachusetts legislature is considering legislation that establishes a dedicated fund for Regional Transit Authorities that may be used to “restore and enhance” service in RTA districts. Up to \$90 million in funding for the proposed dedicated fund would come from “excess registry fees” collected by the State. The bill, Senate 2315, also changes the funding scheme from retroactive reimbursement of expenses to current financing. This part of the bill improves fiscal accountability by requiring the RTAs to submit a certified statement to the state identifying the relevant expenses.

Regional Guidance

CCRTA is one of 15 regional transit authorities that serve cities and towns in Massachusetts outside of the service area of the MBTA. RTAs were authorized in 1974 with the passage of Chapter 161B of the Massachusetts General Laws (MGL). RTAs manage public transportation for their member communities. As required by Chapter 161B, all services administered by the RTAs are provided through contracts with local and regional bus companies, local non-profit organizations, and national transportation management firms.

A city or town’s membership in an RTA is voluntary. CCRTA’s member communities, whose representatives compose the Authority’s Advisory Board, determine the type and level of service they wish to receive, and contribute a portion of the cost of that service. Chapter 161B defines a “net cost of service”, which is the deficit remaining after the application of federal funds, fares, and other revenues to service expenses. The net cost of service is shared between member communities and the State, with a state

share of between 50% and 75% and the local contribution covering the remainder of the net cost of service. While service decisions are made by the RTA and its cities and towns, the availability of the state share through EOT is a significant factor in planning decisions.

A set of service guidelines was developed for the Massachusetts RTAs by Urbitrans as part of a needs analysis study, entitled *Five-Year Transit Service and Capital Plan for the Massachusetts Regional Transit Authorities*. These service standards were established based on development type (urban, suburban, rural, seasonal and paratransit) with special attention to service span and frequency (see Table 4). CCRTA has accepted these standards as a target for service provided adequate funding is found to implement them.

Table 4: Service Standards from 2005 5-year Regional Transit Plan

Standard		Urban	Rural	Seasonal
Frequency	Peak period	15/30	30/60	30/60
	Base period	30/60	30/60	30/60
Span	Weekdays	6am – 10pm	6am – 9pm	6am – 12am peak
				6am – 10pm base
	Saturday	7am – 8pm	7am – 6pm	6am – 12am peak
				7am – 8pm base
	Sunday	7am – 8pm	Local option	8am – 10pm peak
				Local option – base

The needs assessment was also based on development type and included four parts: estimate of total transit need, methodology to meet unmet needs, identify transit service goals (both for individual RTAs and statewide), and forecast operating costs and capital needs. Industry service performance standards similar to those identified in Appendix A were used as a basis for the needs assessment. Over the last several years, restrictions on funding for the RTAs have resulted in service reductions and fare increases which have contributed to the unmet needs identified in the 5-year regional transit plan. Decisions regarding adequate level of service and access have hinged on financial shortfalls rather than community need. In forecasting the operating costs and capital necessary to help the RTAs fill unmet needs, the needs assessment presents a clear picture of financial need among the regions. Senate Bill 2315, mentioned above, may help to alleviate some of the financial burdens facing CCRTA and other RTAs in Massachusetts and assist them in meeting their regional unmet public transportation needs.

In addition to the 5-year regional transit plan, the CCRTA receives guidance from policy documents and plans from the Cape Cod Commission (CCC) and the Cape Cod Metropolitan Planning Organization (CCMPO). The CCC released its revised *Regional Policy Plan* (RPP) in 2003. The goals and objectives of the RPP were incorporated in to the CCMPO's *Regional Transportation Plan* (RTP) that was published around the same time. The RPP provides a vision of the quality of life on Cape Cod for the future. The RPP covers transportation issues as part of a larger development problem on the Cape and lays out the

ways in which transportation affects land use, economic development and communities. The transportation goals and performance standards identified in the RPP include:

- Goal 4.1.1: "Maintain an acceptable level of safety on all roads on Cape Cod for all users."
 - Minimum Performance Standards (partial list)
 - Maintaining safety for pedestrians, bicyclists and motorists
 - Requiring analysis of new development/redevelopment on safety
 - All development/redevelopment must meet federal access management requirements
- Goal 4.1.2: "To reduce and/or offset the expected increase in motor vehicle trips on public roadways and to reduce dependency on automobiles."
 - Minimum Performance Standards (partial list)
 - "To improve mobility for non-drivers, those preferring not to drive and those without access to a car. To serve both residents and visitors better, transit-service frequency should be increased and the routes expanded."
- Goal 4.1.3: "To maintain travel times and Level of Service on regional roads and intersections..."

In the RTP, the CCMPO addresses the need to conform with the RPP and identifies key conditions and trends impacting transportation on Cape Cod. Among these trends, an increasing population of people over 65 years of age and a majority of households considered low income are highly relevant to this current study and how transportation is pursued in Barnstable County. Developing the RTP included a lengthy public process that created and reviewed a set of transportation goals and objectives for the county. The goals and strategies identified during public process that are relevant to this project include:

- "Developing alternatives to the automobile by
 - Encouraging coordination between youth transportation, school bus service needs and public transportation
 - Encouraging coordination and communication between HST providers
 - Encouraging the use of fixed route transit rather than paratransit where possible
 - Coordinate public transportation services between regions and providers"
- "Advancing environmental justice by
 - Supporting self-sufficiency by providing specialized transportation services
 - Supporting programs that address the transportation needs of low income and transit dependent populations."

The RTP also includes a list of key transit plan recommendations. Regarding public transportation, these recommendations include: providing Sunday service year-round, adding new buses on regional routes, and adding bus stops signs. The RTP recommends a central dispatching program to coordinate HST on Cape Cod, Martha's Vineyard and Nantucket.

Overall, CCRTA seems to base its decision making on access to transportation on the local needs analysis done in the 5-year transit plan and the regional policy and transportation plans. These plans already take

in to account state level policies and recommendations regarding transportation and development, which makes following those guidance documents that much simpler.

Overview of Transportation Services

Fixed Route and Demand Response Services

Fixed route and demand response transportation in Barnstable County is operated by the Cape Cod Regional Transit Authority (CCRTA). CCRTA’s member communities include all of the 15 towns that make up Barnstable County. The area is a popular retirement location and includes a high percentage of seniors and persons with disabilities among its residents. Cape Cod is also one of the state’s biggest tourist attractions. The population of Barnstable County more than doubles to more than 500,000 in the summer months. Given the size and development patterns of the area, most visitors arrive and travel locally by automobile. Summer traffic has become a growing problem and a major concern to local residents and businesses in recent years. Much of the area’s economy is based on business that caters to summer visitors. Barnstable County contains a large number of households with relatively low incomes, primarily households with earnings generated from the seasonal service and construction industries, and seniors with fixed incomes. All of these factors present transportation challenges for CCRTA.

In 2004, the CCRTA provided 209,621 and 291,986 passenger trips for demand response and fixed route service respectively. The amount of service available in Barnstable County varies according to the tourism season (see Table 5). During the off-peak season, the service operates fewer hours with generally longer headways than during the peak season when there is an influx of visitors to the Cape.

Table 5: CCRTA Off-Peak and Peak Service Frequency and Span

Season	Headways	Weekdays	Saturday	Sunday
Off-Peak	45-90 min	5:50 a.m.- 7:30 p.m.	5:50 a.m.- 7:30 p.m.	None
Peak	20-120 min	5:55 a.m.–11:25 p.m.	7:20 a.m. –12:15a.m.	7:00 a.m. – 9:00 p.m.

The one-way fare for fixed route service ranges from \$1.00 to \$3.50 for the general public and \$0.50 to \$1.75 for senior citizens, children ages 6-17, persons with disabilities and Medicaid recipients, which are generally similar to those in the other case study counties. The majority of funding for CCRTA comes from the Massachusetts state transit operating assistance program and the required local match; federal support provides 16% of funding; and fares only cover 10% of the costs. Full details on the fixed route and demand response services in Barnstable are provided in Table 6.

Table 6: Fixed Route and Demand Response Transportation Services in Barnstable County

Name	Cape Cod Regional Transit Authority	
Service Area (sq mi)	286	
2004 Service Population	243,667	
Mode	Demand Response	Bus
Service Operation	Purchased	Purchased
Max Vehicles	61	20
Annual Operating Statistics		
Revenue Miles	2,362,203	744,941
Revenue Hours	136,860	45,915
Ridership	209,621	291,986
ADA Trips	56,460	0
Fare (reg and reduced)	not listed	\$1 - \$3.50 \$0.50 - \$1.75
Service Hours		
Weekday	5:50 AM	5:50 AM
	7:30 PM	7:30 PM
Saturday	5:50 AM	5:50 AM
	7:30 PM	7:30 PM
Sunday	none	none
	none	none
Operating Expenses	\$6,498,801	\$1,562,794
Total Modes	\$8,061,595	
Funding Sources		
Fare	10%	\$810,452
Local	12%	\$940,829
State	62%	\$4,976,291
Federal	16%	\$1,260,913

Source: 2004 National Transit Database and Massachusetts Association of Regional Transit Authorities; Fare is based on a one-way trip.

Human Service Agency Transportation

Human service transportation in Cape Cod is organized based upon a state level coordination effort. In 2000, Massachusetts consolidated the purchase and management of transportation services for clients of a number of human service agencies in a new state-level Human Service Transportation Office (HST). Goals for the consolidated transportation office included:

- Making more capacity available by increasing the number of vehicles used to provide client transportation and improving efficiency
- Standardizing reporting and data collection requirements, and strengthening contract monitoring efforts
- Improving cost-effectiveness by standardizing requirements placed on transportation providers and sharing fixed costs among participating agencies

Three agencies within the Executive Office of Health and Human Services (EOHHS) formed the nucleus of the new office, with other agencies serving as advisory partners. The three primary partners, which spend approximately \$100 million per year on transportation for their clients, are the state's Medical Assistance (Medicaid), Public Health, and Mental Retardation agencies. Transportation managers from the three agencies jointly drew new district boundaries, standardized procurement procedures, and began to contract with regional transit authorities (RTAs) for the brokerage of coordinated client transportation services in 2001.

The most significant achievements of the HST Office to date have been the development of a common set of requirements and standards for the RTAs that provide human service client transportation, the implementation of a statewide procurement process for the three agencies, and the establishment of a structure which should result in substantial cost savings. Factors that will contribute to cost savings include:

- Grouping of trips, for which providers are reimbursed at a lower, share-ride rate
- Use of the most appropriate, least cost mode of transportation by the brokers
- Improved monitoring of service providers to eliminate fraudulent billing
- Increased competition among service providers

Some cost savings have already been achieved. The Montachusett Regional Transit Authority (MART) provides EOHHS brokerage services in about 60% of the state. In the Lowell area, MART has been able to reduce expenditures on Medicaid transportation from \$1.3 million per year to \$400,000 by grouping trips and more carefully monitoring vendors. Similarly, through cost control measures and increases in shared rides, MART has been able to bring the cost per trip from \$15 to \$12 in the Springfield area.

The Cape Cod RTA (CCRTA) is the human service transportation broker in Barnstable County. In 2005, CCRTA provided 136,050 one-way trips for MassHealth (45,393 trips), the Department of Mental Retardation (90,612), and the Department of Public Health (45). CCRTA operates slightly different from other RTAs in Massachusetts. It attempts to provide rides as efficiently as possible by shifting as many clients as possible from private carriers to CCRTA's own contracted transportation providers that operate the general local service. There were 9 providers operating approximately 90 vehicles under contract for transportation services in 2005 that were paid using a flat rate per trip or per route. CCRTA has also begun using technologies such as Global Positioning System (GPS), Automated Vehicle Location (AVL), and Mobile Data Terminals to improve service efficiency and customer information access. CCRTA developed

the *Transit Resource Guide* that gives contact information for several organizations that provide transportation to various clients, including sixteen Council on Aging transportation services, ten human service agencies and six private providers (see Table 7).

Table 7: Council on Aging and Human Service Agency Demand Response Providers in Barnstable County

Organization, Town, Telephone Number	Description of Service	Eligibility	Hours	Fares	Destination Area Served
Barnstable COA	Medical appointments and shopping	Seniors 59+, and Disabled	8:00am to 4:30pm Monday to Friday	Donations Accepted	All seven Villagers of the Town of Barnstable
Bourne COA	Medical appointments and shopping	Seniors 60+, and Disabled	8:30am to 3:30pm Monday to Friday	Donations Accepted	Bourne, Wareham, Falmouth, Plymouth. Hyannis or Dartmouth 1x a month
Brewster COA	Minivan with volunteer drivers to/from medical appointments.	Brewster residents, Seniors 59+, and Disabled	8:00am to 4:00pm Monday to Friday	Donations Minibus 3- mo. pass fee or pay per trip	Brewster & Orleans area Remainder of Cape Cod and limited off-Cape
Chatham COA	Daily Congregate lunches, groceries, local errands	Chatham residents, Seniors 60+, Disabled, and Visitors	8:00am to 4:00pm Monday to Friday	Donations Accepted	Chatham area, Orleans 1x a week, Hyannis 1x a month
Dennis COA (508) 385-5067	Medical appts, shopping T, Th, F. Patriots Sq., Outlets 1-2x/month	Seniors 59+, and disabled	9:00am to 4:00pm Monday to Friday	Donation Appreciated, Hyannis \$2.50	Dennis, Yarmouth, Hyannis
Eastham COA (508) 255-6164	Door to door by Van to medical appts, grocery shopping Wednesdays AM & PM in Orleans	Seniors 59+	8:00am to 4:00pm Monday to Friday	Ranges from \$8-45 depending on destination	Eastham, Orleans, Hyannis, Upper Cape, Plymouth, Weymouth, Boston

Organization, Town, Telephone Number	Description of Service	Eligibility	Hours	Fares	Destination Area Served
Falmouth COA (508) 540-0196	Medical appointments and shopping	Falmouth seniors 59+ and disabled	8:00am to 4:00pm Monday to Friday	No charge	Local to Falmouth only
Harwich COA	To and from medical appts. Must be ambulatory	Harwich seniors, 59+	9:00am to 3:00pm Monday to Friday	No charge, Donations Accepted	Local area, and to Hyannis
Harwich COA	Grocery shopping, W, Th, F Hyannis Mall 2x a month, Stop & Shop 1xmonth	Harwich seniors, 59+	10:00am to Noon Monday to Friday	No charge, Donations Accepted	Primarily Harwich and to Hyannis Mall
Mashpee COA	Local medical appt., errands shopping,	Mashpee Seniors 60+, and Special Needs	8:30am to 4:30pm Monday to Friday	No Charge Donations Accepted	Mashpee, Falmouth, Hyannis, Wareham, Sandwich
Orleans COA	Door to door to medical appointments, hospitals & clinics, Meals on Wheels	Seniors, 60+ Orleans residents All ages with special needs	8:30am to 4:30pm Monday to Friday	Suggested Donations Accepted	Orleans, Hyannis, Other areas by volunteers, Boston medical appointments
Provincetown COA	Med. Appt. & Shopping: Mon. to Hyannis; Tue. To Orleans; Wed. in town, A&P, Senior Center dining/library; Thurs. Sen. Swim, Med. Appt. at Wellfleet OCH; Fri. COA luncheon program	Primarily Seniors 60+, some younger Special Needs P-town Residents and Visitors	8.:00 am to 5:00pm Monday to Friday	Donations Suggested for Round Trip: Mon. \$5 to Hyannis, Tues. \$4 to Orleans, Wed. \$1 in-town, Thurs. \$2 Eastham	Provincetown area to Lower/Outer Cape and Hyannis on a regular schedule
Sandwich COA	Medical appt., Shopping Tues. Thurs. & Fri., Mall trips 2x a month	Sandwich Seniors 60+	8:30am to 4:30pm Monday-Friday	Donations Appreciated	Sandwich to local area, Falmouth, Hyannis, Plymouth
Truro COA	Door-to-Door for Medical Appts, Groceries, Needs for Daily Living	Truro/ Wellfleet Elders & Any Age for Medical Appts.	As Needed Monday to Friday Full Days	Donations Truro Fees Wellfleet	As Far As Boston, Providence & Cape-Wide

Organization, Town, Telephone Number	Description of Service	Eligibility	Hours	Fares	Destination Area Served
Wellfleet COA	Limited number of volunteers transport seniors to medical appt. In town	Seniors 60+	8:00am to 4:00pm Monday to Friday	No charge	Local, Lower and Mid-Cape Destinations
Yarmouth COA	Mon: food shopping S&S, A&P, Wed: Cape Cod Mall	Yarmouth Seniors 60+	9:00am to 3:00pm Monday and Wednesday	Donations Appreciated	Yarmouth, Dennis, & Hyannis
Community Connections Inc. Specialized Transportation	Door to Door Round Trip Service for Any Purpose	All Residents	24 Hours a Day, 7 Days a Week	Rates Quoted on Request	On and off Cape
American Cancer Society Office	Volunteer Drivers to Cape Cod Hospital Radiation Center, the Cancer Center at Plymouth, Boston Hospitals	Cancer Patients of All Ages	8:00am to 5:00pm Monday to Friday	No charge, Donations accepted	Cape Cod and the Islands
Habilitation Assistance Corp. Access Express Office	Door to Door Round Trip Service for Any Purpose	All Residents	7:30am to 5:00pm -F Some Weekends	Rates Quoted on Request	On and off Cape
Chatham Fish	Door to door, Volunteer drivers; Medical appts only	Chatham seniors 60+	9:30am to 4:30pm Monday to Saturday	No charge	Chatham area and to Hyannis
Nauset Region Fish	Door to door, Volunteer drivers; Medical appt., clinics, hosp.; shopping, errands, bus depot	Primarily seniors, 60+ All ages special needs on a limited bases	8:00am to 6:00pm Monday to Friday	No charge Donations accepted	Lower Cape Wellfleet to Brewster, area residents locally and to Hyannis
Housing Assistance Corp. Hyannis	Transportation for homeless welfare customers to view available housing	Welfare customers, all ages	8:00am to 5:00pm seven days a week	No charge	Cape Cod and the Islands. All of MA, RI, NH, VT, and ME
Disabled American Veterans 198 South St. Hyannis Chapter House	Transportation for Veterans or their dependents to VA facilities for medical/dental appt.	Veterans of all ages	8:30am to 5:00pm Monday to Friday	Donations requested	Cape Cod & Islands to VA facilities in Brockton, New Bedford, W. Roxbury & Providence, RI

Organization, Town, Telephone Number	Description of Service	Eligibility	Hours	Fares	Destination Area Served
Interfaith Council for the Homeless Orleans	Transportation for those who are homeless and the risk of being homeless	Residents of Harwich and Provincetown only	9:00am to 3:00pm Monday to Friday	No charge	Harwich, Chatham, Orleans, Brewster, Eastham, Wellfleet, Provincetown
Helping Our Woman Inc.	Transportation for medical appointments	Eastham to Provincetown woman with chronic illness	Office hours 10:00am to 5:00pm M-Th	No charge	Falmouth, Hyannis, Orleans, Boston
Provincetown AIDS Support Group	Transportation for medical appointments to the Boston Hospitals	Members of Provincetown AIDS Support Group and Helping Our Woman	Monday to Friday 7:00am to 5:00pm No Holiday Service	No charge	Cape Cod to Boston Area Hospitals and Medical Treatment Facilities

Broward County, Florida

Defining Access and Level of Service

State Guidance

Florida has a significant amount of guidance regarding transportation service for its transportation disadvantaged population, which includes Floridians who are elderly, persons with disabilities, low-income, or otherwise dependent on public transportation. The state established a state-level policy board, the Commission for the Transportation Disadvantaged (CTD), to:

- Establish statewide transportation objectives
- Assist local municipalities in developing coordinated transportation systems
- Establish standards regarding the coordination, operation, costs and use of transportation services for the transportation disadvantaged. ⁽⁴⁰⁾ (Office of Program Policy Analysis and Government Accountability 1997)

Under the Florida law that created the CTD, local coordinating boards in each county must designate a Community Transportation Coordinator or CTC. The CTC is responsible for providing coordinated transportation services to eligible individuals in its service area by operating service directly, contracting with providers, or a combination of both. The CTD works with the CTC in each service area in the state to ensure transportation services for the transportation disadvantaged. Each service area in the state is required to annually develop a Transportation Disadvantaged Service Plan (TDSP) with assistance from the CTD. The TDSP must be compatible with local comprehensive plans, regional policy plans, transit development plans, CTD 5 year/20 year plan, long-range transportation plans and transportation improvement plans. The CTD provides detailed instructions on the minimum level of information required

in a TDSP, which must be approved by the local coordinating board. The CTC is also required to submit a Medicaid service delivery plan, and monthly budget reports to the Agency for Health Care Administration.

State and local agencies that receive federal and state transportation funding for the transportation disadvantaged are required to participate in the coordinated systems. These agencies include Medicaid, the Department of Transportation, Elder Affairs, the Department of Education, the Department of Labor, the Department of Health, and Veterans Affairs.

As part of its responsibilities, the CTD distributes funds from the Transportation Disadvantaged Trust Fund (TDTF).ⁱⁱ The fund supports CTD administrative costs and two grant programs: Non-Sponsored Trip/Equipment Grants and Transportation Disadvantaged Planning Related Grants. These grants provide funding for individuals who are not sponsored by another agency, such as Medicaid, and unable to transport themselves or purchase transportation due to age, disability, income, or other reasons. These are formula grants based on need and performance measures.

County Requirements and Standards

Broward County has a number of planning documents that work consistently together to provide guidance on public transportation services. The plans include: Broward County Comprehensive Plan, Strategic Regional Policy Plan, Broward County Transit Development Plan, Commission for the Transportation Disadvantaged 5 year/20 year Plan, Broward County MPO Long-Range 2025 Transportation Plan, Broward County Area-wide Job Access Reverse Commute Plan, and the Transportation Disadvantaged Service Plan. The Long Range Transportation Plan provides general standards for transit services and pedestrian mobility, including maximum headways, service span and sidewalks. The primary focus here is on the Transportation Disadvantaged Service Plan (TDSP).

In Broward County, the Board of County Commissioners acts as the CTC and collaborates with the Broward County Metropolitan Planning Organization to produce an annual TDSP. The TDSP includes long-range goals and objectives, a one-year service plan, quality assurance information, and cost allocation information. Each TDSP includes a service analysis that forecasts the transportation disadvantaged population of the county and their location, and identifies their needs and the barriers to coordination. The service plan identifies operational elements, such as time and days of operation, various transportation programs for TD clients, and inter-county transportation arrangements. The service plan also identifies ways clients can access services. These include a listing of available transportation services from Broward County Transit (BCT), directories from the Agency on Aging, Developmental Services, and Henderson Mental Health, and a paratransit rider guide from BCT. The service plan encompasses many of the factors necessary to establish what the county and state expect in terms of transportation coverage and service for transportation disadvantaged persons. The TDSP also includes service standards for the transportation providers. These standards are developed in accordance with the ADA, and state and local criteria. Additionally, the service standards mention trips to Miami for various purposes offered twice per week and prohibit schedule prioritization based on the purpose of the trip.

ⁱⁱ The TDTF is funded by a dedicated 15% of the State Transit Block Grant. The State Transit Block Grant is funded by the Florida Transportation Trust Fund, of which, a minimum of 15% is required to be spent on public transportation. Public transportation here includes aviation, rail, etc; transit receives approximately 4% of the FTTF public transportation funds. (TCRP 2003)

Overview of Transportation Services

Fixed Route and Demand Response Services

Broward County Transit (BCT) and Tri-County Commuter Rail operate fixed route transit services in Broward County. Tri-County offers commuter rail and bus services while BCT provides bus and demand response services. The service area has a total population density of 4407.7 people per square mile; however, the density of census block groups ranges from 734 to 8,832 people per square mile. As with Barnstable County, the range in density is much less severe than on Long Island, but still poses a challenge in providing transportation for the County. In 2004, BCT provided 1,326,355 and 38,256,614 passenger trips for demand response and fixed route service respectively. BCT offers weekday and Saturday bus and demand response services from early morning (the latest service begins at 6:30 a.m.) until 1:30 a.m. On Sundays, the services run from around 7:00 a.m. until around 10:30 p.m. The one-way fare for BCT fixed route service is \$1.00 for the general public and \$0.50 for senior citizens, children ages 6-17, persons with disabilities and Medicare recipients. BCT fixed route fares are the lowest of all the case study counties. The demand response fare on BCT is \$2.00, which is in line with those of the other case counties. The majority of funding for BCT comes from local sources; fares cover 18% of the costs. Additional service operations details for BCT, as well as Tri-County Commuter Rail are provided in Table 8.

Human Service Agency Transportation

Broward County Transit (BCT) is the primary paratransit provider for Broward County. These trips include ADA complementary paratransit trips and trips purchased by local programs, such as Easter Seals, Vocational Rehab and Medicaid. In total BCT provides 260,000 non-ADA trips for 45 human service agencies in the county (BC Transit Development Plan 2005). Between ADA and human service transportation, BCT provides approximately 3,200 trips per day for 18,600 eligible clients using four contractors with around 280 vehicles.

Other

Community Bus is another service option offered by Broward County Transit. This service operates wheelchair accessible mini buses in 20 municipalities on 49 routes within the county. The addition of municipal service reduces neighborhood trip travel times and provides connections to fixed route bus service. Many of the community buses provide senior citizens with transportation to senior centers, medical facilities, and shopping destinations.

Table 8: Fixed Route and Demand Response Transportation Services in Broward County

Name	Broward County Mass Transit Division		Tri-County Commuter Rail	
Service Area (sq mi)	1,116		1,116	
2004 Service Population	4,919,036		4,919,036	
Mode	Demand Response	Bus	Commuter Rail	Bus
Service Operation	Purchased	Direct Operation	Purchased	Purchased
Max Vehicles	275	278	20	6
Annual Operating Statistics				
Revenue Miles	10,411,502	15,314,924	2,048,688	42,567
Revenue Hours	882,172	1,140,565	56,523	2,365
Ridership	1,326,355	38,256,614	2,821,329	39,888
ADA Trips	1,326,355	0	0	0
Fare (reg and reduced)	\$2	\$1 \$0.50	\$2 - \$5.50 \$1 - \$2.75	zone based
Service Hours				
Weekday	4:50 AM	5:50 AM	4:13 AM	5:23 AM
	1:30 AM	1:30 AM	9:55 PM	8:39 PM
Saturday	4:48 AM	6:30 AM	6:40 AM	7:57 AM
	1:30 AM	1:30 AM	11:28 PM	11:27 PM
Sunday	6:45 AM	7:35 AM	6:40 AM	7:57 AM
	10:20 PM	10:30 PM	9:55 PM	9:27 PM
Operating Expenses	\$24,172,407	\$82,717,619	\$25,244,842	\$177,940
Total Modes	\$106,890,026		\$25,422,782	
Funding Sources				
Fare	18%	\$19,958,151	21%	\$6,408,061
Local	60%	\$65,536,065	20%	\$6,067,246
State	15%	\$16,525,851	26%	\$7,993,513
Federal	6%	\$6,231,200	31%	\$9,419,723

Source: 2004 National Transit Database; Fare is based on a one-way trip.

Westchester County, New York

Defining Access and Level of Service

The obligations relevant to access to public transportation from New York state and regional bodies was provided in detail in the literature review and summarized in the section on Nassau and Suffolk County.

State and Regional Guidance

Since Westchester County also falls under NYMTC guidance, many of the same state and regional guidance documents relevant to Suffolk and Nassau apply to Westchester. These include the *New York State Transportation Plan*, *State Operating Assistance Program*, *NYSDOT procedural requirements for pedestrian accommodations*, *the Quality Communities Initiative*, *Regional Transportation Plan*, NYMTC shared goals, *Area-wide JARC Plan*, and *Environmental Assessment*. These programs and guidance documents were thoroughly reviewed and described in Appendix A of the *Access to Transportation on Long Island Technical Report*.

County Requirements and Standards

The Westchester County Planning Board developed a comprehensive development plan, *Patterns for Westchester*, which includes policies and strategies for development that involve public transportation. The policies related to public transportation deal with directing development toward centers where public transportation can be provided efficiently, making transit improvements that will help reduce congestion, and providing alternative transportation options for workers, consumers and residents to improve air quality and reduce auto dependency (Westchester County Planning Board 2005). Transportation issues in Westchester County revolve around five concerns:

1. Clean Air Act Amendment compliance
2. Access to development centers and corridors
3. Transit service expansion
4. Transportation infrastructure maintenance
5. Congestion relief

The strategies to address these issues are detailed in the plan. County and municipal strategies most relevant to public transportation include:

- Enhance Bee-Line schedules and routes that serve urban centers
- Improve connections between modes
- Establish shuttle, feeder and dial-a-ride services
- Create public transportation links to the airport from key areas
- "Emphasize pedestrian and transit design as key considerations in local referrals for development in centers and developed corridors"
- Provide shelter at bus and transit stations

- Provide residents with information on transportation service available, including call-in and customized services (Westchester County Planning Board, 2005)

While the comprehensive plan uses broad brush strokes to establish transportation goals and strategies, the Westchester County Department of Transportation (WCDOT) developed a set of fixed route service policies and analytical framework for performance review of all services provided through the WCDOT. Existing services and new service adjustments are reviewed using an analytical framework that includes investment and service criteria (see Table 9). The analytical framework is based on WCDOT's *Performance Report* and the service categories it defines. The criteria in the analytical framework are intended to be used in decision making efforts regarding the county's transportation services.

Table 9: Transportation Service Policies from Westchester County DOT

INVESTMENT CRITERIA	
Does the adjustment and route or service unit it impacts meet or maintain the minimum guidelines for investment?	
Return on Investment	Uses score-based system; standard score of the service change for ridership and revenue should be greater than or equal to the standard score for variable cost
Efficiency and Effectiveness	Based on performance ratios; service should not fall more than one standard deviation below the relevant category average unless it was already below or approaching this level prior to the change
SERVICE CRITERIA	
Does the adjustment and the route or service unit which it impacts meet or improve minimum guidelines for level of service?	
Vehicle Headway	<ul style="list-style-type: none"> • Peak travel time: not more than 30 minutes • Off-peak travel time: not more than 60 minutes • Deviation from standards only allowed when development densities make these standards impractical
Hours of Service	<p><u>Local Services:</u> Maintain a minimum span from</p> <p style="padding-left: 40px;">6am to 8pm weekdays</p> <p style="padding-left: 40px;">8am to 8 pm Saturdays</p> <p style="padding-left: 40px;">10am to 6pm on Sundays</p> <p><u>Core Services:</u> Maintain a minimum span from</p> <p style="padding-left: 40px;">6am to 10pm weekdays</p> <p style="padding-left: 40px;">8am to 8pm on Saturdays</p> <p><u>Feeder Services:</u> Maintain a minimum span from</p> <p style="padding-left: 40px;">6am to 9am morning peak</p> <p style="padding-left: 40px;">4pm to 7:30pm evening peak</p> <p><u>Express Services:</u> Maintain a minimum service covering</p> <p style="padding-left: 40px;">8:00, 8:30 and 9:00 am</p> <p style="padding-left: 40px;">4:00, 4:30, and 5:00 pm</p>

Table 9: Transportation Service Policies from Westchester County DOT, continued

SERVICE CRITERIA	
Passenger Loading	<p><u>Local Services:</u></p> <p>Peak period – not more than 120% of seated capacity</p> <p>Off-peak period – not more than seating capacity</p> <p><u>Express and Feeder Services:</u> should not exceed seating capacity at any time</p>
On-Time Performance	<ul style="list-style-type: none"> • Early arrivals no allowed at any time • Late arrivals should not exceed five minutes • Lateness tolerated so long as not chronic or due to weather, emergency detours or construction.

Performance reviews are conducted annually based on the service policies in Table 8 and should account for land use trends and long range transportation plans. These reviews are intended to facilitate setting investment priorities and recommend service adjustments. The Office for the Disabled developed a separate set of service criteria for the paratransit service. These criteria are listed in Table 10.

Table 10: Bee-Line Paratransit Service Criteria

Arrival Time	<p>Vehicle will arrive up to 15 minute before or after the scheduled pick-up time.</p> <p>If early, the vehicle will wait until 5 minutes past the scheduled pick-up time.</p>
Waiting Time	<p>The vehicle will wait five minutes after the scheduled pick-up time.</p>
Trip Denials	<p>There are no trip denials allowed for Bee-Line paratransit services.</p>
Vehicle Safety	<p>Must follow FTA safety guidelines.</p> <p>Vehicles replaced approximately every four years (15 replacements per year) to maintain highest safety standards.</p>

Source: Evan Latainer, Westchester County Office for the Disabled

Overview of Transportation Services

Fixed Route and Demand Response Services

The Westchester County Department of Transportation and MTA Metro-North Railroad operate fixed route transit services in Westchester County. The Westchester County DOT operates the “Bee Line,” which runs bus and demand response services for the county. Metro-North offers commuter rail and some bus services primarily to New York City. The population density by census block group ranges from 207.3 to

15,689 people per square mile – the most similar of all case study counties to Nassau and Suffolk. Westchester faces the same challenges as Nassau and Suffolk in providing public transportation to an area with extreme density changes.

The Bee Line service is purchased by the DOT from three fixed route providers and two demand response providers. In 2004, the Bee Line provided 27,864,065 passenger trips for fixed route service. The Bee Line offers weekday and Saturday bus services from around 6:00 a.m. until around 11 p.m. On Sundays, the services run from around 7:00 a.m. until around 10:30 p.m. The one-way fare for the Bee Line fixed route service ranges from \$1.75 to \$7.00 for the general public and \$0.85 to \$3.50 for senior citizens, children ages 6-17, persons with disabilities and Medicare recipients. Paratransit service in Westchester County is run through the Office of the Disabled using Bee Line vehicles. In 2005, paratransit provided approximately 212,000 rides during the same operating hours as the Bee Line's fixed route service. All of these rides were ADA complementary paratransit trips. The demand response fare on the Bee Line is \$3.00. Approximately 60% of the paratransit service serves seniors with medical problems going to medical trips and workshops. The funding for Westchester County DOT is relatively well balanced between fare recovery (34%), local (39%) and state sources (25%). comes from local sources. Full details on the fixed route and demand response services in Westchester County are provided in Table 11.

Table 11: Fixed Route and Demand Response Transportation Services in Westchester

Name	Westchester County Dept of Transportation		MTA Metro-North Railroad	
Service Area (sq mi)	3,353		3,353	
2004 Service Population	17,799,861		17,799,861	
Mode	Demand Response	Bus	Commuter Rail	Bus
Service Operation	Purchased	Purchased	Direct Operation	Purchased
Max Vehicles	60	13	930	7
Annual Operating Statistics				
Revenue Miles	1,941,421	8,287,278	49,720,555	92,029
Revenue Hours	125,229	722,464	1,401,176	17,857
Ridership	-212,000	27,864,065	72,255,844	277,674
ADA Trips	-212,000	0	0	0
Fare (reg and reduced)	\$3.00	\$1.75 - \$7 \$0.85 - \$3.50	zone based \$12.59 - \$18 \$6.18 - \$6.50	

Table 11: Fixed Route and Demand Response Transportation Services in Westchester, continued

Service Hours				
Mode	Demand Response	Bus	Commuter Rail	Bus
Weekday	6:00 AM	5:30 AM	5:53 AM	5:37 AM
	11:00 PM	10:59 PM	9:35 PM	12:00 AM
Saturday*	6:00 AM	6:45 AM	5:31 AM	none
	11:00 PM	10:18 PM	3:37 PM	none
Sunday	8:00 AM	9:48 AM	5:31 AM	none
	8:00 PM	7:22 PM	3:37 PM	none
Operating Expenses	\$6,386,593	\$115,186,421	\$674,706,945	\$960,721
Total Modes	\$121,573,014		\$677,825,503	
Funding Sources				
Fare	34%	\$41,494,375	\$403,361,946	58%
Local	39%	\$47,991,607	\$58,028,740	8%
State	25%	\$29,789,999	\$208,500,894	30%
Federal	2%	\$2,297,033	\$0	0%

Source: BEE-LINE 2004 Annual Report (Westchester), DR ridership from Westchester County Office of the Disabled, 2004 National Transit Database (Metro-North); Fare is based on a one-way trip.

*Some service on selected routes after 11pm.

The Bee-Line paratransit service is managed through the Westchester County Office for the Disabled. All of the rides are curb-to-curb ADA complementary service. The ridership is approximately 60% seniors with medical difficulties going to medical appointments, workshops or getting general transportation.

Human Service Agency Transportation

Bee-Line Paratransit and Medicaid seem to provide most of the non-fixed route transportation for transit dependent people in Westchester County. However, there are a number of agencies and organizations that also provide rides for seniors and persons with disabilities. The Westchester County Office for the Disabled and the Department for Senior Programs and Services (DSPS) each provide a resource guide for their clientele that includes information on transportation services and options. The Office for the Disabled

lists contact information for ten organizations that offer private transportation for persons with disabilities.ⁱⁱⁱ The DSPTS guide lists 15 town sponsored transportation services as well as those offered by other organizations (i.e. nutrition sites, adult day care centers, escorted shopping).

Case Study Analysis Summary and Conclusions

It is difficult to find counties that are similar in every way possible in order to compare public transportation services. This case study analysis focused on three counties selected on the basis of some similar characteristics to Suffolk and Nassau Counties, including population density, median income, ethnic populations, and numbers of older adults and persons with disabilities. Government structure for transportation and related decision making was not a selection criterion, but may play a role in how feasible it would be to implement examples from other areas on Long Island. Despite the challenges of identifying case study counties, the analysis was completed and several common practices, interesting ideas and creative solutions for transportation decision making were found.

In general, each case study county has some form of state and regional level of guidance to inform its local transportation decision making process regarding level of access to transportation. The regional guidance is usually in the form of a transportation or comprehensive plan that outlines the goals and objectives for public transportation in the county. Each case study county also has a set of standards for public transportation service. These vary in terms of detail, but include standards for minimum level of service or service standard requirements that address both investments and transportation services. Related to service standards, each case study county uses an annual performance review to evaluate the services being provided and identify where adjustments may need to be made. All of the case study counties identified a growing elderly population as a key concern for the future of public transportation demand and a reason for better planning and coordination within the public transportation system.

Human service transportation is handled similarly across the case study counties. The primary fixed route public transportation provider is also the primary provider of human service transportation. The providers either offer the majority of the rides themselves or manage/coordinate the system of human service transportation. CCRTA in Barnstable County serves as the coordinator for a brokerage system of human service transportation. Each of the case study counties also serves as an information clearinghouse by providing its residents with a guide to demand response services.

Concern over funding for public transportation is another common thread for all of the case study counties and Nassau and Suffolk Counties. Most public transportation providers do not seem to have enough funding to provide the level and quality of service they would prefer. Fortunately for Broward County, Florida has a source of dedicated funding for public transportation that serves transportation disadvantaged populations. Massachusetts providers are in the process of arguing for dedicated funding as well.

Many of the issues and concerns identified by the customers and providers of public transportation on Long Island are similar to those faced by other areas. By understanding these issues and finding ways others have addressed them, Long Island can create a transit system that provides the most adequate access to transportation possible.

ⁱⁱⁱ The transportation services may have certain restrictions, such as being a client or living in a certain town.

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Appendix G
Walkability and Bikeability Checklists

Walkability Checklist

How walkable is your community?

Take a walk with a child and decide for yourselves.

Everyone benefits from walking. These benefits include: improved fitness, cleaner air, reduced risks of certain health problems, and a greater sense of community. But walking needs to be safe and easy. Take a walk with your child and use this checklist to decide if your neighborhood is a friendly place to walk. Take heart if you find problems, there are ways you can make things better.

Getting started:

First, you'll need to pick a place to walk, like the route to school, a friend's house or just somewhere fun to go.

The second step involves the checklist. Read over the checklist before you go, and as you walk, note the locations of things you would like to change. At the end of your walk, give each question a rating. Then add up the numbers to see how you rated your walk overall.

After you've rated your walk and identified any problem areas, the next step is to figure out what you can do to improve your community's score. You'll find both immediate answers and long-term solutions under "Improving Your Community's Score..." on the third page.



Take a walk and use this checklist to rate your neighborhood's walkability.

How walkable is your community?

Location of walk _____



1. Did you have room to walk?

- Yes Some problems:
- Sidewalks or paths started and stopped
 - Sidewalks were broken or cracked
 - Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
 - No sidewalks, paths, or shoulders
 - Too much traffic
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6 _____

2. Was it easy to cross streets?

- Yes Some problems:
- Road was too wide
 - Traffic signals made us wait too long or did not give us enough time to cross
 - Needed striped crosswalks or traffic signals
 - Parked cars blocked our view of traffic
 - Trees or plants blocked our view of traffic
 - Needed curb ramps or ramps needed repair
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6 _____

3. Did drivers behave well?

- Yes Some problems: Drivers...
- Backed out of driveways without looking
 - Did not yield to people crossing the street
 - Turned into people crossing the street
 - Drove too fast
 - Sped up to make it through traffic lights or drove through traffic lights?
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6 _____

4. Was it easy to follow safety rules?

Could you and your child...

- Yes No Cross at crosswalks or where you could see and be seen by drivers?
- Yes No Stop and look left, right and then left again before crossing streets?
- Yes No Walk on sidewalks or shoulders facing traffic where there were no sidewalks?
- Yes No Cross with the light?
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6 _____

5. Was your walk pleasant?

- Yes Some unpleasant things:
- Needed more grass, flowers, or trees
 - Scary dogs
 - Scary people
 - Not well lighted
 - Dirty, lots of litter or trash
 - Dirty air due to automobile exhaust
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6 _____

How does your neighborhood stack up? Add up your ratings and decide.

- | | | |
|----------|-------|---|
| 1. _____ | 26-30 | Celebrate! You have a great neighborhood for walking. |
| 2. _____ | 21-25 | Celebrate a little. Your neighborhood is pretty good. |
| 3. _____ | 16-20 | Okay, but it needs work. |
| 4. _____ | 11-15 | It needs lots of work. You deserve better than that. |
| 5. _____ | 5-10 | It's a disaster for walking! |

Total _____

Now that you've identified the problems,
go to the next page to find out how to fix them.

Now that you know the problems,
you can find the answers.

Improving your community's score...



1. Did you have room to walk?

Sidewalks or paths started and stopped
Sidewalks broken or cracked
Sidewalks blocked
No sidewalks, paths or shoulders
Too much traffic

What you and your child
can do immediately

- pick another route for now
- tell local traffic engineering or public works department about specific problems and provide a copy of the checklist

What you and your community
can do with more time

- speak up at board meetings
- write or petition city for walkways and gather neighborhood signatures
- make media aware of problem
- work with a local transportation engineer to develop a plan for a safe walking route

2. Was it easy to cross streets?

Road too wide
Traffic signals made us wait too long or did not give us enough time to cross
Crosswalks/traffic signals needed
View of traffic blocked by parked cars, trees, or plants
Needed curb ramps or ramps needed repair

- pick another route for now
- share problems and checklist with local traffic engineering or public works department
- trim your trees or bushes that block the street and ask your neighbors to do the same
- leave nice notes on problem cars asking owners not to park there

- push for crosswalks/signals/ parking changes/curb ramps at city meetings
- report to traffic engineer where parked cars are safety hazards
- report illegally parked cars to the police
- request that the public works department trim trees or plants
- make media aware of problem

3. Did drivers behave well?

Backed without looking
Did not yield
Turned into walkways
Drove too fast
Sped up to make traffic lights or drove through red lights

- pick another route for now
- set an example: slow down and be considerate of others
- encourage your neighbors to do the same
- report unsafe driving to the police

- petition for more enforcement
- request protected turns
- ask city planners and traffic engineers for traffic calming ideas
- ask schools about getting crossing guards at key locations
- organize a neighborhood speed watch program

4. Could you follow safety rules?

Cross at crosswalks or where you could see and be seen
Stop and look left, right, left before crossing
Walk on sidewalks or shoulders facing traffic
Cross with the light

- educate yourself and your child about safe walking
- organize parents in your neighborhood to walk children to school

- encourage schools to teach walking safely
- help schools start safe walking programs
- encourage corporate support for flex schedules so parents can walk children to school

5. Was your walk pleasant?

Needs grass, flowers, trees
Scary dogs
Scary people
Not well lit
Dirty, litter
Lots of traffic



- point out areas to avoid to your child; agree on safe routes
- ask neighbors to keep dogs leashed or fenced
- report scary dogs to the animal control department
- report scary people to the police
- report lighting needs to the police or appropriate public works department
- take a walk with a trash bag
- plant trees, flowers in your yard
- select alternative route with less traffic

- request increased police enforcement
- start a crime watch program in your neighborhood
- organize a community clean-up day
- sponsor a neighborhood beautification or tree-planting day
- begin an adopt-a-street program
- initiate support to provide routes with less traffic to schools in your community (reduced traffic during am and pm school commute times)

A Quick Health Check

Could not go as far or as fast as we wanted
Were tired, short of breath or had sore feet or muscles
Was the sun really hot?
Was it hot and hazy?

- start with short walks and work up to 30 minutes of walking most days
- invite a friend or child along
- walk along shaded routes where possible
- use sunscreen of SPF 15 or higher, wear a hat and sunglasses
- try not to walk during the hottest time of day

- get media to do a story about the health benefits of walking
- call parks and recreation department about community walks
- encourage corporate support for employee walking programs
- plant shade trees along routes
- have a sun safety seminar for kids
- have kids learn about unhealthy ozone days and the Air Quality Index (AQI)

Need some guidance?
These resources might help...

Great Resources

WALKING INFORMATION

Pedestrian and Bicycle Information Center (PBIC)
UNC Highway Safety Research Center
730 Airport Road, Suite 300
Campus Box 3430
Chapel Hill, NC
27599-3430
Phone: (919) 962-2202
www.pedbikeinfo.org
www.walkinginfo.org

National Center for
Safe Routes to School
730 Martin Luther
King, Jr. Blvd., Suite 300
Campus Box 3430
Chapel Hill, NC 27599-3430
Toll-free 1-866-610-SRTS
www.saferoutesinfo.org

National Center for Bicycling and Walking
Campaign to Make America Walkable
1506 21st Street, NW
Suite 200
Washington, DC 20036
Phone: (800) 760-NBPC
www.bikefed.org

WALK TO SCHOOL DAY WEB SITES

USA event: www.walktoschool-usa.org
International: www.iwalktoschool.org

STREET DESIGN AND TRAFFIC CALMING

Federal Highway Administration
Pedestrian and Bicycle Safety Research Program
HSR - 20
6300 Georgetown Pike
McLean, VA 22101
www.fhwa.dot.gov/environment/bikeped/index.htm

Institute of Transportation Engineers
www.ite.org

Surface Transportation Policy Project
www.transact.org

Transportation for Livable Communities
www.tlcnetwork.org

WALKING COALITIONS

America Walks
P.O. Box 29103
Portland, Oregon 97210
Phone: (503) 222-1077
www.americawalks.org



PEDESTRIAN SAFETY

National Highway Traffic Safety Administration
Traffic Safety Programs
400 Seventh Street, SW
Washington, DC 20590
Phone: (202) 662-0600
www.nhtsa.dot.gov/people/injury/pedbimot/ped

SAFE KIDS Worldwide
1301 Pennsylvania Ave. NW
Suite 1000
Washington, DC 20004
Phone: (202) 662-0600
Fax: (202) 393-2072
www.safekids.org

WALKING AND HEALTH

US Environmental Protection Agency
Office of Children's Health Protection (MC 1107A)
Washington, DC 20460
Phone: 202-564-2188
Fax: 202-564-2733
www.epa.gov/children/
www.epa.gov/airnow/
www.epa.gov/air/urbanair/ozone/what.html
www.epa.gov/sunwise/uvindex.html
www.epa.gov/otaq/transp/comchoic/ccweb.htm

President's Task Force on Environmental Health Risks and
Safety Risks to Children
www.childrenshealth.gov

Centers for Disease Control and Prevention
Division of Nutrition and Physical Activity
Phone: (888) 232-4674
www.cdc.gov/nccdphp/dnpa/readysset
www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm

Prevention Magazine
33 East Minor Street
Emmaus, PA 18098
www.itsallaboutprevention.com

Shape Up America!
6707 Democracy Boulevard
Suite 306
Bethesda, MD 20817
www.shapeup.org

ACCESSIBLE SIDEWALKS

US Access Board
1331 F Street, NW
Suite 1000
Washington, DC 20004-1111
Phone: (800) 872-2253;
(800) 993-2822 (TTY)
www.access-board.gov



Bikeability Checklist

How bikeable is your community?

Riding a bike is fun!

Bicycling is a great way to get around and to get your daily dose of physical activity. It's good for the environment, and it can save you money. No wonder many communities are encouraging people to ride their bikes more often!



Can you get to where you want to go by bike?

Some communities are more bikeable than others: how does yours rate? Read over the questions in this checklist and then take a ride in your community, perhaps to the local shops, to visit a friend, or even to work. See if you can get where you want to go by bicycle, even if you are just riding around the neighborhood to get some exercise.



At the end of your ride, answer each question and, based on your opinion, circle an overall rating for each question. You can also note any problems you encountered by checking the appropriate box(es). Be sure to make a careful note of any specific locations that need improvement.



Add up the numbers to see how you rated your ride. Then, turn to the pages that show you how to begin to improve those areas where you gave your community a low score.

Before you ride, make sure your bike is in good working order, put on a helmet, and be sure you can manage the ride or route you've chosen. Enjoy the ride!

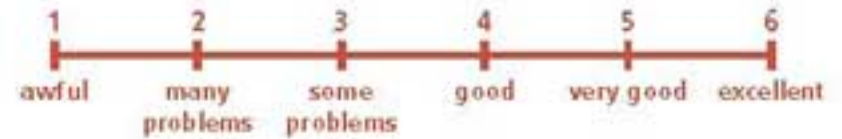
Go for a ride and use this checklist to rate your neighborhood's bikeability.



How bikeable is your community?

Location of bike ride (be specific):

Rating Scale:



1. Did you have a place to bicycle safely?

a) On the road, sharing the road with motor vehicles?

- Yes Some problems (please note locations):
- No space for bicyclists to ride
 - Bicycle lane or paved shoulder disappeared
 - Heavy and/or fast-moving traffic
 - Too many trucks or buses
 - No space for bicyclists on bridges or in tunnels
 - Poorly lighted roadways
- Other problems: _____

b) On an off-road path or trail, where motor vehicles were not allowed?

- Yes Some problems:
- Path ended abruptly
 - Path didn't go where I wanted to go
 - Path intersected with roads that were difficult to cross
 - Path was crowded
 - Path was unsafe because of sharp turns or dangerous downhill
 - Path was uncomfortable because of too many hills
 - Path was poorly lighted
- Other problems: _____

2. How was the surface that you rode on?

- Good Some problems, the road or path had:
- Potholes
 - Cracked or broken pavement
 - Debris (e.g. broken glass, sand, gravel, etc.)
 - Dangerous drain grates, utility covers, or metal plates
 - Uneven surface or gaps
 - Slippery surfaces when wet (e.g. bridge decks, construction plates, road markings)
 - Bumpy or angled railroad tracks
 - Rumble strips
- Other problems: _____

Overall Surface Rating: (circle one)

1 2 3 4 5 6

3. How were the intersections you rode through?

- Good Some problems:
- Had to wait too long to cross intersection
 - Couldn't see crossing traffic
 - Signal didn't give me enough time to cross the road
 - Signal didn't change for a bicycle
 - Unsure where or how to ride through intersection
- Other problems: _____

Overall Intersection Rating: (circle one)

1 2 3 4 5 6

Overall "Safe Place To Ride" Rating: (circle one)

1 2 3 4 5 6

Continue the checklist on the next page...

4. Did drivers behave well?

- Yes Some problems, drivers:
- Drove too fast
 - Passed me too close
 - Did not signal
 - Harassed me
 - Cut me off
 - Ran red lights or stop sign
- Other problems: _____

Overall Driver Rating: (circle one)

1 2 3 4 5 6

5. Was it easy for you to use your bike?

- Yes Some problems:
- No maps, signs, or road markings to help me find my way
 - No safe or secure place to leave my bicycle at my destination
 - No way to take my bicycle with me on the bus or train
 - Scary dogs
 - Hard to find a direct route I liked
 - Route was too hilly
- Other problems: _____

Overall Ease of Use Rating: (circle one)

1 2 3 4 5 6

6. What did you do to make your ride safer?

Your behavior contributes to the bikeability of your community. Check all that apply:

- Wore a bicycle helmet
- Obeyed traffic signal and signs
- Rode in a straight line (didn't weave)
- Signaled my turns
- Rode with (not against) traffic
- Used lights, if riding at night
- Wore reflective and/or retroreflective materials and bright clothing
- Was courteous to other travelers (motorist, skaters, pedestrians, etc.)

7. Tell us a little about yourself.

In good weather months, about how many days a month do you ride your bike?

- Never
- Occasionally (one or two)
- Frequently (5-10)
- Most (more than 15)
- Every day

Which of these phrases best describes you?

- An advanced, confident rider who is comfortable riding in most traffic situations
- An intermediate rider who is not really comfortable riding in most traffic situations
- A beginner rider who prefers to stick to the bike path or trail

How does your community rate? Add up your ratings and decide.

(Questions 6 and 7 do not contribute to your community's score)

1. _____	26-30	Celebrate! You live in a bicycle-friendly community.
2. _____	21-25	Your community is pretty good, but there's always room for improvement.
3. _____	16-20	Conditions for riding are okay, but not ideal. Plenty of opportunity for improvements.
4. _____	11-15	Conditions are poor and you deserve better than this! Call the mayor and the newspaper right away.
5. _____	5-10	Oh dear. Consider wearing body armor and Christmas tree lights before venturing out again.
Total _____		

Did you find something that needs to be changed?

On the next page, you'll find suggestions for improving the bikeability of your community based on the problems you identified. Take a look at both the short- and long-term solutions and commit to seeing at least one of each through to the end. If you don't, then who will?

During your bike ride, how did you feel physically? Could you go as far or as fast as you wanted to? Were you short of breath, tired, or were your muscles sore? The next page also has some suggestions to improve the enjoyment of your ride.

Bicycling, whether for transportation or recreation, is a great way to get 30 minutes of physical activity into your day. Riding, just like any other activity, should be something you enjoy doing. The more you enjoy it, the more likely you'll stick with it. Choose routes that match your skill level and physical activities. If a route is too long or hilly, find a new one. Start slowly and work up to your potential.

Now that you know the problems,
you can find the answers.

Improving your community's score...



1. Did you have a place to bicycle safely?

a) On the road?

No space for bicyclists to ride (e.g. no bike lane or shoulder; narrow lanes)
Bicycle lane or paved shoulder disappeared
Heavy and/or fast-moving traffic
Too many trucks or buses
No space for bicyclists on bridges or in tunnels
Poorly lighted roadways

What you can do immediately

- pick another route for now
- tell local transportation engineers or public works department about specific problems; provide a copy of your checklist
- find a class to boost your confidence about riding in traffic

What you and your community can do with more time

- participate in local planning meetings
- encourage your community to adopt a plan to improve conditions, including a network of bike lanes on major roads
- ask your public works department to consider "Share the Road" signs at specific locations
- ask your state department of transportation to include paved shoulders on all their rural highways
- establish or join a local bicycle advocacy group

b) On an off-road path or trail?

Path ended abruptly
Path didn't go where I wanted to go
Path intersected with roads that were difficult to cross
Path was crowded
Path was unsafe because of sharp turns or dangerous downhill
Path was uncomfortable because of too many hills
Path was poorly lighted

- slow down and take care when using the path
- find an on-street route
- use the path at less crowded times
- tell the trail manager or agency about specific problems

- ask the trail manager or agency to improve directional and warning signs
- petition your local transportation agency to improve path/roadway crossings
- ask for more trails in your community
- establish or join a "Friends of the Trail" advocacy group

2. How was the surface you rode on?

Potholes
Cracked or broken pavement
Debris (e.g. broken glass, sand, gravel, etc.)
Dangerous drain grates, utility covers, or metal plates
Uneven surface or gaps
Slippery surfaces when wet (e.g. bridge decks, construction plates, road markings)
Bumpy or angled railroad tracks
Rumble strips

- report problems immediately to public works department or appropriate agency
- keep your eye on the road/path
- pick another route until the problem is fixed (and check to see that the problems are fixed)
- organize a community effort to clean up the path

- work with your public works and parks department to develop a pothole or hazard report card or online link to warn the agency of potential hazards
- ask your public works department to gradually replace all dangerous drainage grates with more bicycle-friendly designs, and improve railroad crossings so cyclists can cross them at 90 degrees
- petition your state DOT to adopt a bicycle-friendly rumble-strip policy

3. How were the intersections you rode through?

Had to wait too long to cross intersection
Couldn't see crossing traffic
Signal didn't give me enough time to cross the road
The signal didn't change for a bicycle
Unsure where or how to ride through intersection

- pick another route for now
- tell local transportation engineers or public works department about specific problems
- take a class to improve your riding confidence and skills

- ask the public works department to look at the timing of the specific traffic signals
- ask the public works department to install loop-detectors that detect bicyclists
- suggest improvements to sightlines that include cutting back vegetation; building out the path crossing; and moving parked cars that obstruct your view
- organize community-wide, on-bike training on how to safely ride through intersections

Improving your community's score...

(continued)

What you can do immediately

What you and your community can do with more time

4. Did drivers behave well?

Drivers:
Drove too fast
Passed me too close
Did not signal
Harassed me
Cut me off
Ran red lights or stop signs

- report unsafe drivers to the police
- set an example by riding responsibly; obey traffic laws; don't antagonize drivers
- always expect the unexpected
- work with your community to raise awareness to share the road

- ask the police department to enforce speed limits and safe driving
- encourage your department of motor vehicles to include "Share the Road" messages in driver tests and correspondence with drivers
- ask city planners and traffic engineers for traffic calming ideas
- encourage your community to use cameras to catch speeders and red light runners

5. Was it easy for you to use your bike?

No maps, signs, or road markings to help me find my way
No safe or secure place to leave my bicycle at my destination
No way to take my bicycle with me on the bus or train
Scary dogs
Hard to find a direct route I liked
Route was too hilly

- plan your route ahead of time
- find somewhere close by to lock your bike; never leave it unlocked
- report scary dogs to the animal control department
- learn to use all of your gears!

- ask your community to publish a local bike map
- ask your public works department to install bike parking racks at key destinations; work with them to identify locations
- petition your transit agency to install bike racks on all their buses
- plan your local route network to minimize the impact of steep hills
- establish or join a bicycle user group (BUG) at your workplace

6. What did you do to make your ride safer?

Wore a bicycle helmet
Obeyed traffic signals and signs
Rode in a straight line (didn't weave)
Signaled my turns
Rode with (not against) traffic
Used lights, if riding at night
Wore reflective materials and bright clothing
Was courteous to other travelers (motorists, skaters, pedestrians, etc.)

- go to your local bike shop and buy a helmet; get lights and reflectors if you are expecting to ride at night
- always follow the rules of the road and set a good example
- take a class to improve your riding skills and knowledge

- ask the police to enforce bicycle laws
- encourage your school or youth agencies to teach bicycle safety (on-bike)
- start or join a local bicycle club
- become a bicycle safety instructor



Need some guidance?
These resources might help...

Great Resources

STREET DESIGN AND BICYCLE FACILITIES

American Association of State Highway and Transportation Officials

444 North Capitol Street, NW, Suite 249
Washington, DC 20001
Tel: (202) 624-5800
www.aashto.org

Institute of Transportation Engineers
1099 14th Street, NW, Suite 300 West
Washington, DC 20005-3438
Tel: (202) 289-0222
www.ite.org

Association of Pedestrian and Bicycle Professionals (APBP)
P.O. Box 23576
Washington, DC 20026
Tel: (202) 366-4071
www.apbp.org

Pedestrian and Bicycle Information Center (PBIC)
UNC Highway Safety Research Center
730 Airport Road, Suite 300
Campus Box 3430
Chapel Hill, NC 27599-3430
Tel: (919) 962-2202
www.pedbikeinfo.org
www.bicyclinginfo.org

Federal Highway Administration
400 Seventh Street, SW
Washington, DC 20590
www.fhwa.dot.gov/environment/bikeped/index.htm

EDUCATION AND SAFETY

National Highway Traffic Safety Administration
400 Seventh Street, SW
Washington, D.C. 20590
Tel: (202) 366-1739
www.nhtsa.dot.gov/people/injury/pedbimot/bike/

League of American Bicyclists
1612 K Street NW, Suite 401
Washington, DC 20006
Tel: (202) 822-1333
www.bikeleague.org

National Bicycle Safety Network
www.cdc.gov/ncipc/bike/default.htm

National Safe Kids Campaign
1301 Pennsylvania Ave NW, Suite 1000
Washington, DC 20004
Tel: (202) 662-0600
www.safekids.org

PATHS AND TRAILS

Rails to Trails Conservancy
1100 17th Street SW, 10th Floor
Washington, DC 20036
Tel: (202) 331-9696
www.railtrails.org

National Park Service
Rivers, Trails and Conservation Assistance Program
1849 C Street, NW, MS-3622
Washington, DC 20240
www.nrc.nps.gov/rtca/rtca-ofh.htm

HEALTH

Centers for Disease Control and Prevention
Division of Nutrition and Physical Activity
4770 Buford Highway, NE
Atlanta, GA 30341-3724
www.cdc.gov/nccdphp/dnpa
Tel: (770) 488-5692

National Center for Injury Prevention and Control
Childhood Injury Prevention
4770 Buford Highway, NE
Atlanta, GA 30341
www.cdc.gov/ncipc

ADVOCACY AND USER GROUPS

Thunderhead Alliance
1612 K Street, NW, Suite 401
Washington, DC 20006
Tel: (202) 822-1333
www.thunderheadalliance.org

League of American Bicyclists
1612 K Street, NW, Suite 401
Washington, DC 20006
Tel: (202) 822-1333
www.bikeleague.org

National Center for Bicycling and Walking
1506 21st Street, NW, Suite 200
Washington, DC 20036
Tel: (202) 463-6622
www.bikewalk.org

Surface Transportation Policy Project
1100 17th Street, NW, 10th Floor
Washington, DC 20036
Tel: (202) 466-2636
www.transact.org

OTHER USEFUL RESOURCES

Bikes and transit: www.bikemap.com

Bicycle information: www.bicyclinginfo.org

Bicycle-related research:
www.tfhr.gov/safety/pedbike/pedbike.htm

Bicycling Magazine: www.bicycling.com/

Bicycle touring:
Adventure Cycling Association
P.O. Box 8308
Missoula, MT 59807
(800) 755-2453
(406) 721-8754
www.adv-cycling.org

Livable Communities:

An Evaluation Guide



Livable Communities:

An Evaluation Guide

Prepared for the AARP Public Policy Institute

by
Arizona State University
Herberger Center for Design Excellence

Project Team

Mary Kihl
Dean Brennan
Neha Gabhawala
Jacqueline List
Parul Mittal

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AARP
Public Policy Institute
601 E Street NW
Washington, DC 20049

PROJECT TEAM

The project team for this updated Guide includes:

Mary Kihl, Professor of Planning
Arizona State University, Tempe, Arizona

Dean Brennan, Principal Planner
City of Phoenix, Arizona

Neha Gabhawala, Jacqueline List, and Parul Mittal were former graduate students in the School of Planning, Arizona State University. They have all graduated and gone on to launch their careers in planning.

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Boone County Transportation – Boone, Iowa

Sally Marvin
St. Petersburg Council on Aging – St. Petersburg, Florida

William Rambo, Senior Resident
Northport, New York

William Walker, Pebble Creek Resident
AARP volunteer – Pebble Creek, Arizona

Cathy Wiederhold
North Bellevue Community Center – Bellevue,
Washington

Lisa Yeager
Sno-Valley Senior Center – Carnation, Washington

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Interested in learning more about livable communities? Beyond 50.05, A Report to the Nation on Livable Communities: Creating Environments for Successful Aging articulates a vision of livable communities for persons of all ages, and particularly for people age 50 and older. The report presents AARP's new agenda for examining, building and retrofitting our communities to support successful aging. For more, visit AARP's website at www.aarp.org/beyond50

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INTRODUCTION

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ART

We all want to live in a livable community. Each of us has his or her own image of what such a community should look like. That image is shaped, in part, by our reaction to the communities in which we now live or used to live. For older residents, a livable community would include elements that help them to maintain independence and quality of life.

The physical characteristics of a community often play a major role in facilitating our personal independence. A safe pedestrian environment, easy access to grocery stores and other shops, a mix of housing types, and nearby health centers and recreational facilities are all important elements that can positively affect our daily lives. However, poor community design can make it difficult for us to remain independent and involved in the community around us. For instance, a limited mix of housing types can be a challenge to aging within the same community; poorly maintained sidewalks can be a personal safety concern; and physical barriers, such as busy highways and high walls, can divide and isolate communities.

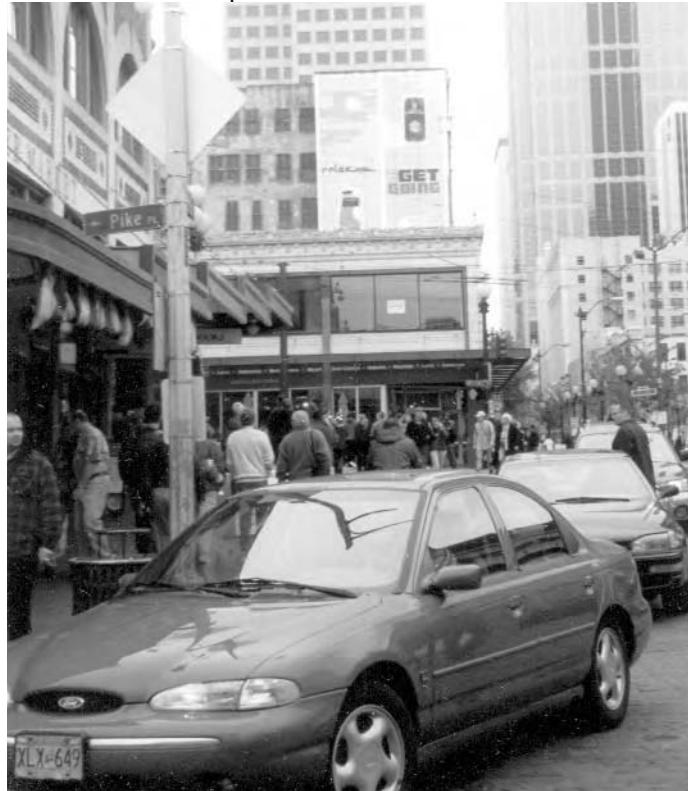


A livable community is one that has affordable and appropriate housing, supportive community features and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life.

The purpose of this Livable Communities Evaluation Guide is to encourage us to take a new look at the community or neighborhood in which we now live. Although this guide is written from the perspective of older persons, the features and services discussed promote livability for persons of all ages and abilities. The intent is not to "grade" or rank communities, but rather to help residents identify areas where they can direct their energies toward making their community more livable for themselves and others. Livability will only become a reality in our individual communities and neighborhoods if citizens actively take charge and move to bring about key changes.

Creating and Updating the Livable Communities Evaluation Guide

In 2000, AARP published *Livable Communities: An Evaluation Guide*, prepared by Patricia Pollack of Cornell University, so that older volunteers and other interested community members could assess the capacity of their community to meet the needs of older adults. The survey proved to be a useful tool for community volunteers who wanted to take a closer look at their own communities as a starting point for mobilizing others to effect change. This updated Guide builds on the previous document but reflects additional interests and concerns. It also includes new success stories and offers follow-up contact information and new references, including references to useful Internet sites. Although Internet references to specific documents may change over time, the basic sites will continue to be useful. Older residents, as well as others in the broader community, increasingly rely on the Internet as a valuable source of information. For those who do not own their own computers, many senior centers and public libraries have computers available for public access and offer computer classes as well.



Involving Focus Groups

An important part of creating this updated Guide was the active participation of older community residents across the country. In an effort to gain a broad awareness of current perceptions of livability and community issues, a research team conducted 14 focus groups with older residents and caregivers in 13 cities in five areas of the country. The communities included Sun City, Pebble Creek, and Mesa, Arizona; Boone and Gowrie, Iowa; Borough Park, Bayridge, Hempstead, and Northport, New York; Carnation, Renton, and Bellevue, Washington; and Sarasota and St. Petersburg, Florida.

Collectively, these groups were diverse in income, race, and ethnicity. They included participants from age-restricted and intergenerational communities as well as communities in rural, urban, and suburban areas. These communities ranged in population from less than 1,000 to significantly more than one million residents. All par-

Participants were living independently, and most were actively engaged in their communities. In addition to these focus groups, the research team created an interactive website, which attracted responses from 80 older citizens from across the country.

Participants in each focus group were selected to represent a range of interests and expertise in a given community. The participants themselves defined "community" in ways that reflected their own experiences. Some defined community in terms of the formal geographic boundaries of a particular city or subdivision; others defined it in terms of a neighborhood or particular older adult housing complex and nearby environs. Still others saw their community reaching out to include those who were linked by common organizations and associations.

This type of variation is also anticipated from those who will use this guide.

Defining Elements of Livability

Despite their diverse mix of communities and participants, all of the focus groups agreed on a common definition of a livable community that is friendly to older adults—a caring community that offers a high quality of life and fosters continued independence. Each group independently developed its own list of elements that participants felt characterized an older adult-friendly community. The lists were remarkably similar. They noted in particular the importance of nearby quality health facilities, a reliable public transportation system, variety in housing types, a safe and secure environment, access to shopping, a physical environment that fosters walking ("walkability"), and opportunities for recreation and culture. Respondents to the online survey identified very similar



areas of concern.

Each focus group then proceeded to conduct an initial on-the-spot community self-assessment to explore the ways in which its own community reflected its image of livabil-

ity, noting areas that needed improvement. The elements that the groups identified as improving livability reflected the participants' personal experience as well as their collective perception of the community in which they lived. The Internet responders also underscored positive aspects of their community and those that needed attention.

Moving from Discussion to Action

Several of the focus groups actually began to plan an action strategy to address issues that they had identified as needing attention. The agenda varied considerably depending on the setting and the participants' experience. For example, topics of interest included advocating for more local dial-a-ride services, pressing for a senior center in a forgotten part of the community, raising funds for a new intergenerational center, facilitating better communication strategies among community groups, advocating for more accessibility options in new homes, and identifying ways to increase opportunities for social interaction.



The *Guide* as a Step toward Action

It may be difficult for a small group to change a whole community, but residents can draw attention to an issue that is important to them and join forces with others who share similar concerns. Older volunteers in communities across the nation have done exactly that. In one community, for example, an organized group of older adults pushed for installation of a pedestrian walk signal. In another community, a group organized to keep the local hospital from closing.

This *Guide* is intended to empower groups of older volunteers to better understand their communities and work to improve them. It offers a series of community self-assessment surveys that will help groups to identify issues of concern, and it provides contacts to whom volunteers can express those concerns. The issue areas highlighted in these surveys reflect concerns raised within the focus groups and the Internet website, as well as other suggestions based on experience. Individuals and groups using this *Guide* are sure to identify additional

issues for their communities. What is important is for each group to select an issue that its members are deeply concerned about-and can do something about-and to address this challenge.

How to Use the *Guide*

Part II, *Introducing the Community Survey*, provides general information about the reasons why a group may want to conduct a community survey; describes the general process for carrying out a survey, including any advance preparation tasks; and outlines a range of steps that groups can take to follow up on their findings. Before you begin a community survey process, read this section carefully; it provides useful information that applies to all of the surveys.

Part III, *Conducting the Community Survey*, is divided into sections according to issue areas that groups of active older persons have identified as important to maintaining independence and quality of life. Each section offers a description of livability as it relates to that issue area, a survey to guide a new look at a community or neighborhood, and a set of follow-up steps to address those issues.

Part IV, *More Information and Contacts*, identifies a variety of additional resources and sources of information.



WALKABILITY

Introduction

Walking is the oldest form of transportation, and sidewalks are the fundamental building blocks of a pedestrian network. For older adults who no longer drive, sidewalks are a crucial resource for remaining active and interacting with others. Most important, they allow older people to get to a variety of vital destinations, such as shopping and medical facilities. (This survey is concerned with walking as a crucial mode of transportation. The recreational aspects of walking are covered in Section 7, Recreation and Cultural Activities.)

Unfortunately, in too many communities, the transportation system has been built around the automobile, and little consideration has been given to the needs and desires of pedestrians. Lack of sidewalks, construction of sidewalks too close to streets and roads, and lack of maintenance can discourage people from using this vital aid to walking and can keep those who need to walk from reaching their destination.

Challenges for Pedestrians and Why People Don't Walk

Obviously, many people do walk. But many more would like to walk if their community had an adequate pedestrian system in place that made walking safe and enjoyable. What are some of the challenges that your community faces in encouraging walking as an alternative mode of transportation? Here are a few common problems; your community may have different or additional concerns.



Weather

Weather plays a role in when, where, and how far people are willing to walk. Realistically, there is not much we can do about the weather, but if other physical constraints are minimized, weather can become less of a factor in walking. For example, having and enforcing rules about keeping sidewalks clear of ice and snow can make walking safer and more possible in winter.

Discontinuous and Disjointed Routes

Sidewalks that stop and then pick up again later can make it physically impossible for some pedestrians to reach a destination. Sidewalks that do not go where people want or need to go can discourage residents from walking.

Traffic Conflicts

Poor design and poor placement of sidewalks cause pedestrians real or perceived danger from fast-moving vehicles. Locating a sidewalk immediately next to busy streets can discourage many people from using it. For instance, having a strip of grass between the sidewalk and roadway may help pedestrians feel safer.

Difficulty in Crossing Streets

Pedestrian signals, where available, often do not accommodate those who walk more slowly than the standard four feet per second. This presents a serious danger, particularly where there are very wide streets, or where multi-lane streets lack a median for pedestrians to pause until the next signal.

Personal Security

Poor design and lighting can contribute to people feeling vulnerable to crime and fearful about walking.

Poor Design

Narrow sidewalks that make it difficult for two people to walk side-by-side can discourage people from walking.

Lack of Maintenance

Uneven surfaces, broken pavement, and large cracks are examples of poorly maintained sidewalks and increase the risk of falling.

Obstructions

Obstructions such as overgrown bushes and trees can make it difficult for people to walk on a sidewalk. Likewise, poor planning can result in obstacles such as fire hydrants or utility poles being placed in a sidewalk. In addition, unleashed dogs can be threatening to a person walking along a sidewalk.







WALKABILITY SURVEY

Preparing to Conduct the Survey

To conduct a survey of the walking opportunities in your community, it is important that your teams take the time to walk the streets and record their results. If your community is very large, you may want to select a smaller, more manageable area on which to focus. Depending on the interests of the survey teams, you also may want to focus on specific issues, such as sidewalk location or maintenance.

An added note about preparing for this survey: Although the survey questions provided here focus on problems with sidewalks, consider asking your survey teams to collect information about areas that are particularly commendable as well. Being able to demonstrate that your objectives are being met in some locations can bolster your argument for action in other locations.

Getting Ready Checklist (see pages 9-14 for more details)

Review and Define

- Review the sample Walkability survey
- Define the community to assess

Gather Materials

- Street maps
- Clipboards
- Note paper or handheld voice recorder (if desired)
- Pens, pencils, highlighters
- Measuring tape (if desired)
- Stopwatch or watch with second hand (if desired)
- Comfortable walking shoes and clothing
- Camera (if desired)
- Flashlight (Some questions address lighting issues, and you will have to check for this at night. You will need a flashlight to record your responses and provide light in those areas where lighting is inadequate.)

Collect Useful Background Material

- Get census information on sections of the community with significant numbers of older residents
- Gather information about regulations on sidewalk snow removal and other maintenance issues

Enlist Allies and Partners

- Local library staff
- City planning staff
- Community transportation agency
- Local police (an officer may be willing to join you on a nighttime survey)
- Other:

Complete Other Tasks

- Form survey teams (DO NOT GO ALONE TO DO THE SURVEY AT NIGHT)
- Ask for volunteers to carry out specific jobs
- Create a schedule for conducting the survey
- Make sure volunteers are familiar with survey area

Conducting the Survey

Sidewalks and Their Maintenance

1. Are there sidewalks throughout your community?

YES NO

2. Are the sidewalks well maintained? (Surfaces should be flat with only minor cracks and minimal separation between slabs.) Note the location of problem sidewalks.

YES NO

3. Are curb-cuts visible? Would it be difficult for those with visual impairments to detect them or those with wheelchairs or walkers to negotiate them? Note the location of problem curb-cuts.

YES NO

Useful Terms to Know

Curb-cut: The area cut out of the edge of a sidewalk at an intersection. Curb-cuts allow people with wheelchairs, bicycles, and strollers to move easily from the sidewalk to

4. Are any sidewalks obstructed by bushes or overhanging tree branches? Note the location of problem sidewalks.

YES NO



5a. Does the community have a regulation regarding snow removal from sidewalks? (Your local public works department or city/county manager's office should have this information.)

YES NO

Note locations where sidewalks are not cleared, if applicable. _____

5b. Does the community have a program to help older persons clear snow from the sidewalk in front of their home?

YES NO

6. Are the sidewalks wide enough for at least two people to walk together? (A minimum width of 4 feet is needed for two people to walk together.)

YES NO

Note the location of substandard sidewalks on the survey map.

7. Do bicyclists, skateboarders, roller skaters, and other nonpedestrian users make walking difficult?

YES NO

If this is a problem in specific areas, locate those areas on the survey map.

8. Are there other problems that affect use of the sidewalks, such as animal waste or unleashed dogs that threaten pedestrians?

YES NO

If this is a problem in specific areas, locate the areas on the survey map.

Traffic Signals

9. Are traffic signals located at pedestrian crossings?

YES NO

Note on the survey map where you think additional traffic signals are needed.

10. Do the traffic signals provide adequate time for pedestrians to cross the street without feeling rushed?

YES NO

Note on the survey map the location of signals that do not provide adequate time for crossing.

11. Do signals have push-to-walk buttons to help stop traffic on a busy street?

YES NO

Note location of signals without push-to-walk buttons on the survey map.



Traffic signals generally provide a safe method for pedestrians to cross a street. However, non-signalized crosswalks can create a false sense of security that could result in a pedestrian fatality. The Federal Highway Administration Highway Design Handbook for Older Drivers and Pedestrians: Recommendations and Guidelines (December 2000) suggests that the shorter stride and slower gait of less agile older pedestrians requires that pedestrian control signal timing should be based on an assumed walking speed of .85 meters or 2.8 feet per second.



12. Do any long streets with no intersections have mid-block crosswalks?

- YES NO

Note location on the survey map.

13. Are crosswalks well marked? (This could include striping, signage for pedestrians and vehicles, caution lights.)

- YES NO

Note locations of crosswalks that are not well marked.

14. Do all crosswalks have curb-cuts to provide a transition from the sidewalk to the roadway?

- YES NO

Note locations on the survey map of crosswalks that do not have curb-cuts or curb-ramps.

15. Are curb-cuts textured to alert persons with visual impairments that they are about to enter the street?

Pedestrian Amenities

16. Are the sidewalks in your community shaded by trees?

- YES NO

Note on the survey map where there are no shade trees.

17. Are there resting places (e.g., benches, low walls) for pedestrians along the sidewalks?

YES NO

Note on the survey map where resting places are located, especially in areas of the community with many older residents.

18. Are there enough resting places?

YES NO

Note on the survey map where you think additional resting places are needed.

19. Are resting places shaded adequately from the sun?

YES NO

Note on the survey map the location of seating places that are not shaded.

20. Do the community's signs provide clear directions for pedestrians?

YES NO

Note on the survey map where you think signs are needed or should be improved.



Planning and Carrying Out Next Steps

Most of the concerns raised in the walkability survey will require working with the city or county public works department. For example, you can present your findings about placement and width of sidewalks and sidewalk maintenance issues directly to this agency. However, keep in mind that responsibility for specific sidewalk issues may vary. For example, even though the city public works department is the place to begin to address sidewalk maintenance, such maintenance ultimately may be the responsibility of property owners. The addition of a new walkway may require negotiating with the respective property owners about paying for it. This process is easier if what is needed is to fill in a gap rather than to install a completely new walkway that will cross a number of private properties. Trimming bushes that overhang the sidewalk is the responsibility of the property owner, but the city or county will send an official notice to request that the property owner take care of it. If the property owner does not comply, a public works crew may trim the bushes and bill the property owner. In some neighborhoods, the responsibility for sidewalks rests with the homeowners' association, and you should address your concerns there.

Some communities or neighborhoods have ordinances that restrict installation of sidewalks or curbs because of aesthetics or as part of an effort to make the area appear to be less urban. That will present a real challenge to any group that wants to add sidewalks to make walking easier. In these communities, you must present the need for sidewalks to the city or county council. In the short term, you might direct your energies more effectively toward other issues, such as ensuring that neighborhood streets are well maintained.

If action on sidewalks is not possible, your group may be able to move forward in other areas that can help to make streets safer to walk along. For example, some communities have been very effective in urging that the city install traffic calming measures such as roundabouts, speed tables, or speed humps as ways of reducing cut-through traffic or speeding cars. In Peoria, Arizona, residents in a housing development can collect signatures on a petition requesting traffic calming devices. If all residents sign, the city will install devices at the city's

expense. If 80 percent sign, the city will pay 80 percent, with the property owners paying the rest as an assessment. No devices are installed if less than 70 percent of the property owners sign the petitions.

You may pursue action on streetscapes that need more effective streetlights, benches, and shade trees through different agencies or organizations depending on the location. Consider forming an alliance with downtown merchants or others who may be interested in improving your community's visual identity. Other groups that may be interested include the planning department, which would be involved in improving streetscapes, or the parks department, which might be involved in planting trees. Local parent-teacher associations (PTAs) may also be interested because of their concern for safe routes to schools.

Traffic signals are the responsibility of the traffic manager in the city or county department of transportation. Pedestrian cross signals are usually timed for a person to walk at four feet per second; however, older residents often take longer to cross streets. It is possible to allow more time in locations with many older residents. However, such a change will affect the rest of the signal lights on the street, so the traffic manager may be reluctant to make such an adjustment.

Crosswalks are another important issue to raise with officials. Signalized crosswalks with flashing lights or special signals activated by a walk sign are the safest. New types of crosswalks in which the striping in the crosswalk itself lights up when activated by a pedestrian demonstrate the potential of technology to enhance pedestrian safety. Representatives of the city or state department of transportation may be interested in a demonstration site that shows how older residents will particularly benefit by improvements in major street crossings.

Resources

The Internet has many available resources on walking and community livability. Here are just a few:

National Center for Bicycling and Walking
(www.bikewalk.org)

Walkable Communities (www.walkable.org)

The Pedestrian and Bicycle Information Center
(<http://www.bicyclinginfo.org> and www.walkinginfo.org)

Quality Places (www.qualityplaces.marc.org)

Active Living Network (www.activeliving.org)

Smart Growth Network (www.smartgrowth.org)

Sustainable Communities Network (www.sustainable.org)

American Institute of Architects, Center for Livable Communities (<http://www.aia.org/livable/>)

Numerous other sources are available that deal with pedestrian signs and safety, such as:

The New Jersey Department of Transportation site, "Pedestrian Safety."
(<http://www.state.nj.us/commuter/pedsafety/crosswalks.shtm>)

Guerrier, Jose, and Sylvan Jolibois. "Give Elderly Pedestrians More Time to Cross Intersections," 1999
(<http://www.msstate.edu/org/gerontology/hfes-gep.htm>).



Designing Accessible Pedestrian Facilities in the Public Rights-of-Way



Module 1: Pedestrian Accessibility Introduction and Context

SUMMARY

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Context

This module is part of the Designing Accessible Pedestrian Facilities in the Public Rights-of-Way course. This course is intended to provide practicing traffic and highway engineers, planners and transportation managers with a better understanding of the latest Public Rights-of-Way guidelines developed by the US Access Board, and how they can be applied in better designing sidewalks and intersections to accommodate persons with disabilities. Each of the four course modules is designed to be informative in the area of identifying the needs of persons with disabilities, provide practical engineering approaches to successfully addressing these needs on existing facilities, and serve as catalysts in promoting innovative solutions to similar challenges at future locations.

- Module 1 - Pedestrian accessibility: Introduction and context
- Module 2 - Planning for accessible pedestrian rights-of-way
- Module 3 - Accessible sidewalks and pedestrian access
- Module 4 - Accessible pedestrian crossings

Objectives

On completion of this module participants will be able to:

- Discuss key provisions of ADA that require the design of accessible pedestrian facilities
- Identify key issues for pedestrians with various disabilities in travel in the public right-of-way, including:
 - Mobility impairments
 - Visual impairments
 - Cognitive impairments

Target audience

The principal target audience for this learning program is transportation practitioners, designers and planners.

Key references

- *Americans with Disabilities Act (ADA)* 1990
<http://www.usdoj.gov/crt/ada/pubs/ada.txt>
- *Americans with Disabilities Act Accessibility Guidelines (ADAAG)*, (1991) U.S. Architectural and Transportation Barriers Compliance Board, Washington, D.C., July 26, 1991.
- *Building a True Community*, (2001) US Architectural & Transportation Barriers Compliance Board, January 10, 2001.
<http://www.access-board.gov/prowac/commrept/part2.htm> This Executive Summary is a quick reference to key recommendations of PROWAAC.
This report provides background on recommendations made by the PROWAAC for new construction of facilities within the public right of way.
- *Detectable Warnings: Synthesis of U.S. and International Practice*, (2000) U.S. Access Board, May 12, 2000.
<http://www.access-board.gov/publications/DW%20Synthesis/report.htm>
This report provides a discussion of case studies of use of detectable warnings in the U.S. prior to late 2000, application of detectable warning surfaces around the country, and detectable warning products available within the U.S.
- *Guidelines for Planning, Design, and Operation of Pedestrian Facilities*, American Association of State Highway and Transportation Officials, not yet published.
This document is the most current national discussion document on the planning and design of pedestrian facilities.
- *Manual on Uniform Traffic Control Devices*, 2003 Edition, U.S. Department of Transportation, Federal Highway Administration, Washington, D.C.
MUTCD includes standards for the installation of traffic controls, including crosswalk markings, and vehicular and pedestrian signals, including accessible pedestrian signals.
- *Draft Public Rights of Way Accessibility Guidelines* (2002) U.S. Access Board, Washington, D.C., June 17, 2002.
- *Draft Special Report: ACCESSIBLE PUBLIC RIGHTS OF WAY, PLANNING and DESIGNING for ACCESS, ITE*, not yet published.
This report provides comprehensive guidance in applying best practices to projects that alter existing roadway and pedestrian facilities within public rights of way. It includes model sidewalk and curb ramp libraries, a recommended design process for planning and programming improvements, design solutions for a variety of hypothetical design situations for accessibility, and case studies of actual design challenges some designers have faced.

Further reading and references

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- Woo, J., Ho, S.C., Lau, J., Chan, S.G. & Yuen (1995) 'Age-associated gait changes in the elderly: Pathological or physiological?', *Neuroepidemiology*, 14, pp. 65-71.

Videos

- Accessible Sidewalks: Design Issues for Pedestrians with Disabilities (1997) Washington, DC: U.S. Architectural and Transportation Barriers Compliance Board (Access Board).

Websites

- US Access Board <http://www.access-board.gov>
- Pedestrian and bicycle information center <http://www.walkinginfo.org/aps>
- Federal Highway Administration, Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices, <http://www.fhwa.dot.gov/environment/bikeped/access-1.htm>

Introduction

This introductory module will assist engineering professionals to identify with travel issues of pedestrians with disabilities.

Pedestrians who will be travelling on streets and sidewalks of a community come in a range of sizes, with variations in speed, balance and maneuverability, just as vehicles do. Transportation professionals are used to considering the needs of different vehicle types in using a roadway. The same principles need to be applied to the design of pedestrian facilities since the characteristics of pedestrians with disabilities may affect their ability to use the sidewalk. Just as the design vehicle for most facilities is not a small sports car, the design pedestrian should not be a young agile fast moving person.

Designing Sidewalks and Trails for Access (FHWA 1999) classifies the barriers to travel by pedestrians with disabilities into two types of barriers: movement barriers and information barriers. A movement barrier is anything that restricts an individual's ability to physically move along or within an environment. Information barriers restrict the individual's ability to use information contained within the sidewalk or trail environment. Pedestrians with mobility impairments typically encounter movement barriers while most barriers to pedestrians who are visually impaired or blind fall into the information domain.

In designing and constructing facilities, the designer needs to be aware of how the features will be used and factors that affect the usability of certain designs. An understanding of the users and typical mobility devices and techniques will help in determining alterations in situations where the new construction guidelines cannot be fully met. The draft ADA guidelines are minimum guidelines; in many cases, they are barely adequate and most users will benefit from greater width, larger level landings and more maneuvering space.

The key concepts underpinning the process of designing appropriate alterations will be explained. Activities will be used to demonstrate problems encountered by pedestrians with disabilities.

Throughout this program you will have a chance to engage in interactive activities so you can experience directly the obstacles faced for people with reduced mobility. You will identify common assumptions and types of visual information unconsciously used by sighted pedestrians.

Designers and planners would further benefit from discussions with people with disabilities in their community and some 'on the street' experience with those individuals.

Statistics and trends

20% of the population has a disability

Pedestrian facilities are critical links in the transportation network and should be designed to meet the needs of the maximum number of users.

According to the 1990 U.S. Census, one in every five Americans has a disability (U.S. Department of Commerce, Bureau of the Census, 1994). Anyone can experience a temporary or permanent disability at any time due to age, illness, or injury.

85 percent of Americans living to their full life expectancy will suffer a permanent disability (University of North Carolina Highway Safety Research Center, 1996).

People with disabilities are also more likely to be pedestrians than other adults because some physical limitations can make driving difficult and because they experience financial hardship at a higher rate than other adults (Golden, Kilb & Mayerson, 1993).

Aging population growing

Improvements in quality of life, nutrition, and health care have lengthened the average American lifespan and increased the ranks of older adults.

By the year 2020, it is estimated that 17 percent or more of the U.S. population (nearly one in five) will be older than 65 (Staplin, Lococo & Byington, 1998). Although ageing itself is not a disability, according to the U.S. Census, in 1990 'most persons aged 75 or older had a disability' (U.S. Department of Commerce, Bureau)

Visual impairments

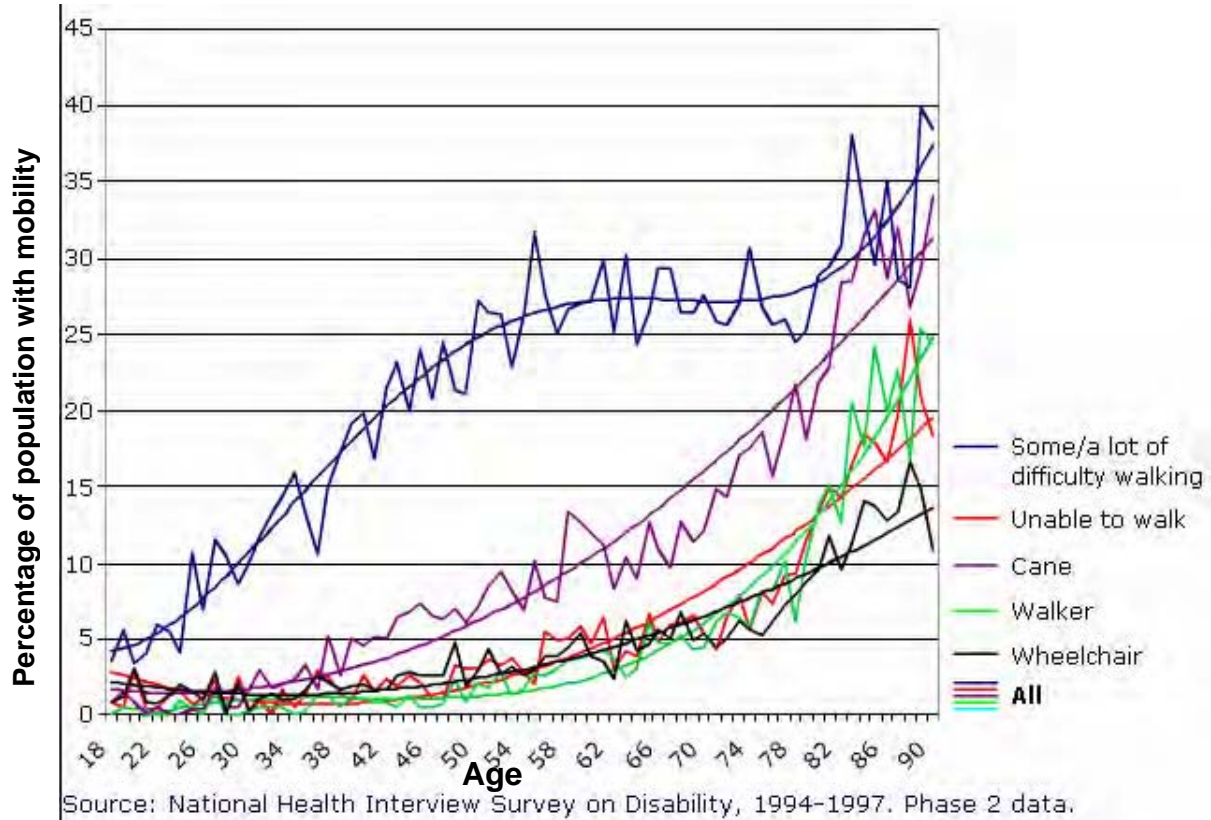
Some degree of vision impairment affects 8.3 million (3.1%) Americans of all ages. (Adams, Hendershot & Marano, 1999).

Approximately 3% of individuals age 6 and older, representing 7.9million people, have difficulty seeing words and letters in ordinary newspaper print even when wearing glasses or contact lenses. This number increases to 12% among persons age 65 and older (3.9 million)(McNeil, 2001). Approximately 1.3 million Americans are legally blind.

By 2010, projections are that there will be 20 million visually impaired persons over 45.

Interpreting statistics

The graph below shows the proportion of the population unable to or having some difficulty walking by themselves, and use of assistive devices, by age: United States 1995-1997. In general the percentage of population with mobility impairments increases with age.



Background

Accessibility requirements

Federally funded programs have been required to provide accessible features for over 30 years. The Architectural Barriers Act of 1968 required new federal facilities to be accessible and Section 504 of the Rehabilitation Act of 1973 required non-discrimination in all federally funded programs.

The Americans with Disabilities Act of 1990 (ADA)

A landmark civil rights law that both identifies and prohibits discrimination on the basis of disability. The Act prohibits discrimination in employment, telecommunications, transportation, access to facilities and programs provided by State and local government entities, and access to the goods and services provided by places of public accommodation such as lodging, health, and recreation facilities. People who design and construct facilities are responsible under the ADA to make them accessible to and usable by people with disabilities. All programs and new and altered facilities, (regardless of funding) must be accessible.

Title V of the ADA

Title V of the ADA requires the U.S. Access Board to issue minimum guidelines for accessible design to ensure that buildings, facilities, rail passenger cars, and vehicles are accessible in terms of architecture and design, transportation, and communication to individuals with disabilities.

ADAAG and UFAS

The specifications of establishing minimum levels of accessibility.

Critical requirements of the Americans with Disabilities Act

TITLE II: STATE AND LOCAL GOVERNMENT SERVICES, Subpart D, Program Accessibility:

35.151 New construction and alterations.

Each facility constructed by, on behalf of, or for the use of a public entity shall be designed and constructed in such manner that the facility is readily accessible to and usable by individuals with disabilities.

“READILY ACCESSIBLE TO AND USABLE BY” means:

“...that it can be approached, entered, and used by individuals with disabilities (including mobility, sensory, and cognitive impairments) easily and conveniently. To the extent that a particular type or element of a facility is not specifically addressed by the standards, the language of this section is the safest guide.”

TITLE II: STATE AND LOCAL GOVERNMENT SERVICES, Subpart E, Communications:

35.160 General.

A public entity shall take appropriate steps to ensure that communications with applicants, participants, and members of the public with disabilities are as effective as communications with others.

Because ADAAG (and UFAS before it) does not yet include provisions specific to the public right-of-way, designers have had to adapt its building standards for use on sidewalks and street crossings in order to meet the law's requirements for accessibility. Until the new standards are completed, engineers must themselves determine what constitutes the accessibility the law requires. This project considers the draft guidelines published by the Access Board to be best practice.

Developments in Disability Rights Legislation and Accessibility Guidelines from 1968 to 2003

1968	Architectural Barriers Act (ABA)	Congress passes the Architectural Barriers Act (ABA) (P.L. 90-480) which requires that new Federal facilities must be accessible
1973	Rehabilitation Act	Congress passes the Rehabilitation Act (P.L. 93-112). Section 504 requires that programs and facilities funded with Federal money, such as Federal Aid to Highways, must be accessible.
1982	Minimum Guidelines and Requirements for Accessible Design (MGRAD)	U.S. Access Board publishes Minimum Guidelines and Requirements for Accessible Design (MGRAD).
1984	Uniform Federal Accessibility Standard (UFAS)	Federal ABA rule-making agencies publish Uniform Federal Accessibility Standard (UFAS). http://www.access-board.gov/ufas/ufas-html/ufas.htm
1990	Americans with Disabilities Act (ADA)	Congress passes the Americans with Disabilities Act (P.L. 101-336). All programs and new and altered facilities, (regardless of funding) must be accessible.
1991	Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)	U.S. Access Board publishes Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) http://www.access-board.gov/adaag/html/adaag.htm
1991	ADA Standards for Accessible Design	U.S. Departments of Justice and Transportation publish the ADA Standards for Accessible Design
		Compliance with a referenced standard, either Uniform Federal Accessibility Standard (UFAS: 1984) or ADA Accessibility Guidelines (ADAAG 1991), is deemed to provide the required accessibility in new construction. These standards were developed in language most applicable to buildings and facilities on sites, not public right-of-way.
		TITLE II OF THE ADA covers State and local government services, including the design and construction of sidewalks and street crossings in the public right-of-way, covers existing facilities differently than new construction and alterations, and requires accessibility in construction even if there are no technical standards.
1992	ADA Standards for Accessible Design	In 1992, as part of a larger rulemaking on state and local government facilities, the Board set out to augment ADAAG with standards that better reflected the particular constraints of work in the public right-of-way. That effort continues today.
		Because UFAS and ADAAG were developed for buildings and facilities on sites, agencies designing and constructing pedestrian facilities had to apply the requirements as best they could to the very different environment of the public right-of-way.
1998	Rehabilitation Act	Congress reauthorizes the Rehabilitation Act.

1999	Public Rights of Way Access Advisory Committee (PROWAAC)	Access Board established the Public Rights of Way Access Advisory Committee (PROWAAC) to develop recommendations for Public Rights of Way guidelines. Stakeholders included 33 industry, disability, and pedestrian organizations, Federal, State, and local government agencies
2001	PROWAAC report 'Building a True Community'	PROWAAC report 'Building a True Community', published. http://www.access-board.gov/prowac/commrept/index.htm
2002	Draft Public Rights-of-Way Accessibility Guidelines	June 17, 2002, Draft Public Rights-of-Way Accessibility Guidelines were developed by the Access Board and published for public comment (comment period ended October 28, 2002) http://www.access-board.gov/rowdraft.htm
Current	Current progress of rulemaking	Board is reviewing public comments to the draft; and developing a Notice of Proposed Rulemaking (NPRM) and regulatory assessment (RA). The NPRM and RA will be submitted to the Office of Management and Budget (OMB) for approval, then the proposed rule, or NPRM, will be published for public comment.
		After publication of an NPRM, the Access Board will review public comments, develop a final rule and regulatory assessment, submit it to OMB for review and approval, and publish the guidelines as a final rule.
		Rulemaking is a two-part process. After the Access Board finalizes the minimum guidelines under the ADA, the Department of Justice and the Department of Transportation adopt enforceable standards that are consistent with the Board's guidelines.

Mobility impairments

People with mobility impairments include those who use wheelchairs, crutches, canes, walkers, orthotics, and prosthetic limbs. People with mobility impairments may use manual wheelchairs, power wheelchairs, or scooters in travel in the outdoor public rights of way environment. Some may use various devices, depending on the demands of their travel on a particular trip, for example, using crutches indoors and a scooter for outdoor travel. However, there are many people with mobility impairments who do not use assistive devices.

Wheelchair or scooter users

Wheelchair and scooter users often travel much faster than walking pedestrians, especially on level surfaces or downgrades, but they can be much slower when travelling uphill. In addition, their stability and control can be affected by surfaces with cross-slopes, grades, or rough terrain. Wheelchair and scooter users require a wider path of travel and more space to turn around than most other pedestrians. Sufficient passing space should be provided to allow wheelchair users to pass one another and to turn around. The seated position of wheelchair users also impacts the height of their line of sight, which is important when looking for traffic and reading street signs.

The center of gravity of a wheelchair or scooter is often relatively high, making the danger of tipping over on uneven surfaces or slopes high. The turning diameter of a wheelchair or scooter is dependent upon the length of its wheelbase. Powered wheelchairs and scooters are generally longer than manual wheelchairs.

Crutches, canes or walkers

People who employ walking aids include those who use canes, crutches, or walkers to ease their ambulation.

The limitations of walking-aid users might include the following (Bhambhani and Clarkson, 1989):

- Difficulty negotiating steep grades
- Difficulty negotiating steep cross-slopes
- Decreased stability
- Slower walking speed
- Reduced endurance
- Inability to react quickly to dangerous situations
- Reduced floor reach

People who use walking aids tend to travel more slowly than other pedestrians. As a result, they benefit from longer pedestrian signal cycles at intersections and the presence of passing spaces to allow others to travel around them. Walking-aid users also require significantly more energy for ambulation.

Issues/Problems

Lack of clear width

- At least 60 inches (1525 mm) of width are required for a variety of wheelchairs currently in use to turn or pass; and that as much width as 72 inches (1830 mm) may be necessary for two wheelchair users to travel side-by-side.
- Some people who use crutches require as much as 42 inches (1065 mm) of usable width to support travel.
- People with service animals or sighted guides will use a minimum of 48 inches (1220 mm).

Curbs, vertical offsets in the sidewalk, or a lip at the base of the ramp

- Because wheels are difficult to propel over uneven or soft surfaces, wheelchair and scooter users need firm, stable surfaces and structures such as ramps or beveled edges to negotiate changes in level.

- The small front wheels of a wheelchair can be caught and turned by sidewalk cracks, which stops forward movement.
- Surface quality significantly affects ease of travel for walking-aid users. Grates and cracks wide enough to catch the tip of a cane can be potentially dangerous.
- Curb ramps allow wheelchair users to negotiate curbs.
- People who use walking aids are often able to negotiate small steps and might even prefer steps to a longer ramp. In these situations, railings can be extremely helpful. Tall steps are generally quite difficult for cane, crutch, and walker users to negotiate. People who use walkers and crutches also benefit from stairs deep enough to accommodate all four legs of the walker or crutches positioned in front of the feet.
- Icy or uneven surfaces can also be hazardous because they further reduce the already precarious stability of walking-aid users and can cause wheelchair users to lose control and slide downhill

Lack of landings

- Level landing is needed at the top of the curb ramp to allow travelers who don't plan to cross the street to turn the corner without dealing with the slopes of the ramps, to maneuver in positioning to begin travel down the ramp or to rest.
- Pedestrian pushbuttons should also be located next to a level landing so the person with mobility impairments does not have to balance on a slope while pushing the button.

Cross slopes

- Because cross slopes tend to cause wheelchairs and scooters to veer downhill, manual wheelchair users must perform additional work to continue travelling in a straight line over areas such as driveway crossings. Severe cross slopes can cause wheelchairs to tip over sideways, especially during a turn (FHWA and NHTSA, 1996).
- Cross slopes that change very rapidly cause additional problems for wheelchair users. The rate of change of cross-slope is most problematic when it occurs over a distance of less than 0.610 m (2 ft), the approximate distance covered by a wheelchair wheelbase. As the wheelchair moves over the surface of a severely warped driveway flare, it will first balance on the two rear wheels and one front caster. As the wheelchair moves forward, it then tips onto both front casters and one rear wheel. This transition may cause the wheelchair user to lose control and possibly tip over.
- A rapid change in cross-slope can also cause people with walkers to stumble.

Lack of landings Pushbuttons that cannot be reached

Visual impairments

Vision correctable to 20/20 with at least 180-degree field is considered 'normal vision'. Visual impairment is a functional limitation in seeing, even when wearing glasses or contact lenses, including: 'non-severe limitation' ('difficulty seeing words and letters') and 'severe limitation' ('unable to see words and letters').

Legal blindness is a level of visual impairment that has been defined by law to determine eligibility for benefits. It refers to central visual acuity of 20/200 or less in the better eye with the best possible correction, or a visual field of 20 degrees or less.

A person who is legally blind sees at approximately 20 feet what a person with 20/20 vision sees at 200 feet, or is able to see no more than a 20-degree field without scanning.

The general category of restricted fields can be further divided into central field loss and peripheral field loss.

Visual disabilities can cause the following impediments to mobility (Clark-Carter, Heyes, & Howarth, 1987):

- Limited perception of the path ahead (preview)
- Navigation with limited information about surroundings, providing less protection against obstacles and other dangers
- Reliance on memory and unchanging conditions in familiar terrain
- The need to assimilate information obtained through non-visual sources such as texture and sound.

Reduced visual acuity

An overall loss of acuity, sensitivity to glare, and loss of contrast sensitivity is common in the elderly population.

Central field loss

Individuals with a central field loss usually will have difficulty seeing pedestrian signals, some signs, and details directly in front of them. Central field loss is typical of macular degeneration, the leading cause of blindness in those over 60.

Peripheral field loss

Individuals with peripheral field loss, sometimes referred to as tunnel vision, may see details directly in front of them clearly, but have difficulty with objects and signs off the side. In addition, depth perception is often impaired.

Glaucoma and retinitis pigmentosa are the main causes of peripheral field loss.

Reduced attentional field

Research by Brabyn, Haegerström-Portnoy, Schneck, and Lott (2000), demonstrated that over age 60-65 the prevalence of problems detecting objects in the peripheral visual field increases dramatically. This is known as a decrease in attentional field, and it may be present with or without other types of visual impairment. By age 90, 40% of people have an attentional field of less than 10 degrees left and right. Thus, if they are looking at a pedhead, they are unlikely to be visually aware of vehicles that may be disobeying the signal, or turning across their path of travel, until it is too late to take appropriate action.

Individuals who are considered totally blind usually cannot see any difference in light and dark. Individuals who have light perception may be able to tell if it is dark or light and the direction of a bright light source, but do not have vision that is useable for discerning objects or the travel path.

Travel techniques

People who are blind or visually impaired have several choices when it comes to travelling. At any given time, they can travel using a human guide (holding onto someone's arm); use a long, white cane to identify and avoid obstacles; use a dog guide; use special optical or electronic aids; or use no additional aid. The choice of tools may depend on the extent and nature of visual impairment, personal preference, lighting, and familiarity with the area.

When travelling independently, in addition to the preferred mobility device, people with visual impairments use whatever vision they have, auditory and tactual clues, and other information they know about an area to keep track of their location and make travel decisions.

White cane

Many people who are blind use long canes to navigate. The primary cane technique is touch technique, in which the cane arcs from side to side about an inch above the ground and touches points just outside both shoulders, in rhythm with the user's steps. Because the cane only briefly touches the ground in front of the body, most surface and slope texture cues must be detected under foot, rather than with the cane. A variation on touch technique is constant-contact technique in which the cane tip is maintained on the ground constantly as it is swung from side to side in front of the body. Cane techniques do not protect the user from obstacles such as signs or bushes overhanging the sidewalk area above thigh height. The cane tip also can go under a single waist-high rail or fence, providing a warning too late to prevent body contact.

Dog guide

Some people who are blind use dog guides to navigate. 'Dogs guide in response to a specific set of commands given by voice and hand signals' (Whitstock, Franck & Haneline 1997, in Blasch et al.). A common misconception about dog guides is that they are capable of making decisions for their owners. Dog guides are trained to avoid obstacles, including overhead obstacles that would not be detected by a long cane, and to pause at stairs, curbs, and other significant changes in elevations. However, the handlers must determine the appropriate time to cross streets and keep track of their direction and turns along their travel route.

Issues

Path of travel - Clear path

- Along the sidewalk, those with usable vision may use visual cues such as the edge of the sidewalk and color changes to help maintain a straight line of travel.
- Those without vision will use cues such as the edge of the sidewalk, building lines, and the sound of traffic moving on the street parallel to their path.

Crossing streets - Traffic travelling parallel to their path is used to align and maintain alignment during street crossings.

- If the crosswalk is not parallel to the traffic flow, the pedestrian who is blind may not cross within the crosswalk.
- Because dog guides crossing an intersection generally aim for the opposite curb, they may guide their owners outside the marked crosswalk path, missing medians and pedestrian refuge islands, to take the shortest path to the opposite curb. (*The Seeing Eye*, 1996). Intersections are easiest to negotiate for dog-guide users when the line of travel from the edge of the sidewalk to the opposite curb is straight rather than skewed, as it is at some irregularly shaped intersections.

Path of travel - Overhanging obstacles

- A traveller using the cane may not detect signs, trees and other objects hanging over and into the sidewalk area. Because a blind travel

Crossing streets - Locating the street

- Where sidewalk and street blend together at curb ramps, blind pedestrians have difficulty recognizing the street. Research in 1994 indicated that 39% of blind pedestrians stepped into the street when approaching on a ramp.
- Islands that are painted, or cut-through may not be detected with the cane, or indicated by the dog guide.

Crossing streets – Determining traffic control

- Pushbutton actuation and location of pushbuttons
- Pedestrians with visual impairments are often not aware that an intersection is pushbutton-actuated and may have difficulty finding the pushbutton.
- If there are two pushbuttons, it is difficult to determine which pushbutton controls which street.
- Pedestrian actuation requires the blind pedestrian to locate and push a pushbutton, then cross on the next pedestrian phase, to be assured of having enough time. Blind pedestrians have two types of problems at these locations:
- They have traditionally waited through a light cycle to assess and refine their heading by listening to vehicular trajectories, before crossing at the next pedestrian phase. At a pedestrian actuated intersection, that is not possible because blind pedestrians then have to locate and push the button again (and re-establish their heading).
- At a location with little vehicular traffic, even if pedestrians who are blind know there is a pushbutton and use it, they may not be able to detect the onset of the walk interval if there is not a vehicle travelling straight ahead on the street parallel to their crossing.

Crossing streets – Deciding when to cross at signalized intersections

- Pedestrian walk indications, unless audible, are inaccessible to pedestrians who are visually impaired. Pedestrians who are blind typically have recognized signal changes by the traffic patterns. In the most common technique utilized for crossing at signalized intersections, pedestrians who are blind begin to cross the street when there is a surge of traffic on the street parallel to their direction of travel.
- Pedestrians who are blind must wait to hear a car travelling straight across the intersection to determine that the light has changed, so they frequently are delayed in initiating crossings while they determine that parallel traffic flow has begun. In addition, some locations do not include a pedestrian phase, and at times when vehicular volume is low, there may not be enough time to cross the street.
- Vehicular actuation allows the cycle to skip phases, so pedestrians with visual impairments cannot accurately predict when in the cycle the pedestrian phase will begin. Right-turn-on-red makes it harder to determine the surge of traffic at the onset of vehicular green on the street parallel to the crossing direction.
- Exclusive pedestrian phases and leading pedestrian intervals eliminate the traffic surge concurrent with the onset of the walk interval, thus removing the most reliable cue to the onset of the walk interval. Where right turn on red is permitted, it may never sound to blind pedestrians as though they have a walk interval.

Crossing streets – Deciding when to cross at stop sign controlled, yield controlled, or uncontrolled locations

- At unsignalized locations, pedestrians who are blind typically wait for 'all quiet' or a large gap in traffic to cross. When using hearing to detect gaps in traffic, the pedestrian must wait for all traffic in the area to clear, since the sound of a loud car travelling away from the person may mask the sound of a quieter car approaching. Other traffic nearby, such as traffic in the circulating roadway of a roundabout, or through traffic near a channelized right turn lane, may prevent the pedestrian who is blind from crossing in traffic gaps that would be adequate for sighted pedestrians to use.

Signs, directional info, etc.

- Many individuals who are visually impaired cannot use signs in the public rights of way environment. Legibility can be enhanced by good contrast, closer viewing distance and larger print.

Cognitive impairments

Cognition

Cognition is the ability to perceive, recognize, understand, interpret, and respond to information. It relies on complex processes such as thinking, knowing, memory, learning, and recognition. Cognitive disabilities can hinder the ability to think, learn, respond, and perform coordinated motor skills.

People with cognitive disabilities may have limited processing and decision-making skills.

There are many causes of cognitive disabilities. Some persons are born with developmental disabilities, learning disabilities or mental retardation. Others experience traumatic brain injury or stroke. Others have processing and memory problems caused by a variety of medical conditions.

Symptoms

Some persons with cognitive disabilities may experience

- additional processing time needed for decision making
- a narrowed attentional field, such that it is difficult to simultaneously attend to traffic coming from multiple directions
- difficulty in making judgments based on multiple cues
- apprehension in noisy environments and at busy intersections
- distractibility and inability to ignore 'off task' cues such as barking dogs, road construction and young children

Issues

Walking speed has been shown to decrease with the presence of cognitive or depressive disabilities (Woo, Ho, Lau, Chan, and Yuen, 1995).

People with cognitive disabilities also might also have difficulty navigating through complex environments such as city streets and might become lost more easily than other people.

People with cognitive disabilities benefit from:

- Straight forward, direct environments
- Uncomplicated street crossings
- Easy to understand symbols
- Redundant signage:
 - Multiple formats help pedestrians assimilate the information by multiple senses
 - Increases the likelihood that all users, including people with visual and cognitive impairments, will make informed, safe travelling decisions
- Consistent placement which enables people with low vision and cognitive impairments to locate the sign
- High legibility with a consistent format which may enable people with both low vision and cognitive impairments to utilize the information.

In some instances, an accessible pedestrian signal may assist a pedestrian with a cognitive disability as it provides redundant information in a nonvisual format. Persons who function best by using auditory information may benefit from the information provided by an APS.

Design approaches for people with cognitive impairments also might benefit children and more than 20 percent of American adults who do not read English (Designing Sidewalks and Trails for Access, Part 1.)

Overview of the Guidelines and their application to alterations

New construction

The Americans with Disabilities Act of 1990 (the ADA) and its implementing regulations require public facilities constructed after January 26, 1992 to be readily accessible to and usable by individuals with disabilities.

For purposes of the Act, a facility includes all or any portion of structures, equipment, roads, walks and passageways, as well as real or personal property on which the structure, or equipment is located.

Alterations

Each alteration of a facility must be done in such a manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities, to the maximum extent feasible. An alteration is any change that affects or could affect the usability of the facility.

The ADA Accessibility Guidelines (ADAAG), adopted as design standards for titles II (State and local governments) and III (private sector entities) of the ADA requires that where existing elements or spaces are altered, each altered element, space, or common area altered shall comply with the applicable provisions of ADAAG 4.1.1 to 4.1.3, Minimum Requirements for New Construction.

This means that if an element or space in the right-of-way is altered, rehabilitated, or reconstructed, engineers must look to the guidelines for new construction as their design goal. ADAAG 4.1.6(1)(j) provides that, if compliance with new construction standards is technically infeasible, then the alteration project must provide accessibility to the maximum extent feasible.

The Department of Justice title II regulation includes an additional mandate at 35.151(e) that requires the installation of curb ramps at new intersections or where pedestrian intersections with the street are altered. The 1993 Kinney vs Yerusolim case found that resurfacing was an alteration requiring the installation of curb ramps at existing pedestrian crossings on the roadway.

ADAAG Compliance

Every alteration project will need to look first to the new construction guidelines in ADAAG as the design objective. When existing conditions affect the feasibility of achieving full compliance with ADAAG, the

designer must then determine, on an element-by-element basis, what degree of compliance can reasonably be achieved.

Technically Infeasible

ADA standards provide some latitude when making alterations that cannot meet new construction standards because of existing conditions or development outside the scope of a project. This flexibility is described by the concept of "technically infeasible".

ADAAG defines it as follows:

Technically Infeasible: Means, with respect to an alteration of a building or a facility, that it **has little likelihood of being accomplished** because existing structural conditions would require removing or altering a load bearing member which is an essential part of the structural frame; or **because other existing physical or site constraints prohibit modification or addition** of elements, spaces, or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility'. (ADAAG 4.1.6(1)(j), emphasis added).

The 'technically infeasible' concept recognizes that existing physical improvements, structure, and other constraints can affect the designer's ability to fully incorporate elements, spaces, and features in full and strict compliance with the minimum requirements for new construction.

Examples of technical infeasibility

Examples of technical infeasibility in the building environment (for which ADAAG was developed) are provided in both the ADAAG text and its preamble (the explanatory text that is published with a new regulation). They include such limiting factors as:

- existing construction (a slightly narrower door opening may remain)
- code-required plumbing fixture count or location of existing piping (a smaller stall or bathroom may be provided)
- too-small elevator shafts (a smaller car is permitted)
- and space limitations (a steeper ramp may be installed)

Although structural frame concepts are not easily applied to the public right-of-way, the rights-of-way designer will find useful guidance in the text references to 'existing physical or site constraints that prohibit modification or addition of elements, spaces, or features which are in full and strict compliance'. Accessibility improvements that are technically infeasible are those that have 'little likelihood of being accomplished' within the scope of the project because of these constraints. Key to the justification of technical infeasibility is thus the relationship of the planned alteration to those existing constraints. A finding of technical infeasibility based upon existing constraints that are not planned for change within the scope of the particular project forms the basis for the application of engineering judgment to determine the maximum accessibility it's feasible to achieve within the particular project. Of course, if a project scope is expanded to include 'opportunity' improvements such as signal upgrades, modernization, or safety improvements, the accessibility mandate must be expanded as well to coincide with the new project parameters.

Regardless of the situation, it is important to remember that every situation must be viewed on a case-by-case (and even an element-by-element) basis. What is possible or not possible in one location or scope of work may not apply to a different location and will depend on a wide range of factors.

Lead Subject Matter Expert/ O&M Expert

Janet M. Barlow

Janet M. Barlow is a certified Orientation and Mobility Specialist and has been involved in teaching independent travel skills to individuals who are blind or visually impaired for over 30 years.

Since 1992, she has been involved in the issues of access, particularly the effects of intersection design and actuation on the independent travel of pedestrians who are blind or visually impaired. She is a research

associate on several national research projects on accessible pedestrian signals and is lead author of *Accessible Pedestrian Signals: Synthesis and Guide to Best Practice*.

Janet is chair of the Environmental Access Committee of the Orientation and Mobility Division of the Association for Education and Rehabilitation of the Blind and Visually Impaired and serves on the U.S. Access Board's Public Rights-of-Way Access Advisory Committee (PROWAAC).

She was an instructor for the Institute of Transportation Engineers' course 'Designing and Operating Intersections to Meet the Needs of All Users', and assisted in the development of the Federal Highway Administration course, 'Designing Pedestrian Facilities for Accessibility'.

Standard ITE Metric Conversions

During the service life of this document, use of the metric system in the United States is expected to expand. The following common factors represent the appropriate magnitude of conversion. This is because the quantities given in U.S. Customary units in the text, tables or figures, represent a precision level that in practice typically does not exceed two significant figures. In making conversions, it is important to not falsely imply a greater accuracy in the product than existed in the original dimension or quantity. However, certain applications such as surveying, structures, curve offset calculations, and so forth, may require great precision. Conversions for such purposes are given in parentheses.

Length

1 inch = 25 mm (millimeters—25.4)

1 inch = 2.5 cm (centimeters—2.54)

1 foot = 0.3 m (meters—0.3048)

1 yard = 0.91 m (0.914)

1 mile = 1.6 km (kilometers—1.61)

Volume

1 cubic inch = 16 cm³ (16.39)

1 cubic foot = 0.028 m³ (0.02831)

1 cubic yard = 0.77 m³ (0.7645)

1 quart = 0.95 L (liter—0.9463)

1 gallon = 3.8 L (3.785)

Speed

foot/sec. = 0.3 m/s (0.3048)

miles/hour = 1.6 km/h (1.609)

Temperature

To convert °F (Fahrenheit) to °C (Celsius), subtract 32 and divide by 1.8.

Area

1 square inch = 6.5 cm² (6.452)

1 square foot = 0.09 m² (0.0929)

1 square yard = 0.84 m² (0.836)

1 acre = 0.4 ha (hectares—0.405)

Mass

1 ounce = 28 gm (gram—28.34)

1 pound = 0.45 kg (kilograms—0.454)

1 ton = 900 kg (907)

Light

1 footcandle = 11 lux (lumens per m²—10.8)

1 footlambert = 3.4 cd/m² (candelas per m²—3.426)

For other units refer to the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA, *Standard for Metric Practices E 380*.

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