2. Existing Conditions

2.1 Historic Development Patterns

Nassau County, then part of Queens County, was first settled in the early 1600s by colonists from Connecticut. At the center of Nassau County was an area known as the Hempstead Plains, one of the few natural prairies east of the Allegheny Mountains. Remnants of the prairie remain in the Hempstead Plains Preserve and parts of Eisenhower Park. In the early years, settlers established agricultural and fishing communities. One of the oldest commercial centers is the Village of Hempstead in the southwest corner of the Study Area. Other colonial era settlements include the Village of Mineola and the Village of Westbury. The agricultural towns grew slowly through the early 1700s. By the late 1800s, Long Island supplied the Greater New York City area with farm products and was known as a resort area for wealthy New Yorkers. Also by this time, the basic road network that serves the area was in place. This included the 'hub and spoke' road network that is centered on the Village of Hempstead, with Old Country Road in the north and Hempstead Turnpike in the south.

In 1834, the Long Island Rail Road Company (LIRR) was chartered to create a connection from New York City to Boston. Due to the difficult terrain across southern Connecticut, the connection was to be via rail to Greenport on Long Island's North Fork and then by ferry to Stonington, Connecticut, where passengers would continue to Boston by rail. Since its plan was to serve long distance transportation, the LIRR did not initially serve existing communities along the shores of Long Island, but rather ran through the middle portion of the Island. In 1850, a rail route through Connecticut was constructed and the new rail line siphoned off passengers from the Long Island route. LIRR soon changed its emphasis to local service and constructed branches off its main line to connect to existing shoreline villages to increase ridership. By the late 1860s, other railroad companies built their own routes to fill voids within the system, many of which were later sold or leased to the LIRR. Many of these original rail stations are at the heart of Nassau County's traditional downtowns including the Village of Mineola, the Village of Westbury, the Village of Garden City and the Village of Hempstead in the Study Area and Hicksville, the Village of Rockville Center, the Village of Freeport and Merrick in the Regional Study Area. Train service was supplemented at first by private trolley lines, and later by private bus lines. In 1973, the remaining 11 private bus lines were consolidated as part of Nassau County's takeover of the system.

The most significant increase in Nassau County's population occurred after World War II when returning veterans moved to Long Island and started families. This growth was supported by the earlier development of Long Island's network of parkways that was first constructed in the 1920s and 1930s to provide access to the Island's natural and scenic beauty. They included the Meadowbrook State Parkway (MSP) within the Study Area and the Northern State Parkway and Wantagh and Southern State Parkways in the Regional Study Area. The full parkway system in the Study Area was not completed until 1956 when, with the closing of Mitchel Field, the last section of the MSP was constructed through the former military base. In the late 1950s, the portion of the Long Island Expressway just north of the Regional Study Area was constructed, thereby strengthening connections to New York City. Development followed the parkways and highways, and Long Island began its transformation as the paradigm of America's suburbs. Perhaps the best known of these new post-war suburbs is Levittown, located in the eastern portion of the Regional Study Area. In May of 1947, Levitt and Sons announced their plan to build 2,000 mass-produced homes. Demand was so great that they announced plans for an additional 4,000 houses. The auto-oriented community had its own schools, shopping centers, playgrounds, and community center. The impact of Levittown was so significant that, in 1950, William Levitt was featured on the cover of

Time magazine. Just a year later, Levitt and Sons had constructed close to 17,500 homes in Levittown and the surrounding areas.[1]

This development pattern predominated and led to Nassau County's status throughout the mid- to late-1900s as a bedroom suburb of New York City. The population doubled in 10 years, from 1950 to 1960, increasing from 672,000 to 1,300,700, reaching a peak of 1,428,838 in 1970. As suburban development and the reliance upon the automobile for transportation increased following World War II, the parkways, which had been designed for a different era, came under increasing pressure from commuter-related and other general increases in traffic.

Historically, the Study Area developed in a piecemeal fashion that encouraged low-density sprawl and the use of private automobiles. When capacity improvements were needed, the typical solution was to widen the travel ways and/or add lanes, which likewise encouraged the use of private automobiles. Transportation has always driven the development pattern and, today, Nassau County is served by a multitude of transportation systems designed to serve earlier eras: a local road network laid out in colonial times, a rail system first laid out in the 1800s, remnants of private bus networks, a parkway system first planned over 75 years ago, and an expressway designed for earlier generations.

2.2 Land Use

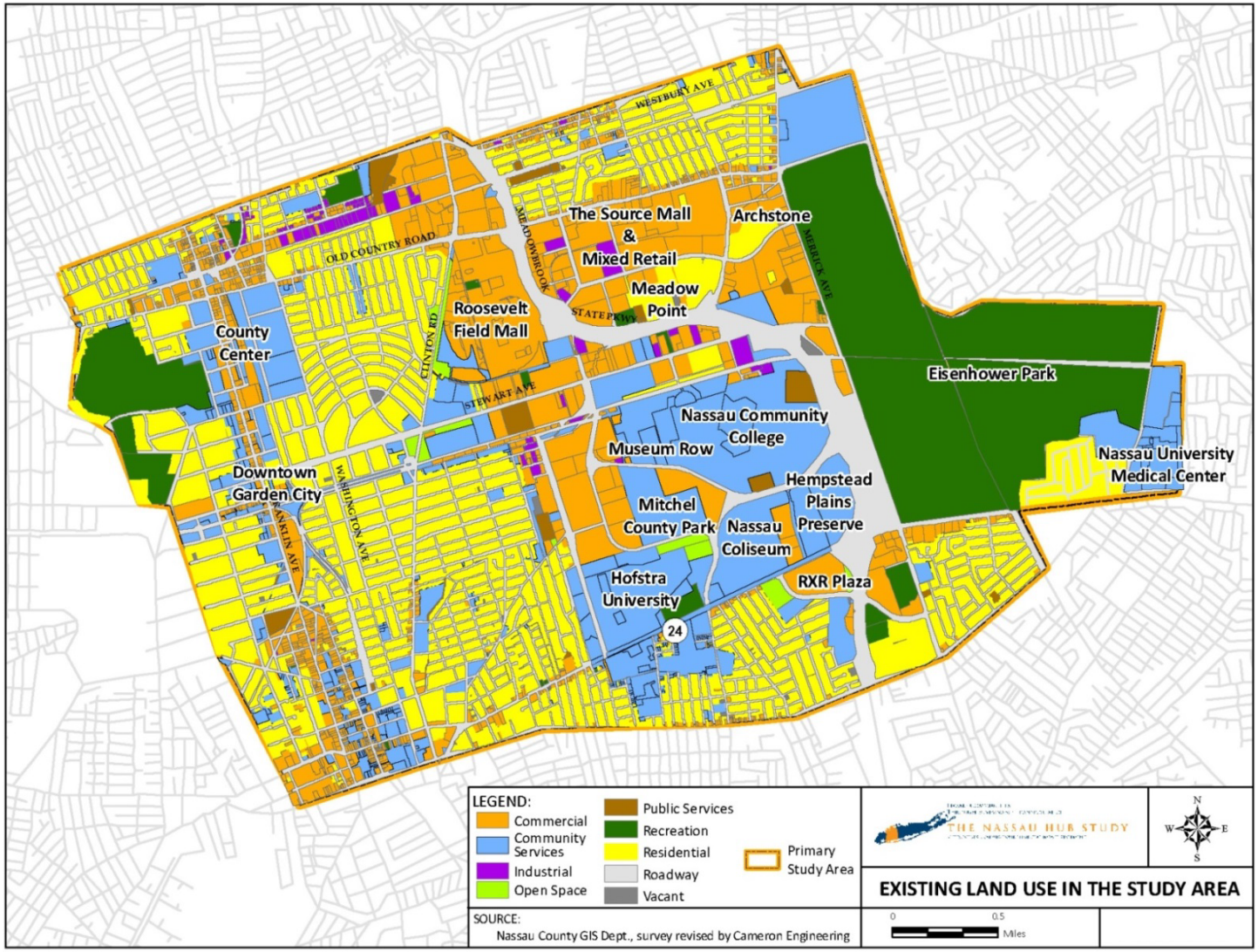
The Study Area comprises the largest concentration of commercial uses within Nassau County, including two regional malls, numerous office complexes and a wide variety of shops, restaurants and service establishments. And, with its equally expansive and diverse collection of community services, the Study Area easily establishes itself as Nassau County's heart of commercial, cultural, educational and governmental activities.

Figure 2-1 locates several of the major activity centers within the Study Area. These include significant cultural, educational, medical and recreational destinations such as the Nassau Veterans Memorial Coliseum, Mitchel County Park, Museum Row, Eisenhower Park, Hofstra University, Nassau Community College, Nassau University Medical Center and Winthrop University Hospital. The locations of the Study Area's two regional malls, Roosevelt Field and the Source Mall, are also shown on Figure 2-1.

The downtown cores of the Villages of Westbury, Hempstead, Garden City and Mineola and the Hamlet of Carle Place are also significant commercial centers that support a variety of local stores, offices and service establishments. The Nassau County Government Complex, situated in the northwestern quadrant of the Study Area, includes the County courts and the offices for many of the County's departments and bureaus. Figure 2-1 and Table 2-1 show that the Study Area also contains large residential areas, particularly in the central western, northeast and southeast portions of the Study Area.

[1] Levittown Historical Society. *Levittown History*. http://www.levittownhistoricalsociety.org/history.htm (August 25, 2010)

Figure 2-1: Existing Land Use in the Study Area



Source: Jacobs, 2011.

Table 2-1: Existing Land Use Summary for the Study Area

Land Use	Description	Acreage	Percent of Study Area
Residential	Areas used for housing	1,941	26.0%
Roadways	Areas for highways, collectors and local roads	1,476	19.8%
Community Services	Areas used for educational, health, cultural and government services	1,384	18.5%
Commercial	Areas used for offices, retail, services and other commercial uses	1,330	17.8%
Recreation/ Parks	Areas used for recreation uses (parks, playgrounds, golf courses, etc.)	1,131	15.1%
Public Services	Areas for electrical, water and other utilities	70	0.9%
Industrial	Areas for used for manufacturing	69	0.9%
Conservation	Areas used for nature preserves	45	0.6%
Vacant	Areas of unused land	19	0.3%

Source: Nassau County GIS updated with 2010 field surveys conducted as part of this Study.
Note: Due to rounding, figures may not total 100 percent.

Table 2-1 provides a summary of the percent coverage of land use by type within the approximately 11.7 square-mile Study Area. Approximately 36 percent of the land is dedicated to commercial and community services, which account for 17.8 percent and 18.5 percent of the land use, respectively. Residential uses occupy 1,941 acres or approximately 26 percent of the total land area. Parks and other recreational uses account for another significant land use, occupying about 1,131 acres or 15.1 percent of the total. Much of this is the 930-acre Eisenhower Park, which includes an aquatic center, golf courses, athletic fields, tennis courts, picnic areas, playgrounds, and fitness trails. The remaining land (i.e., 2.7 percent of the total) comprises industrial, public services, vacant and conservation uses.

The Study Area also supports large office parks including the Nassau West Corporate Center (1.1 million square feet) just west of Mitchel Field and the RXR Plaza (1.1 million square feet), which is adjacent to the Nassau Veterans Memorial Coliseum. As listed in Table 2-2, there are 11 other office buildings and corporate parks that are larger than 200,000 square feet. These large complexes account for over 5.3 million square feet of office space; there are also numerous other office buildings and complexes within the Study Area.

The Study Area contains an extensive supply of off-street parking, which represents a significant land use feature of the area (Table 2-3). Much of this supply, approximately 25 percent, consists of surface parking dedicated to seasonal or event use, which is not needed to meet regular demand. The majority of the identified surface parking in the Study Area is associated with various retail uses (e.g., Roosevelt Field, the Source Mall) and Nassau Veterans Memorial Coliseum. Parking for these uses is typically defined for a peak-demand period and, in the case of Nassau Veterans Memorial Coliseum, for a limited number of events. In all, the Study Area contains over 600 acres (approximately 75,000 spaces) of parking, which represents approximately 9 percent of the total land cover of the Study Area. The inability to share these parking facilities during varying peak demands requires additional travel between uses without the ability to link trips.

Table 2-2: Office Buildings Larger than 200,000 Square Feet in the Study Area

Office Buildings	Square Feet
RXR Plaza	1,100,000
Nassau West Corporate Center	1,064,932
100-400 Garden City Plaza	573,000
Franklin Avenue Plaza	464,785
711 Stewart Avenue	300,000
One Old Country Road	269,000
The Pavilion	259,874
90 Merrick Avenue	234,202
Atria West	233,000
Imperial Square	230,000
60 Charles Lindbergh Blvd	219,066
Eisenhower Atrium Center	220,000
Atria East	203,000
Total	**5,370,859**

Source: Long Island Business News 2010 Book of Lists.
Note: Names and data for the office buildings and corporate parks listed in Table 2-2 were compiled in 2010; Table 2-2 does not reflect any changes that may have occurred since the 2010 data collection effort.

Table 2-3: Existing Surface Parking in the Study Area

Subarea	Surface Parking in Square Feet
Mineola/County Center	1,825,600
Garden City	1,931,200
Hempstead	2,283,300
Nassau Veterans Memorial Coliseum	5,120,200
Mitchel Field	2,773,400
Roosevelt Field	3,854,800
Carle Place	2,065,500
Source Mall / Westbury Plaza Vicinity	6,750,100
Totals	**26,604,100**

Source: Jacobs, 2010.

Parking usage is difficult to quantify as it varies greatly based on a number of variables including time of day, season, and use. Given these conditions, parking acreage has the potential with improved transit and reduced parking requirements to be redeveloped for more productive uses. With transit-supportive zoning, there is an opportunity in the Study Area for future transit-oriented developments that combine retail, commercial and housing uses.

The Study Area is undergoing many changes, in terms of both future planning initiatives and recent and proposed developments that will significantly affect its future. Developments completed in the Study Area in recent years include the LIRR's Mineola Intermodal Center, higher-density residential developments (such as Archstone Meadowbrook Crossing and Meadowbrook Pointe on Corporate Drive in the Roosevelt Raceway area), the Nassau County Firefighters Museum along Museum Row, decommissioning of some County offices on County Seat Drive (with possible redevelopment as residences) and the relocation of the Nassau County Department of Health and Human Services to County Seat Drive.

There are a number of development initiatives in varying stages of the planning process that are currently underway in and near the Study Area that will further change the character of the Study Area. These trends and initiatives are discussed in Chapter 7.

2.3 Socioeconomic Conditions and Trends

2.3.1 Population

Based on data from the 2010 U.S. Census, the 2010 population of the Study Area was recorded as 122,223 persons (Table 2-4).[2] The Study Area population represents approximately 9.2 percent of Nassau County's total population of 1,332,947. Based on data obtained from the New York Metropolitan Transportation Council's (NYMTC) Best Practice Model (BPM),[3] population in the Study Area is projected to slowly but steadily increase between 2010 and 2035 by over 14,000 persons (11.9 percent) to 136,204 persons. This trend is slightly higher than the County's projected population increase of 10.9 percent by 2035.

Table 2-4: Existing Population and Projected Population Change 2010 – 2035

Year	Study Area		Nassau County	
	Population	Percentage Change	Population	Percentage Change
2010	122,223	-	1,332,947	-
2020	125,452	3.0%	1,334,724	1.4%
2030	132,936	6.0%	1,421,877	6.5%
2035	136,204	2.5%	1,459,969	2.7%
Change 2010 - 2035	14,544	11.9%	145,291	10.9%

Source: U.S Census Bureau 2010; NYMTC, BPM 2035 Forecast Series, based on 2005 base population and employment data.

Historically, Nassau County experienced tremendous population growth from the end of World War II through the 1960s. The County's population doubled in the 10 years from 1950 to 1960, increasing from 672,000 to 1,300,700, before reaching a peak of 1,428,838 residents in 1970.[4] Subsequently, between 1970 and 2005, the County experienced a population decline of approximately 90,000 residents.[5]

As evidenced by the historic population trends, Nassau County experienced enormous population growth and corresponding suburban development considerably earlier than did many of the other suburban counties in the region. As a result, since it is an already mature suburban county, Nassau is anticipated to gain residents only gradually through 2035. Factors contributing to this gradual but slow population growth include projected increases in the County's elderly population as well as an out-migration of young adults between the ages of 20 and 34.

Net migration forecasts by age cohort through 2030 for Nassau County are provided in Table 2-5. Totals in parentheses represent declines indicating an out-migration, or people moving away from Nassau. Numbers without parentheses represent growth indicating an in-migration to the County. Net migration trends from 2010 through 2020 project individuals moving from the County, albeit at lower rates than in previous years (2000 to 2005). However, from 2020 through 2030, this out-migration is anticipated to

[2] The information presented in this section was prepared in 2010, prior to the adoption and release of NYMTC's Plan 2040.

[3] The BPM predicts changes in future travel patterns in response to changes in demographic profiles and transportation systems within the NYMTC region. NYMTC socioeconomic forecasts for Nassau County are based on national economic projections, historic economic and demographic data for the region, and input from the Nassau County Department of Public Works/Planning Division. These forecasts are incorporated into the model and used, in part, to predict future travel characteristics. More specifically, employment forecasts help to project whether a region is generating or losing jobs, thereby influencing travel patterns in a region. Population forecasts provide information regarding travel habits and help to identify potential transportation investments that can improve the mobility of a population. Demographic and socioeconomic forecasts through 2035 were adopted on September 24, 2009, as part of the 2010-2035 Regional Transportation Plan.

[4] Nassau County. *History of Nassau County.* https://www.nassaucountyny.gov/website/EN/facts_stats_maps/history_of_NC.html (August 25, 2010).

[5] Nassau County 2010 Draft Master Plan. Chapter 1. p. 1-1.

reverse as a result of greater numbers of people moving into the County. Table 2-5 shows that over the next 20 years more adults aged 30 to 44 and children aged 5 to 14 will enter the County than leave it.[6] This population growth includes an increase in families as the Millennial generation, defined as persons born in the 1980s and 1990s, begins having children and establishing families within the County. Additionally, more senior citizens aged 75 to 79 will enter Nassau than leave.

Table 2-5: Nassau County Net Migration by Age, 2000 – 2030

Age	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030
Under 5	(5,707)	(1,421)	(1,533)	(1,665)	(1,765)	(1,964)
5 - 9	(876)	6,901	7,272	7,936	8,462	9,166
10 – 14	(942)	4,743	5,971	6,576	7,276	7,803
15 – 19	(2,024)	(2,895)	(2,110)	(461)	1,359	2,101
20 – 24	(6,203)	(10,253)	(9,462)	(9,460)	(5,855)	(3,699)
25 – 29	(6,314)	(4,017)	(4,762)	(4,738)	(1,623)	(536)
30 – 34	(113)	5,668	5,528	4,680	7,565	7,313
35 – 39	889	10,056	10,052	9,958	12,472	12,600
40 – 44	1,086	4,321	4,107	3,232	5,187	5,012
45 – 49	1,549	(2,282)	(2,595)	(2,817)	(222)	(1,166)
50 – 54	435	1,536	885	(395)	2,117	1,759
55 – 59	789	(3,487)	(4,580)	(5,549)	(2,213)	(1,882)
60 – 64	(145)	(5,320)	(6,430)	(8,386)	(4,955)	(4,409)
65 – 69	(3,581)	(4,481)	(5,373)	(5,386)	(5,740)	(5,321)
70 – 74	(3,483)	(663)	(747)	(841)	(818)	(794)
75 – 79	(584)	1,122	1,197	1,483	1,931	2,040
80 – 84	(846)	(415)	(347)	(336)	(392)	(451)
85 & Over	(5,219)	(4,697)	(5,244)	(5,201)	(5,282)	(5,900)
Total	(31,288)	(5,584)	(8,172)	(11,370)	17,504	21,672

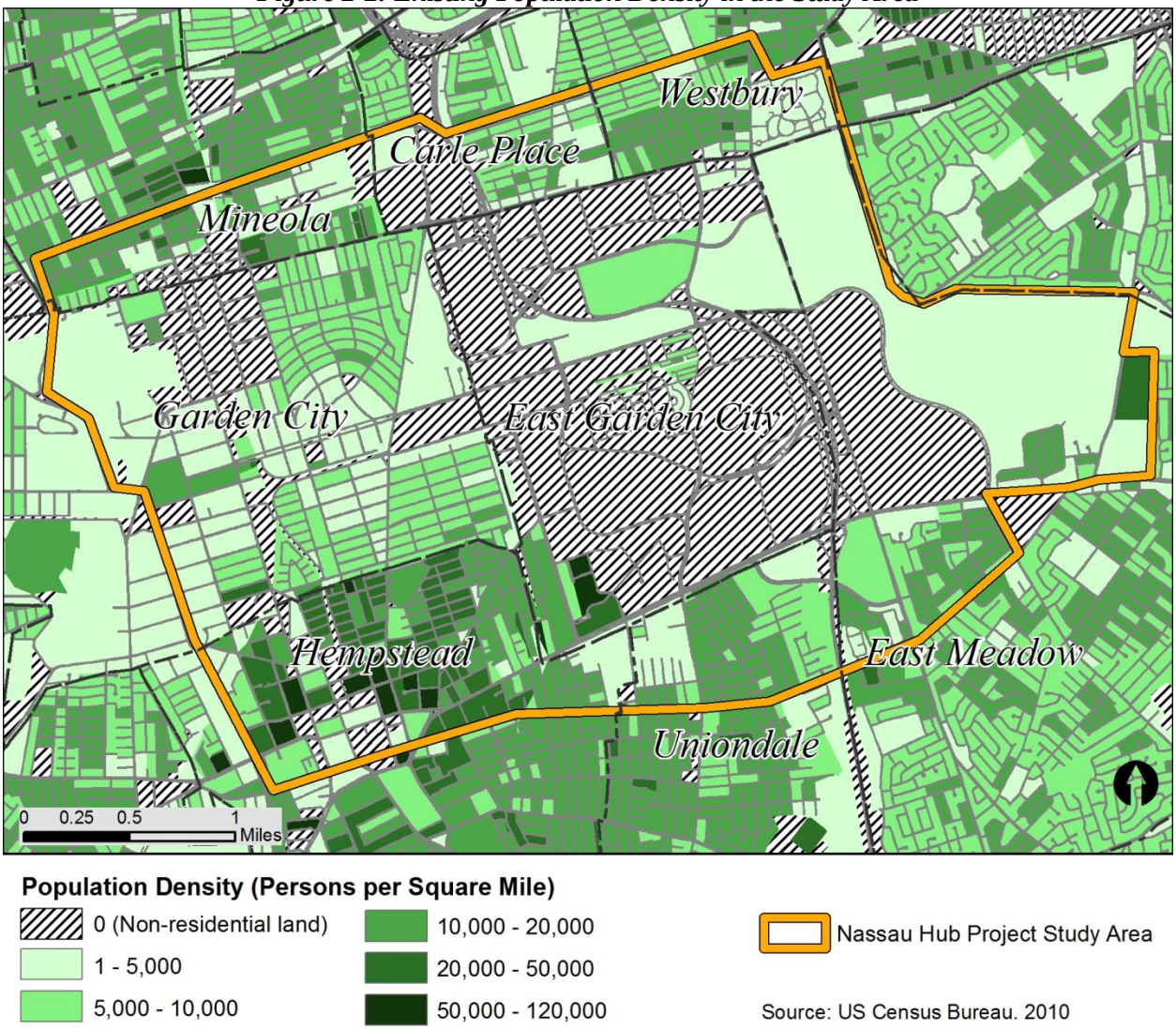
Source: Nassau County 2010 Draft Master Plan

2.3.2 Population Density

Population density (Figure 2-2) varies across the Study Area. There are low density (i.e., less than 5,000 to 10,000 persons per square mile) suburban settings in the Village of Garden City and moderate density (i.e., 10,000 to 20,000 persons per square mile) settings within the hamlets of Carle Place, East Meadow and Uniondale. Higher densities (i.e., 20,000 to 50,000 persons per square mile), such as those characteristic of urbanized areas within small cities, are found within the older downtowns of the Village of Mineola, in particular around the LIRR train station, the Village of Westbury and around the downtown area of the Village of Hempstead. Several blocks within downtown Village of Hempstead, which contain multi-story apartment complexes, have population densities in excess of 50,000 persons per square mile. The East Garden City Census Designated Place (CDP), with the exception of condominium and apartment complexes north of the MSP and residences north and south of Eisenhower Park, is primarily non-residential in character and with low-density population.

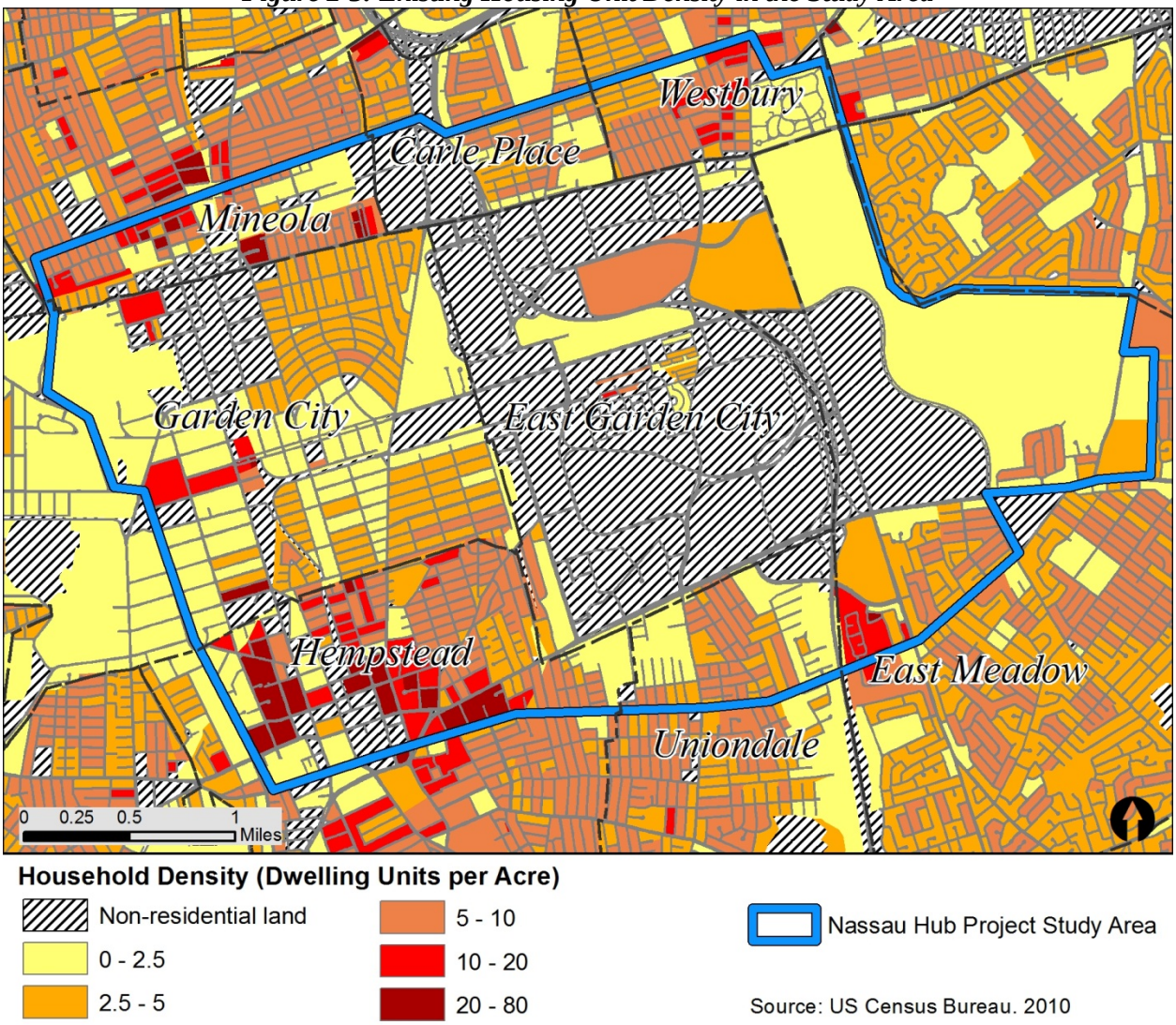
[6] Nassau County 2010 Draft Master Plan. Chapter 1, p. 1-7.

Figure 2-2: Existing Population Density in the Study Area



Nassau County (as a whole) is more densely populated than are other suburban counties in New York State, such as Suffolk, Westchester, and Rockland counties. While Suffolk County has a slightly higher total population than does Nassau County, the population density of Nassau County is higher because it contains significantly less land than does Suffolk County. Population density is generally consistent with – or is driven by – housing unit density within the Study Area (Figure 2-3). The highest housing unit densities, which range from 20 to 80 units per acre, are located primarily within the downtown core of the Village of Hempstead and also around the LIRR train station in the Village of Mineola; these areas are, also, the most densely populated locations within the Study Area. Several blocks within the downtown of the Village of Westbury support moderate-to-high housing unit densities consistent with its moderate population density, compared with the rest of the Study Area. With the exception of the East Garden City CDP, the Village of Garden City, which generally comprises suburban neighborhoods of less than 5 units per acre, is the least densely populated portion of the Study Area.

Figure 2-3: Existing Housing Unit Density in the Study Area



2.3.3 Employment

Employment data illustrate where jobs are concentrated, which is a useful consideration in planning for transportation improvements. As shown in Table 2-6, there are currently nearly 124,000 jobs in the Study Area with retail- and office-based employment accounting for the largest segments of employment. These segments are roughly equal in size with retail-based and office-based employment, comprising approximately 35 and 33 percent, respectively, of total employment within the Study Area. The Nassau University Medical Center is also a sizeable employer with approximately 3,400 employees in its system (see Section 2.3.4 for healthcare employment data).[7] The high concentration of employment in the Study Area is due to activity centers (i.e., malls and offices) principally in Roosevelt Field and Mitchel Field. Commercial uses comprise approximately 18 percent of land use within the Study Area (Table 2-1). The Study Area houses several major office complexes including RXR Plaza, the Omni at 333 Earle Ovington

[7] NuHealth. *Raising the Bar*. http://www.numc.edu/raisingthebar.asp (August 25, 2010).

Boulevard, and office buildings located at 50, 55, and 60 Charles Lindbergh Boulevard. Additionally, the County Government Complex in the Village of Mineola and office complex along Franklin Avenue in the Village of Garden City are significant office concentrations in the Study Area. Roosevelt Field and the Source Mall represent major retail activity centers.

Table 2-6: Existing Study Area Employment and Projected Employment Change 2010 -2035

Year	Total Employment		Retail-Based Employment		Office-Based Employment	
	Number	% change	Number	% change	Number	% change
2010	123,990	-	43,336	-	41,799	-
2020	127,247	2.6%	44,273	2.2%	43,233	3.4%
2030	131,167	3.1%	45,638	3.1%	44,565	3.1%
2035	134,364	2.4%	46,755	2.4%	45,655	2.4%
Change 2010 – 2035	10,374	8.4%	3,419	7.9%	3,856	9.2%

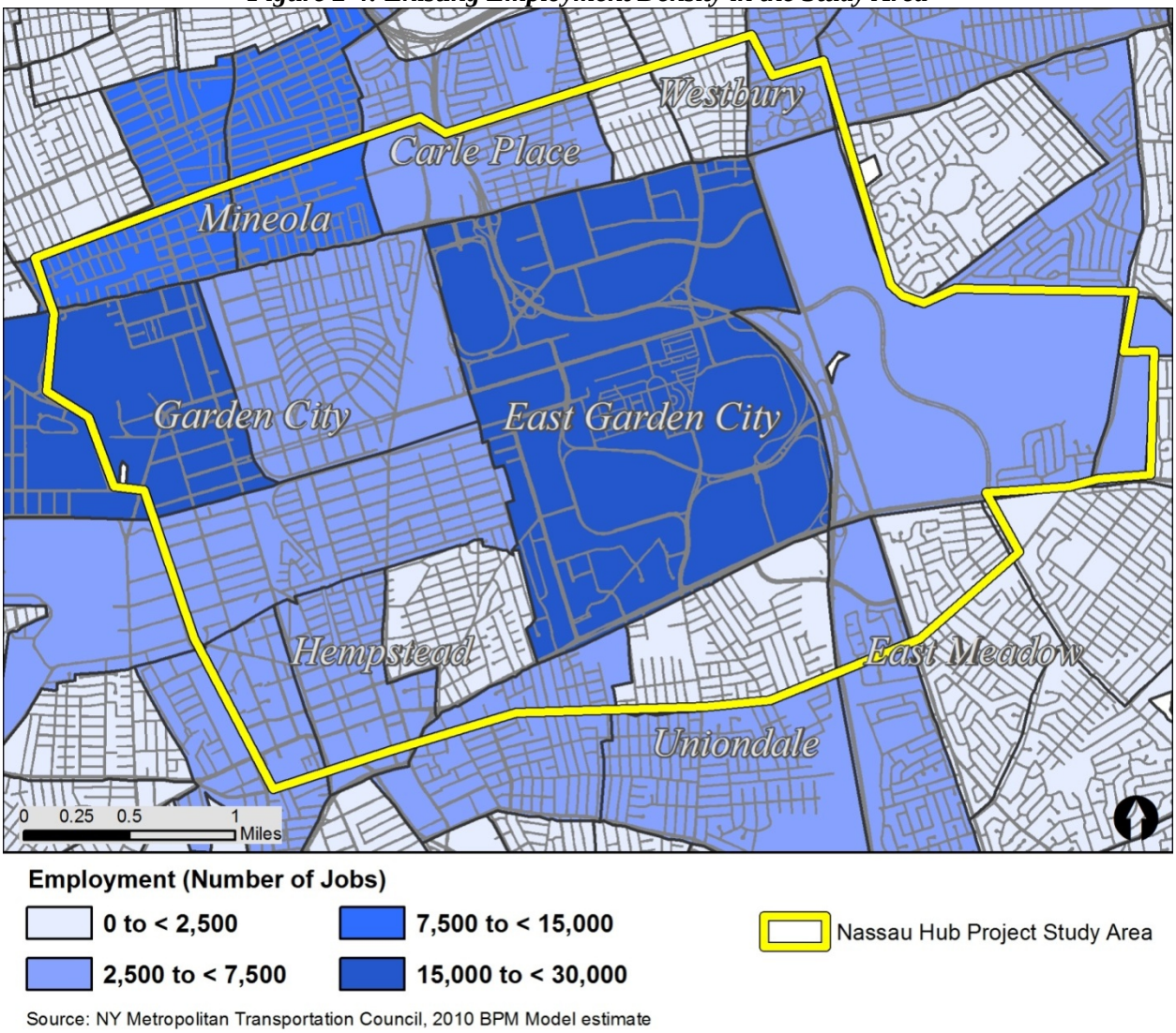
Source: NYMTC, BPM 2035 Forecast Series, based on 2005 base population and employment data.

Overall employment in the Study Area, based on County-wide forecasts, is anticipated to increase by more than 10,000 jobs (8.4 percent) between 2010 and 2035.[8] Both retail- and office-based employment is projected to grow during this period. Overall, office-based employment is anticipated to grow by more than 9 percent with retail employment increasing by more than 8 percent. By comparison, employment growth throughout the region is projected to be significantly higher than in Nassau County between 2010 and 2035. During this time period, employment in Suffolk County is anticipated to increase by approximately 23 percent, while employment in Rockland and Westchester Counties is projected to grow by 27 percent and 26 percent, respectively.[9]

Employment density tends to be heavily concentrated within certain areas (Figure 2-4) of the Study Area rather than being evenly distributed; these areas include the Village of Mineola, in particular around the LIRR train station, and the western portions of the East Garden City CDP and the Village of Garden City, which are primarily non-residential in character. The western half of the East Garden City CDP, which supports a number of large uses, including the Source Mall, Roosevelt Field and Nassau Community College, is estimated to support over 26,000 jobs. The northwestern portion of the Village of Garden City has over 15,000 jobs, a substantial portion of which serve the Nassau County Government Complex. There are approximately 11,000 people employed within the Village of Mineola. The remaining portions of the Study Area, including the Hamlet of Carle Place, the Village of Westbury and the Village of Hempstead, are characterized by a mix of residential and non-residential uses; employment is substantial but less heavily concentrated in these areas, compared with the East Garden City CDP, the Village of Mineola and the western portion of the Village of Garden City.

[8] NYMTC. *2010-2035 NYMTC Regional Transportation Plan.* Chapter 2, Table 2.2, p. 2-9. September 2009.
[9] NYMTC. *2010-2035 NYMTC Regional Transportation Plan*. Chapter 2, Table 2.2, p. 2-9. September 2009.

Figure 2-4: Existing Employment Density in the Study Area



2.3.4 Healthcare and Education

Nassau County has developed a market for educational and medical institutions and services, which represent the fastest growing sectors of the County's economy, employing over 100,000 individuals as of 2006.[10] These institutions are a significant presence within Nassau County and the Study Area itself. As described above, Nassau University Medical Center, a major employer within the Study Area, is anticipated to develop a mix of new healthcare facilities, medical offices and affordable housing within the Study Area as part of its capital investment program. In 2009, the Nassau University Medical Center provided inpatient care to approximately 23,000 patients.[11] Located in the Village of Mineola, the nearly

[10] Nassau County 2010 Draft Master Plan. Chapter 2, p. 2-30.
[11] NuHealth. *Raising the Bar*. http://www.numc.edu/raisingthebar.asp (October 4, 2010).

600-bed Winthrop-University Hospital is within walking distance of the LIRR Mineola Station. The hospital employs 6,000 staff and, in 2009, provided inpatient care to more than 33,000 patients.[12]

Nassau County is home to 11 colleges and universities with a combined total enrollment of over 78,000 students. Two institutions, Hofstra University and Nassau Community College (NCC), are located within the Study Area. Hofstra University has a total enrollment of approximately 12,000, while approximately 22,000 full- and part-time students and 15,000 continuing and professional education students are enrolled at NCC. Hofstra University has 1,830 employees[13] and NCC has 2,242 employees.[14]

Major medical facilities often collaborate with academic institutions. This cooperation is exemplified by the North Shore-Long Island Jewish Hospital (beyond the Study Area limits), which plans construction of a medical school and dormitories on the Hofstra Campus. In addition, Adelphi University, with a total enrollment of approximately 8,000 students, is located in the Village of Garden City, just west of the Study Area.[15] This academic institution is the fourth largest nursing school in the nation and offers clinical service support for the Nassau University Medical Center.

2.3.5 Commercial Development

In September 2009, an analysis of commercial and residential growth was conducted to estimate the distribution of commercial and residential growth for the Study Area and 18 selected downtowns within the County through 2030. [16] This study, conducted by Urbanomics on behalf of Nassau County and titled *20 Year Downtown Growth Allocation*, estimated that approximately 22.5 percent of the 19.2 million square feet of commercial development projected for all of Nassau County would occur in the Study Area with the remainder dispersed among 18 downtowns, at large-scale redevelopment projects and in other County-wide development. The analysis contained within the *20 Year Downtown Growth Allocation* was based on the maximum build-out scenario developed from the *Nassau Hub Major Investment Study and* adjusted to incorporate input from County planning staff. While the distribution of potential future development may change, the study reinforces the importance of the Study Area as a central focus for development in Nassau County.

2.4 Transportation Network

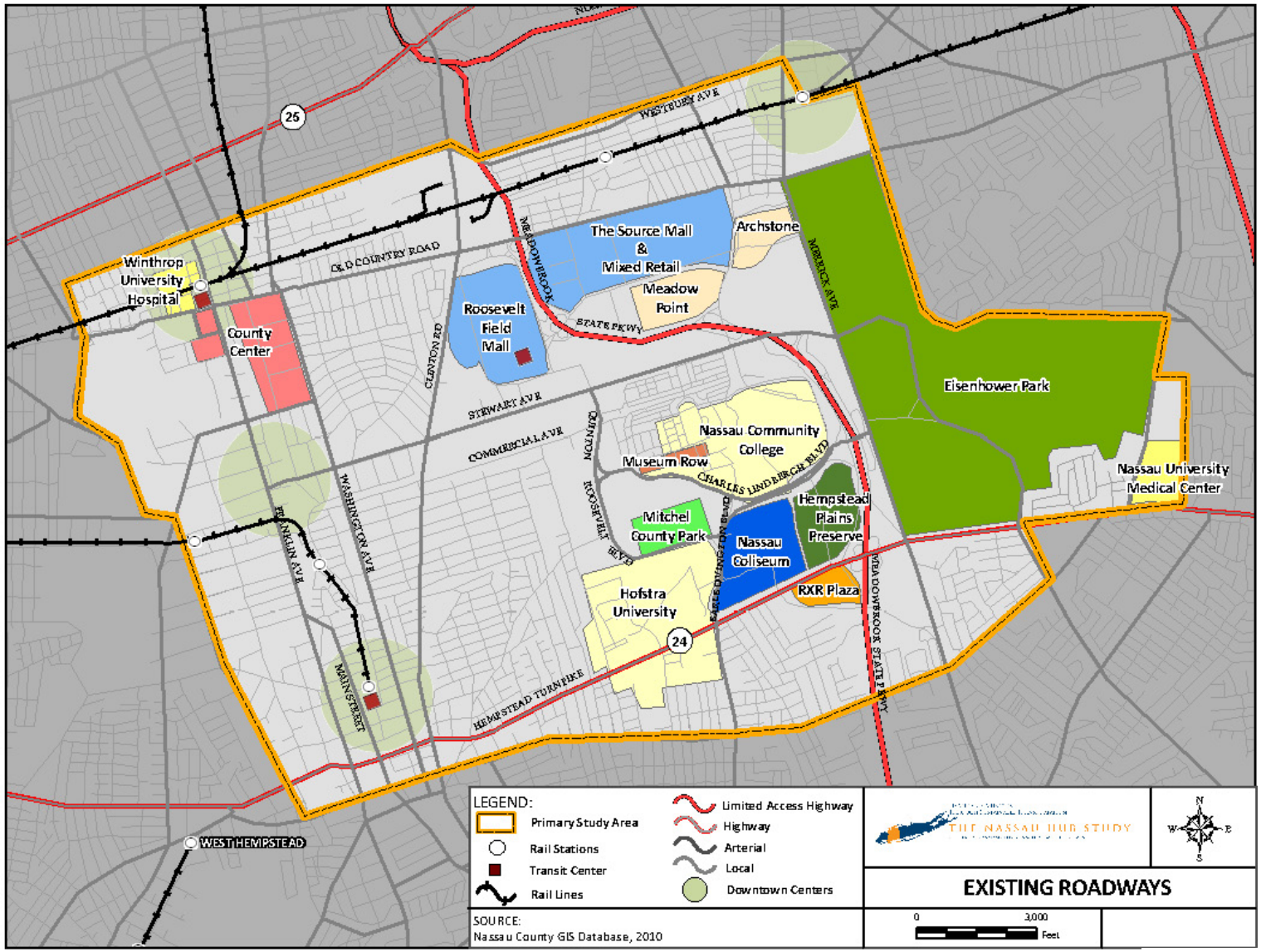
2.4.1 Roadway Network

The Study Area contains a network of roadways comprising state, county, and local roads. Figure 2-5 indicates the primary routes in and around the Study Area.

The MSP is the primary north-south travel route, and provides connections to other regional roadways, such as I-495/Long Island Expressway (indirectly), the Northern State Parkway, and the Southern State Parkway. The MSP is a limited-access, grade-separated highway consisting of three traffic lanes in each travel direction and separated by a median. Within the Study Area, full or partial interchanges are provided to east-west travel routes and are located at Old Country Road (Exit M1), Zeckendorf Boulevard (Exit M2), Merchants Concourse and Stewart Avenue (Exit M3), and Hempstead Turnpike (Exits M4 and M5).

[12] NuHealth. *Raising the Bar*. http://www.numc.edu/raisingthebar.asp (October 4, 2010).
[13] 2012. http://aaup-hofstra.org/wp-content/uploads/2013/03/HofstraUniversityFinancialAnalysis_march2013.pdf
[14] http://www.nassaucountyny.gov/agencies/comptroller/documents/NassauCommunityCollege_1_7_14.pdf
[15] Adelphi University. *Quick Facts*. http://www.adelphi.edu/about/facts.php (September 7, 2010).
[16] Nassau County, *20 Year Downtown Growth Allocation*, 2009.

Figure 2-5: Existing Roadways in the Study Area



The primary east-west travel routes in the Study Area are Old Country Road (under Nassau County Department of Public Works jurisdiction) and Hempstead Turnpike (under New York State Department of Transportation [NYSDOT] jurisdiction).

Old Country Road is a major east-west roadway within the Study Area that contains a varying number of travel lanes, attributable both to available right-of-way and to adjacent land uses, which generate substantial traffic demands that have necessitated a wider cross-section. Some sections have four travel lanes with or without street parking, while other sections have six to eight lanes with no parking. Old Country Road contains numerous curb cuts to allow access to adjacent land uses while major intersections are controlled by traffic signals. The roadway typically has a 40 mile-per-hour (mph) speed limit throughout, except for 30 mph limits posted in the Hamlet of Carle Place and the Village of Mineola. Left- and right-turn lanes are also provided at many locations, such as intersections with major north-south streets and at access points to major activity areas.

Hempstead Turnpike (NYS Route 24) is a principal arterial with a wide median along much of its length (until it enters the Village of Hempstead), and generally has three travel lanes in each direction plus left- and right-turn lanes at major intersections. West of Oak Street (in the Hamlet of Uniondale) and approaching the Village of Hempstead downtown, Hempstead Turnpike's cross-section narrows to two lanes in each direction. Hempstead Turnpike also has numerous curb cuts to allow access to adjacent land uses; major intersections are controlled by traffic signals. Hempstead Turnpike has a 40 mph speed limit throughout the Study Area, except in the Village of Hempstead where the limit is 30 mph.

Other significant east-west roads, such as Stewart Avenue, also serve many of the area's major commercial and institutional developments, as well as pass through primarily residential sections of the Village of Garden City.

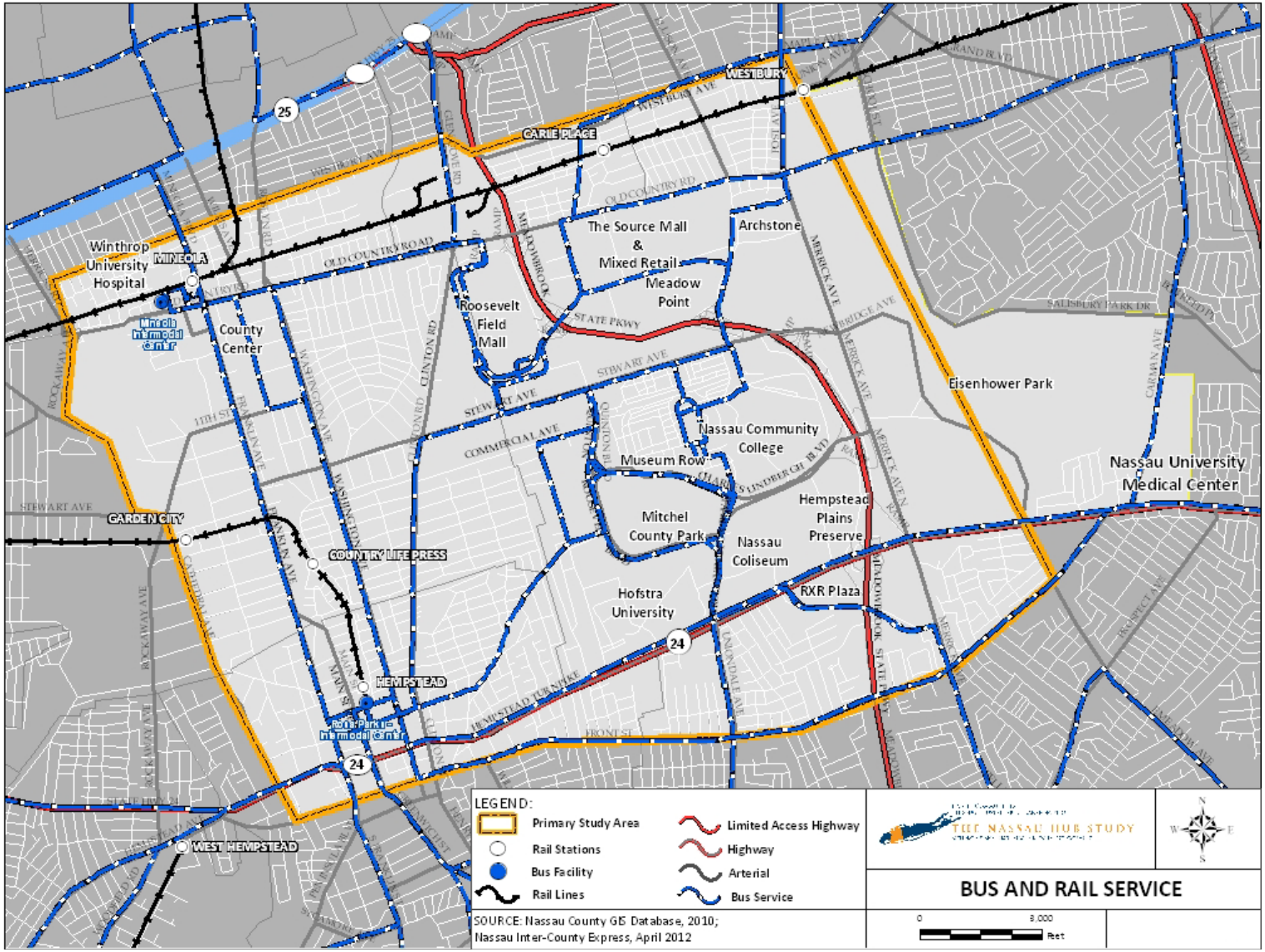
The Study Area is also crossed by several other roads that provide access to major development areas or internal circulation within or between major activity centers. These include Zeckendorf Boulevard, Merchants Concourse, Ellison Avenue, Charles Lindbergh Boulevard, Earl Ovington Boulevard, Endo Boulevard, Quentin Roosevelt Boulevard, Oak Street, Merrick Avenue, and Commercial Avenue.

Many of the Study Area intersections have been improved to include through lanes or auxiliary lanes. Since these roadways have been expanded to the extent possible, given available right-of-way, further widening would now be infeasible or, at least, extremely expensive and would involve significant right-of-way acquisition.

2.4.2 Transit Network

The two main components of the existing transit network are commuter rail and local bus (Figure 2-6), which are described in the following sections.

Figure 2-6: Existing Bus and Rail Service in the Study Area



2.4.2.1 Metropolitan Transportation Authority (MTA)–Long Island Rail Road (LIRR)

The LIRR is a heavy-rail commuter system that handles about 287,000 one-way passenger trips per weekday on ten branches.[17] Three of those branches (Port Jefferson, Oyster Bay, and Hempstead) provide daily service to the outskirts of the Study Area. Only the Oyster Bay Branch offers LIRR north-south connectivity. A fourth branch (West Hempstead) terminates within 1/2 mile of the Study Area perimeter, and currently provides only weekday service.

East-west LIRR service is geared to bringing large volumes of commuters to and from Manhattan, predominantly in the peak travel direction (i.e., AM - westbound, PM - eastbound). The major anchors of the LIRR's east/west orientation are Jamaica and Hunterspoint Avenue/Long Island City Stations (Queens), Atlantic Terminal (Brooklyn) and Pennsylvania Station (Manhattan).

Access to the Study Area via the LIRR is provided at six stations, all of which are located along the western and northern perimeters. There is no direct rail service to the southern or eastern sections, or to many of the major destinations located within the Study Area. Mineola Station on the Port Jefferson Branch has the highest levels of service, connects with more LIRR stations, has the greatest number of parking spaces, and the fastest travel times to Manhattan due to scheduled express services. It also is the busiest, accommodating almost as many boardings and alightings as the other six Study Area stations combined (Table 2-7). Current LIRR travel time between Manhattan and Mineola ranges between 32 and 42 minutes. On the other branches where express services are not operated, travel time from Pennsylvania Station to Hempstead ranges from 50 to 53 minutes and between 49 and 53 minutes to West Hempstead. These significantly slower travel times are exacerbated by the need to transfer at Jamaica for many trips.

Table 2-7: LIRR Total Weekday Boardings and Alightings at Stations within the Study Area

LIRR Line / Station	Boardings	Alightings
Port Jefferson Branch		
Mineola	5,522	4,826
Carle Place	411	361
Westbury	2,073	1,830
Hempstead Branch		
Garden City	650	751
Country Life Press	653	583
Hempstead	1,763	1,851

Source: 2006 LIRR Origin and Destination Study, Total Boardings Eastbound and Westbound.

2.4.2.2 Nassau Inter-County Express (NICE) Bus

The second component of the existing Study Area transit network is the NICE Bus[18] system, which is operated by Veolia Transportation Services, Inc. under a lease and operating agreement with Nassau County. The entire 38-route NICE Bus network operates along public streets. Seventeen of these routes serve the Study Area (Table 2-8 and Figures 2-7 and 2-8). The majority of these routes (ten) provide service to and from areas south of the Study Area: four connect destinations to/from the east, two to/from the north and one to/from the west.

[17] Metropolitan Transportation Authority. *The MTA Network, December 2009.* http://www.mta.info/mta/network.htm (September 10, 2010).
[18] NICE Bus replaced MTA LI Bus as the county bus operator January 1, 2012.

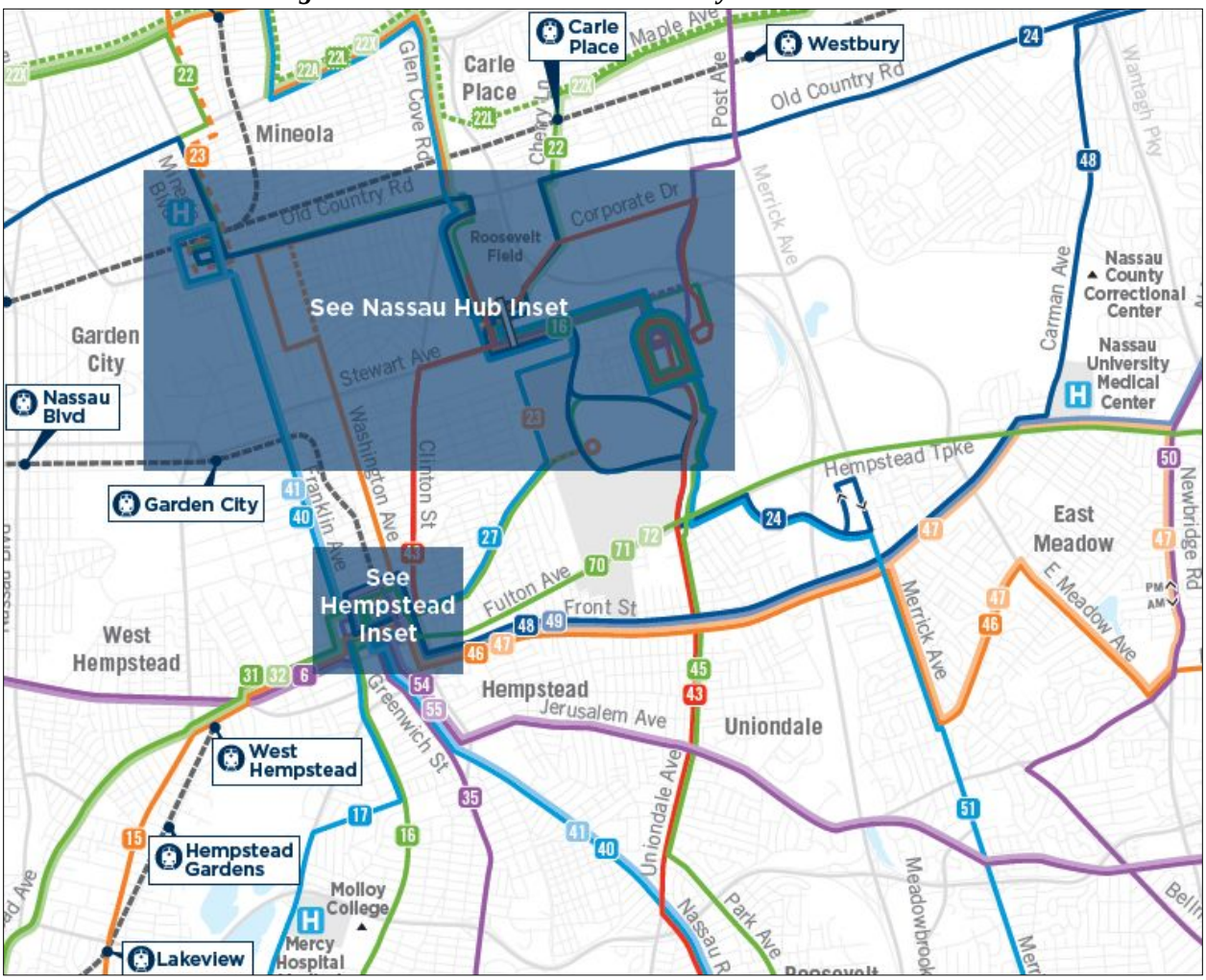
Table 2-8: NICE Bus Service in the Study Area

Route	Route Description	Average Weekday Ridership				Change 1998-2012		Change 2010-2012	
		1998	2010	2011	2012	Riders	Percent	Riders	Percent
6 / 6X	Hemp.-Jamaica (via Hemp. Tpke.)	11,409	14,749	14,870	14,744	3,335	29.2%	-5	0.0%
15	Lng Beach- Hempstead- Roos Fld	6,954	6,472	6,284	5,791	-1,163	-16.7%	-681	-10.5%
16	Hempstead- Rockville Centre LIRR	2,384	3,160	3,155	2,545	161	6.8%	-615	-19.5%
17	Hempstead-Rockvl Ctr-Mercy Hosp	146	184	N/A	N/A	-146	-100.0%	-184	n/a
22/22A/22L/22X	Jamaica-Mineola- Roos Fld-Hksvl	6,242	7,264	7,473	7,235	993	15.9%	-29	-0.4%
23	Manorhaven-Mineola-Hempstead	1,877	2,044	2,092	2,668	791	42.1%	624	30.5%
27	Hempstead-Roos. Field-Glen Cove	1,708	2,058	2,042	1,537	-171	-10.0%	-521	-25.3%
31	Far Rockaway- Lynbrook-Hemp	1,824	1,904	2,098	1,986	162	8.9%	82	4.3%
32	Far Rockaway- Lynbrook-Hemp	3,447	4,020	3,524	3,051	-396	-11.5%	-969	-24.1%
35	Baldwin-Hempstead- Westbury	2,085	3,536	3,408	3,462	1,377	66.0%	-74	-2.1%
40	Freeport- Hempstead-Mineola	5,391	4,785	4,534	4,023	-1,368	-25.4%	-762	-15.9%
41	Freeport- Hempstead-Mineola	4,631	4,640	4,244	3,809	-822	-17.7%	-831	-17.9%
43	Freeport-Roosevelt Field-Hempstead	N/A	1,544	1,540	1,928	1,928	N/A	384	24.9%
45	Bellmore- Roosevelt Field	495	377	330	241	-254	-51.3%	-136	-36.1%
46	Hemp-E. Meadow-Bellmore	481	415	413	466	-15	-3.1%	51	12.3%
47	Hemp-E. Meadow-Bellmore	336	308	299	322	-14	-4.2%	14	4.5%
48	Hemp.- Hicks-Jericho Quad	1,529	1,304	1,193	1,032	-497	-32.5%	-272	-20.9%
49	Hemp.- Hicks-Jericho Quad	1,476	1,445	1,469	1,419	-57	-3.9%	-26	-1.8%
51	Merrick-Roosevelt Field	289	215	196	244	-45	-15.6%	29	13.5%
54	Amityville-Sunrise Mall-Hemp	1,001	1,084	1,121	1,054	53	5.3%	-30	-2.8%
55	Amityville-Sunrise Mall-Hemp	852	1,001	980	920	68	8.0%	-81	-8.1%
70	Hemp-Sun. Mall-Farm-Babylon	1,603	1,539	1,295	1,591	-12	-0.7%	52	3.4%
71	Hemp-Sun. Mall-Farm-Babylon	1,125	1,127	989	1,070	-55	-4.9%	-57	-5.1%

Source: Long Island (LI) Bus 13 Year Comparison of Average Weekday Ridership - MTA LI Bus; Nassau Inter-County Express Bus Map and Schedules April 2012 (www.nicebus.com).

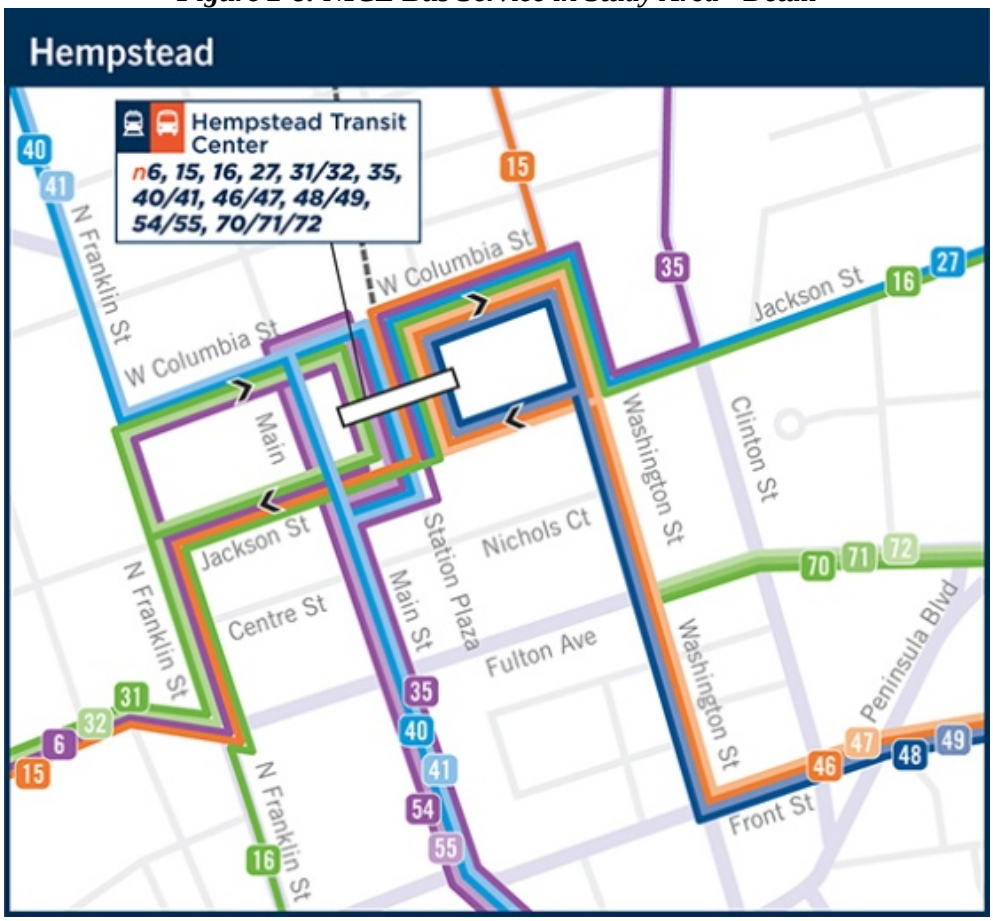
Note: Shaded routes are paired and listed on the same schedule.

Figure 2-7: NICE Bus Service in Study Area - Overview



Source: Nassau Inter-County Express (www.nicebus.com), April 2012.

Figure 2-8: NICE Bus Service in Study Area - Detail



Source: Nassau Inter-County Express (www.nicebus.com), April 2012.

The Study Area is home to three off-street transit centers: the Rosa Parks–Hempstead Transit Center and the Mineola Intermodal Center are intermodal (offering physically convenient transfers among buses and to the LIRR on the periphery of the Study Area), while the Roosevelt Field Bus Facility serves bus riders only. The Rosa Parks–Hempstead Transit Center is a more modern and slightly relocated version of a terminal that served the Village of Hempstead in the 1950s, when it was the retail and employment center of the County. When the County consolidated private bus operations in 1974, the Rosa Parks–Hempstead Transit Center was envisioned as the center of a hub-and-spoke arrangement, with extensive transferring activity. The Mineola Intermodal Center functions most strongly as a LIRR connection for New York City-bound trips, and for inter-and intra-County trips to the medical/commercial/governmental activities that are within walking distance of Mineola Station. Increases and decreases in ridership have been experienced throughout the system over the last decade. Average weekday ridership on the NICE Bus network was approximately 99,000 in 2012. [19]

[19] NICE Bus, Historical Ridership Data 4th Quarter 1998-2013.

2.5 Travel Patterns

The Study Area encompasses a range of activity centers including residential, office, government services (i.e., courts and administration), retail, manufacturing, cultural, educational, and recreational uses. As such, it generates extensive demands on the existing transportation system, especially on roadways serving it. Travel patterns in the Study Area in 2010 were analyzed and are illustrated on "tripshed" maps (Figures 2-9 and 2-10) that graphically depict travel behavior of people traveling to and within the Study Area. These graphics illustrate the number of trips that are attracted to the Study Area (receiving area) from all surrounding zones (sending areas), showing both the distribution and intensity of trips attracted to the Study Area.

Traffic Analysis Zones (TAZ) are commonly used in transportation planning models to represent areas with unique or significant travel characteristics. The TAZ is the analysis unit used in NYMTC's BPM[20] to analyze the travel patterns across the different geographies comprising the NYMTC region.

These data are useful in providing insights on the origins of trips into the Study Area, predominant directions of travel, and the number of trips made into the Study Area. These data assisted in evaluating whether there are adequate access and mode choices to travel to the Study Area as well as informing the development of specific routings and/or alignments for the alternatives to be developed in this Study.

2.5.1 Travel Patterns to the Study Area by Direction

Figures 2-9 and 2-10 and Table 2-9 depict predominant travel patterns by direction for trips originating from the surrounding TAZs (sending areas) and traveling to destinations in the Study Area (receiving areas). Predominant travel patterns depict the AM peak-period (6:00-10:00 AM) trips, as defined in NYMTC's BPM. The data are categorized by their NYMTC groupings. For highway trips, the categories are "Drive Alone" (i.e., single-occupant vehicle trips), "Carpool" (i.e., 2-person and 3-person high-occupancy vehicle [HOV] ride share), "Trucks, "Externals" (i.e., trips from outside the NYMTC region to the Study Area) and "Other Commercial." For transit trips, the data are categorized as "Walk to Transit" (i.e., bus), "Drive to Transit" (i.e., bus), "Walk to Commuter Rail," and "Drive to Commuter Rail."

As shown in Table 2-9, in 2010 the Study Area attracted a considerable number of trips, including 97,000 trips in the AM peak period (6:00-10:00 AM). Eighty percent of trips entering the Study Area were highway trips and 20 percent were transit trips (MTA LI Bus and MTA LIRR commuter rail). While the share of transit trips is higher than expected for a suburban area, the Study Area is not a typical suburban setting. It is unique due to its high concentration of destinations and activity centers, including two regional malls (Roosevelt Field and the Source Mall), several large office parks, downtown cores for Villages of Garden City, Mineola, and Hempstead, two large colleges (NCC and Hofstra University), the Nassau University Medical Center, Museum Row, and the Nassau County Government Complex. As this area developed over time, transit services, particularly bus service, have been introduced to try to serve these destinations. Still, as discussed below, the automobile is the predominant mode used for traveling to the Study Area.

[20] The BPM, which is NYMTC's regional travel demand forecasting model, predicts changes in future travel patterns in response to changes in demographic profiles and transportation systems within the NYMTC region. The BPM incorporates transportation behavior and relationships based on an extensive set of data that include a major travel survey of households in the region, land-use inventories, socioeconomic data, traffic and transit counts, and travel times.

Figure 2-9: Total AM Peak-Period Vehicle Trips to Study Area ("Tripshed")

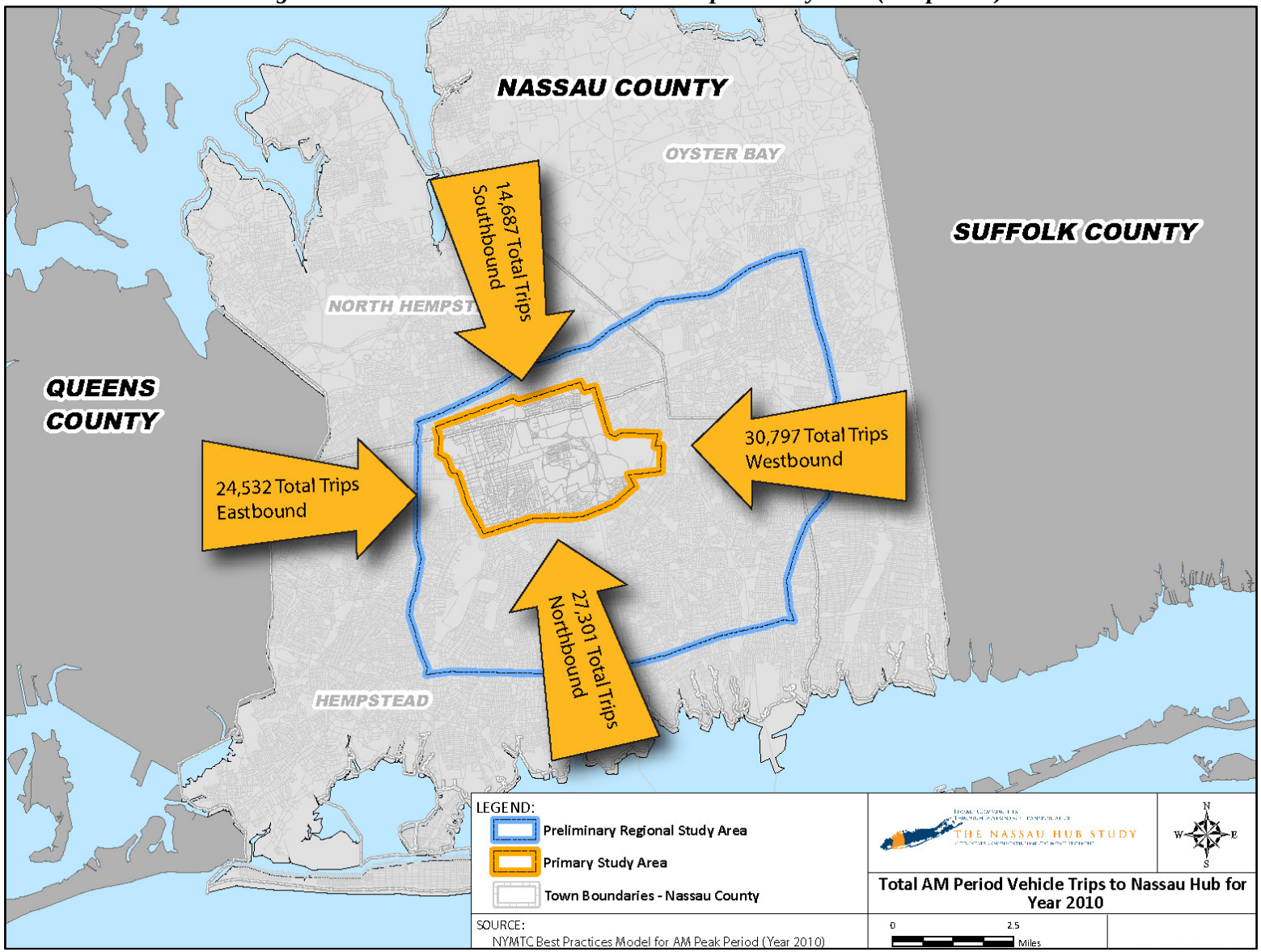


Figure 2-10: Total AM Peak-Period Transit Trips to the Study Area ("Tripshed")

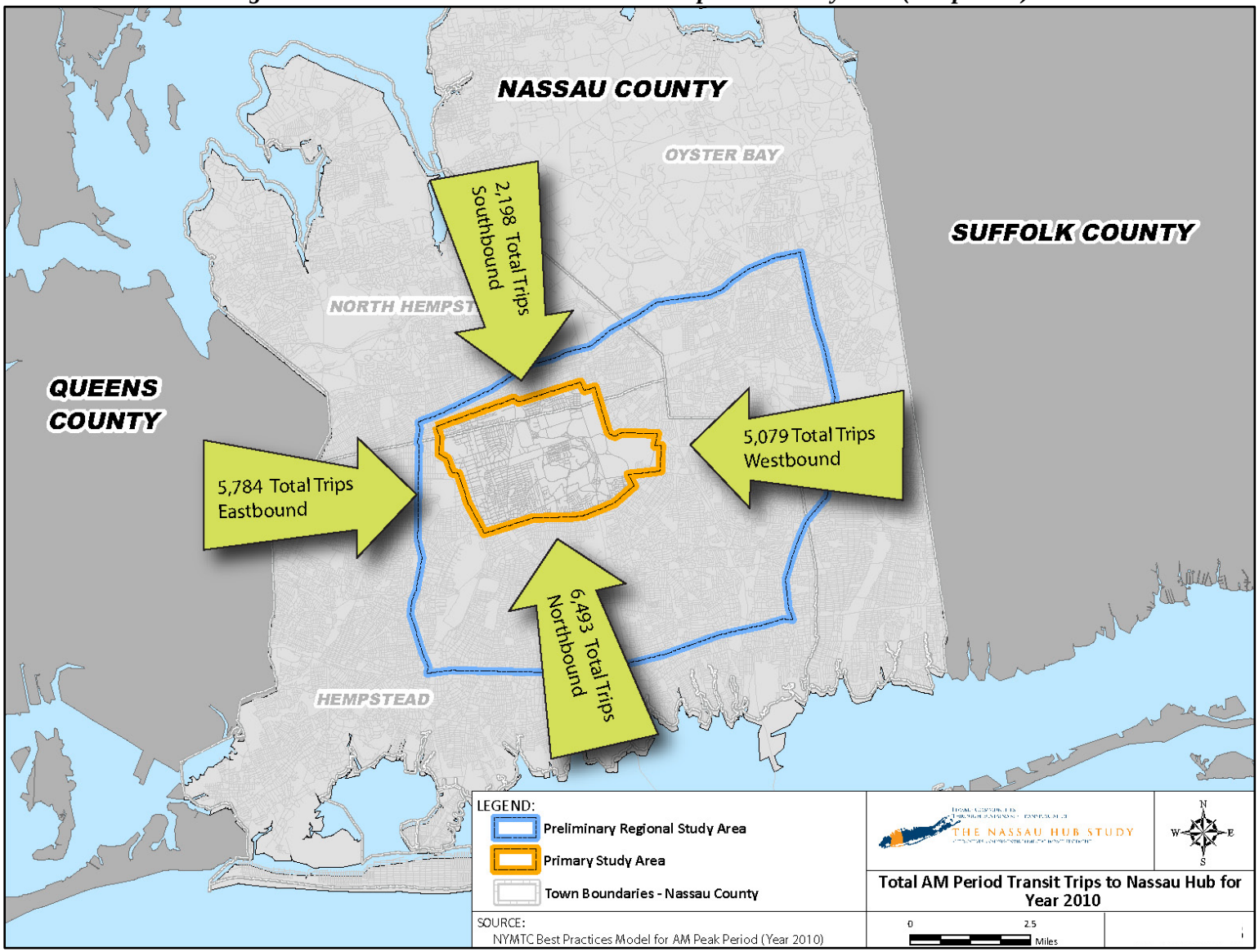


Table 2-9: AM Peak-Period Travel Patterns by Direction to the Study Area – 2010

Sending Area	Highway Trips	% Highway	Transit Trips	% Transit	Total Trips	% Total Trips
Northbound	20,808	76.2%	6,493	23.8%	27,301	28.1%
Southbound	12,489	85.0%	2,198	15.0%	14,687	15.1%
Westbound	25,718	83.5%	5,079	16.5%	30,797	31.6%
Eastbound	18,748	76.4%	5,784	23.6%	24,532	25.2%
Total	**77,763**	**79.9%**	**19,554**	**20.1%**	**97,317**	**100.0%**

Source: NYMTC, BPM for AM Peak Period (Year 2010).

The NYMTC data for 2010 show that the predominant direction of travel to the Study Area is westbound, or from areas located to the east, accounting for just over 31 percent of all AM peak-period trips (30,797 trips). Conversely, southbound travel (i.e., from areas to the north) produced the lowest share of trips, representing only 15 percent of total trips bound for the Study Area (14,687 trips). In terms of the transit share of trips made to the Study Area by direction, the highest levels were those heading northbound (6,493 trips) and eastbound (5,784 trips).

2.5.2 External and Internal Travel Patterns of the Study Area

Table 2-10 displays internal travel patterns (i.e., trips beginning and ending *within* the Study Area) and external travel patterns (i.e., trips originating from areas *outside* the Study Area that end *inside* the Study Area). The data are further organized by highway trips and transit trips. These data reflect travel behavior in terms of where trips begin and end and which modes of travel are used to make these trips.

Table 2-10: AM Peak-Period Internal and External Trips by Mode for the Study Area – 2010

Highway Trips

Mode	Internal	External	Total	% of Total Highway Trips
Drive Alone	6,399	46,292	52,691	67.8%
Carpool[1]	2,947	17,490	20,437	26.3%
Trucks[2]	1,363	2,101	3,464	4.5%
Other Commercial	530	641	1,171	1.5%
Subtotal	**11,239**	**66,524**	**77,763**	
% of Total Highway Trips	14.5%	85.5%	100.0%	

Transit Trips[3]

Mode	Internal	External	Total	% of Total Transit Trips
Walk to Transit (Bus)	3,217	13,161	16,378	83.8%
Drive to Transit (Bus)	34	375	409	2.1%
Walk to Commuter Rail	163	1,275	1,438	7.4%
Drive to Commuter Rail	41	1,288	1,329	6.8%
Subtotal	**3,455**	**16,099**	**19,554**	
% of Total Transit Trips	17.7%	82.3%	100.0%	
GRAND TOTAL	**14,694**	**82,623**	**97,317**	
% of Total Trips	**15.1%**	**84.9%**	**100.0%**	

Source: NYMTC, BPM for AM Peak Period (Year 2010)
Notes:
[1]Carpool = 2-person and 3-person HOV ride share.
[2]Trucks plus "Externals" (i.e., trips from outside NYMTC region to Study Area, though minimal at only 63 trips).
[3]The NYMTC model defines Transit as “Walk to Transit” (i.e., bus), “Drive to Transit” (i.e., bus), “Walk to Commuter Rail,” and “Drive to Commuter Rail.”

During the AM peak period, 85 percent of all trips (both highway and transit trips) made to the Study Area in 2010 originated from areas outside of it. The remaining 15 percent of the total trips were internally generated. These percentages were generally the same for both internal and external highway and transit trips. Comparing internal to external trips for highway trips only, 14.5 percent of highway trips originated within the Study Area and 85.5 percent originated outside of it. Internally generated transit trips were slightly higher (17.7 percent) compared to external transit trips (82.3 percent).

The automobile is the predominant mode of travel for highway trips. During the AM peak period, 94 percent of all highway trips to the Study Area are "Drive Alone" and "Carpool," accounting for over 73,000 trips. The remaining 6 percent of highway trips are truck and other commercial vehicles (approximately 4,600 trips).

In terms of transit trips to the Study Area, trips made by bus account for nearly 86 percent of all transit trips (approximately 16,800 trips). Commuter rail represents only 14 percent of the share of transit trips or just over 2,700 trips. People traveling by commuter rail were almost as likely to drive and park at a station (1,329 trips) as they were to walk to a station (1,438 trips). As there are six LIRR stations within the Study Area, the commuter-rail share is low, which helps illustrate the fact that commuter rail is not used extensively for travel to and within the Study Area.

2.6 Transportation Limitations

2.6.1 Land Use

While the Nassau Hub is the County's commercial, government, institutional and entertainment center, the multiple destinations and activity nodes within the Study Area are themselves dispersed and poorly connected. The major activity centers in the Study Area tend to be isolated by large parking lots and multi-lane arterial roadways that function as physical barriers. Additionally, the location of Eisenhower Park, with no major east-west through roads, presents a physical obstacle to linking facilities to the east to the remainder of the Study Area. Due to these conditions, the current transportation system does not efficiently link uses within the Study Area, which poses potential constraints to future development and increased economic activity should no transportation improvements be implemented to correct this deficiency.

2.6.2 Roadway Congestion

One of the most prevalent transportation issues in Nassau County, in general, and in the Study Area, in particular, is persistent and recurring traffic congestion on major roadways. The private automobile is the dominant mode of transportation into and around the Study Area, serving as the travel mode for the vast majority of all Study Area trips. Non-work trips (shopping, entertainment, and recreational) are more likely to be auto-oriented than commuting trips, which are somewhat more likely to be made via transit.

The peak commuter hours typically occur on weekdays from 8:00 to 9:00 AM and 5:00 to 6:00 PM, but traffic volumes are also consistently high throughout the midday period.[21] Congestion often occurs from the midday through the late afternoon/early evening peak period. Several roadways, such as Old Country Road and Hempstead Turnpike, experience high traffic volumes and high levels of congestion even on weekends. In addition to congestion related to commuting hours, the Study Area's event-based land uses

[21] Peak period refers to the time period(s) of the day in which the background traffic and/or project-generated traffic is at or anticipated to be at its highest level.

create non-standard traffic patterns. For example, the Nassau Veterans Memorial Coliseum currently generates high volumes of traffic related to sporting and entertainment events held in the evenings and on weekends. Of particular note, evening events tend to have start times that partially overlap the peak commuting hour, further exacerbating traffic conditions in the Study Area. Traffic conditions around Nassau Veterans Memorial Coliseum are expected to change dramatically with the planned move of the New York Islanders to a new arena in Brooklyn in 2015. The current redevelopment proposal for Nassau Veterans Memorial Coliseum will resize the venue and add more attraction dates, which may yield increases in traffic on the surrounding road network.

The MSP carries traffic volumes that, at times, exceed 6,400 vehicles per hour (vph), which surpasses the roadway's capacity. These substantial traffic volumes result in queuing at interchange ramps and in weaving areas along the MSP during peak weekday commuter and shopping periods, as well as many off-peak periods throughout the week. Traffic exiting the MSP, where interchange exit ramps are regulated by traffic signals or yield signs, can form long queues that back up onto the parkway's travel lanes, creating potentially dangerous conditions. Volumes entering and exiting the MSP vary widely for the five entrances/exits in the Study Area, with over 1,000 vph occurring just on the northbound off-ramp at Old Country Road. The Study Area has only this one free-flowing highway or parkway; all other travel occurs on arterials and local streets.

Many of the Study Area's principal arterials experience severe congestion along much, if not all, of their length during peak commutation hours, as well as midday and weekend shopping, recreational, and entertainment hours. Old Country Road and Hempstead Turnpike, the two primary east-west arterials in the area, carry substantial traffic volumes, at times reaching close to 3,000 vph and operating at levels of service (LOS) E or F in some locations. At numerous locations where these two primary east-west arterials intersect with major north-south roads, the capacity of those intersections cannot adequately accommodate the volumes traveling through them. A major source of traffic congestion occurs at the many locations where key east-west and north-south roads intersect.[22]

Examples of this are at the intersections of Old Country Road and Glen Cove Road/Clinton Road, Old Country Road and Merrick Avenue/Post Avenue, and Hempstead Turnpike and Merrick Avenue, which operate at congested overall LOS E or F in both the morning and evening peak hours, and at numerous other intersections that operate at LOS E or F in at least one of the two peak hours, if not both. An intersection operating at overall LOS E or F generally means that either one specific traffic movement is operating at severe congestion levels or that multiple movements are operating at LOS E or F conditions. According to the year 2008 analyses published in the *DGEIS for the Lighthouse at Long Island*, seven of 27 intersections analyzed in the Study Area and along key feeder routes leading to it operated at overall LOS E or F conditions in the weekday AM peak hour and another eight intersections operated overall at LOS D. In the weekday PM peak hour, 11 of the 27 intersections operated at overall LOS E or F and another 10 operated at overall LOS D. In the Saturday midday peak hour, four intersections operated at overall LOS E or F and another eight operated at overall LOS D (see Table 2-11 and Figures 2-11 through 2-13). Congestion delays at many of these intersections are already severe. Even at an intersection's

[22] Level of service (LOS) represents overall operating conditions confronting a motorist, based on traffic congestion and travel speed. LOS criteria, as defined in the *Highway Capacity Manual 2000 (HCM 2000)*, are stated in terms of the average stopped delay per vehicle. Levels of service range from "A" to "F," with "A" representing free-flow conditions and "F" constituting breakdown or congested conditions. Typically, LOS A through C are considered acceptable with LOS D considered marginally acceptable. LOS E and F are at or near failing conditions.

overall marginally acceptable/unacceptable LOS D, one or more traffic movements within the intersection may have been operating in congested conditions.

In order to accommodate existing traffic demands, many of the area's roadways have already been widened at critical locations with left-turn lanes and/or right-turn lanes and curb parking has been prohibited to improve roadway operations. One prominent example is the intersection of Old Country Road and Glen Cove Road/Clinton Road, where there are seven westbound lanes (two left-turn lanes, four through lanes, and a right-turn lane), six eastbound lanes (two left-turn lanes, three through lanes, and a right-turn lane), and four to five travel lanes per direction along Glen Cove Road/Clinton Road.

Even though these measures have added much-needed capacity, this intersection still operates at severely congested levels of service with 6,500 to more than 7,000 vehicles passing through it during peak hours. This intersection is currently operating at LOS E during weekday and weekend peak hours, which indicates that it does not have the capacity to adequately process existing volumes. There are numerous similar examples of existing congested conditions throughout the Study Area.

NYSDOT forecasts that traffic in the Study Area will increase by approximately ½ percent per year. The Highway Data Services Bureau is responsible for collecting and reporting highway data (including volume counts) in New York State. The NYSDOT Traffic Monitoring System obtains 24-hour traffic count data on all State roads and many local roadways to determine current conditions and to project current and future conditions based on prior-year traffic counts. NYSDOT currently utilizes the 0.5-percent annual growth to project future traffic conditions on roadways within the Study Area. The use of this growth rate is justified based upon historic data and NYSDOT's ongoing traffic count program. This data source was used to predict ambient traffic growth.

By the year 2035 (the Nassau Hub Study's future analysis year), overall traffic volumes are expected to increase by almost 15 percent compared to existing volumes. Even without any significant land development or redevelopment projects, vehicle traffic within the Study Area is expected to increase by thousands of vehicles, and it is logical to conclude that congestion and delays throughout the Study Area will increase substantially. Applying NYSDOT's growth rate to key intersections in the Study Area predicts hundreds of additional trips (Figure 2-14). With this projected traffic growth, traffic conditions at all Study Area intersections currently operating at overall congested LOS E or F will deteriorate further, with substantially increased delays. It is also likely that traffic conditions at Study Area intersections currently operating at overall marginally acceptable/unacceptable LOS D will deteriorate to congested LOS E or F. In the most critical weekday peak hour between 5:00 and 6:00 PM, this would mean that 20 of the 27 intersections included in Table 2-11 would be classified as failing. With no physical room and right-of-way to make improvements to handle this additional traffic, congestion and delays will worsen, causing traffic diversions to lower order roads, potentially including residential streets. This condition will be common throughout the entire Study Area.

Table 2-11: Overall Intersection Traffic Level of Service (2008 Existing Conditions)

INTERSECTION	WEEKDAY AM	WEEKDAY PM	SATURDAY MIDDAY
OLD COUNTRY ROAD & MINEOLA BLVD / FRANKLIN AVE	○	◑	○
OLD COUNTRY ROAD & WILLIS AVE	N/A	N/A	N/A
OLD COUNTRY ROAD & ROSLYN ROAD / WASHINGTON AVE	N/A	N/A	N/A
OLD COUNTRY ROAD & GLEN COVE ROAD / CLINTON ROAD	●	●	●
OLD COUNTRY ROAD & ROOSEVELT FIELD ENTRANCE	○	●	●
OLD COUNTRY ROAD & MEADOWBROOK PARKWAY SB EXIT RAMP	N/A	N/A	N/A
OLD COUNTRY ROAD & MEADOWBROOK PARKWAY NB EXIT RAMP	N/A	N/A	N/A
OLD COUNTRY ROAD & EAST GATE BLVD	N/A	N/A	N/A
OLD COUNTRY ROAD & ZECKENDORF BLVD	N/A	N/A	N/A
OLD COUNTRY ROAD & ELLISON AVE / MERCHANTS CONCOURSE	○	●	○
OLD COUNTRY ROAD & POST AVE / MERRICK AVE	●	●	◑
OLD COUNTRY ROAD & SCHOOL STREET / SALISBURY PARK DRIVE	◑	◑	○
FULTON AVE & NORTH FRANKLIN STREET	○	●	◑
FULTON AVE & PENINSULA BLVD	○	○	○
HEMPSTEAD TURNPIKE & OAK STREET	○	◑	○
HEMPSTEAD TURNPIKE & HOFSTRA BLVD / CALIFORNIA AVE	◑	○	●
HEMPSTEAD TURNPIKE & EARLE OVINGTON BLVD / UNIONDALE AVE	◑	●	●
HEMPSTEAD TURNPIKE & GLENN CURTISS BLVD	◑	◑	○
HEMPSTEAD TURNPIKE & MERRICK AVE	●	●	◑
HEMPSTEAD TURNPIKE & PARK BLVD / EAST MEADOW AVE	◑	●	○
HEMPSTEAD TURNPIKE & CARMAN AVE	●	◑	○
HEMPSTEAD TURNPIKE & NEWBRIDGE ROAD	●	●	◑
STEWART AVE & FRANKLIN AVE	●	◑	◑
STEWART AVE & WASHINGTON AVE	N/A	N/A	N/A
STEWART AVE & CLINTON STREET	◑	◑	○
STEWART AVE & ROOSEVELT FIELD RING ROAD (WEST)	○	○	○
STEWART AVE & QUENTIN ROOSEVELT BLVD	○	●	○
STEWART AVE & MERCHANTS CONCOURSE / ENDO BLVD	◑	●	◑
STEWART AVE & MERRICK AVE	◑	◑	◑
CHARLES LINDBERGH BLVD & EARLE OVINGTON BLVD	○	○	○
CHARLES LINDBERGH BLVD & MERRICK AVE	○	○	○
MERRICK AVE & CORPORATE DRIVE	○	○	○
FRONT STREET & UNIONDALE AVE	○	◑	○
FRONT STREET & MERRICK AVE	●	◑	◑

Legend:

○ Level of Service A,B,C (acceptable)
◑ Level of Service D (marginally acceptable/unacceptable)
● Level of Service E,F (unacceptable)

Notes:

1. Levels of service are for the overall intersection. LOS E and F indicate congestion or severe congestion, potentially for multiple traffic movements at the intersection. Overall LOS C and D may also have one or more individual traffic movements at congested LOS E or F.
2. Levels of service (LOS) A,B and C indicate acceptable conditions, LOS D indicates increased delays, while LOS E and F indicate congested or severely congested conditions.
3. N/A = Not analyzed
4. Source: The Lighthouse at Long Island EIS

Source: DGEIS for the Lighthouse at Long Island, 2009.

Figure 2-11: Overall Intersection Traffic Levels of Service: 2008 Existing Conditions-Weekday AM Peak Period

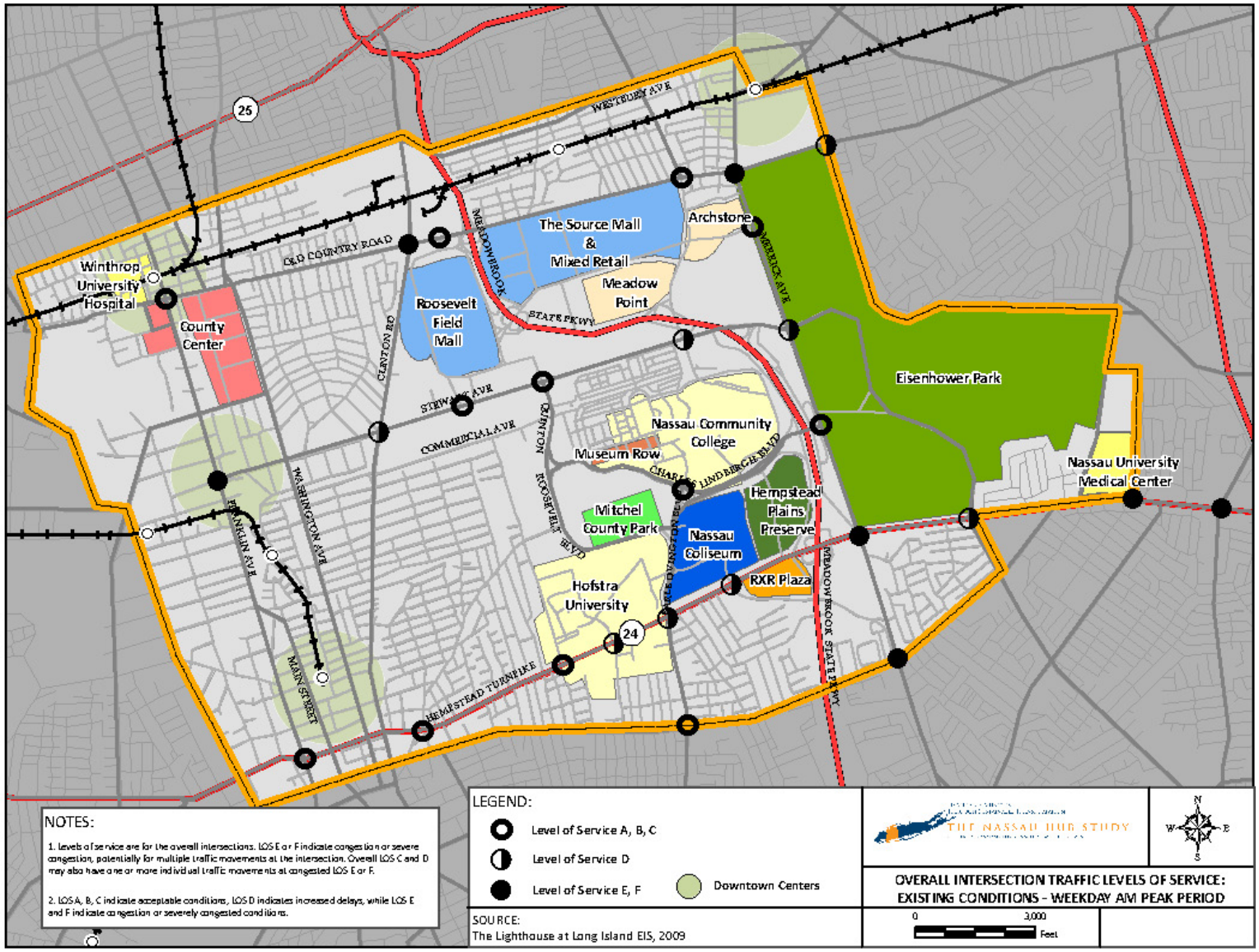


Figure 2-12: Overall Intersection Traffic Levels of Service: 2008 Existing Conditions-Weekday PM Peak Period

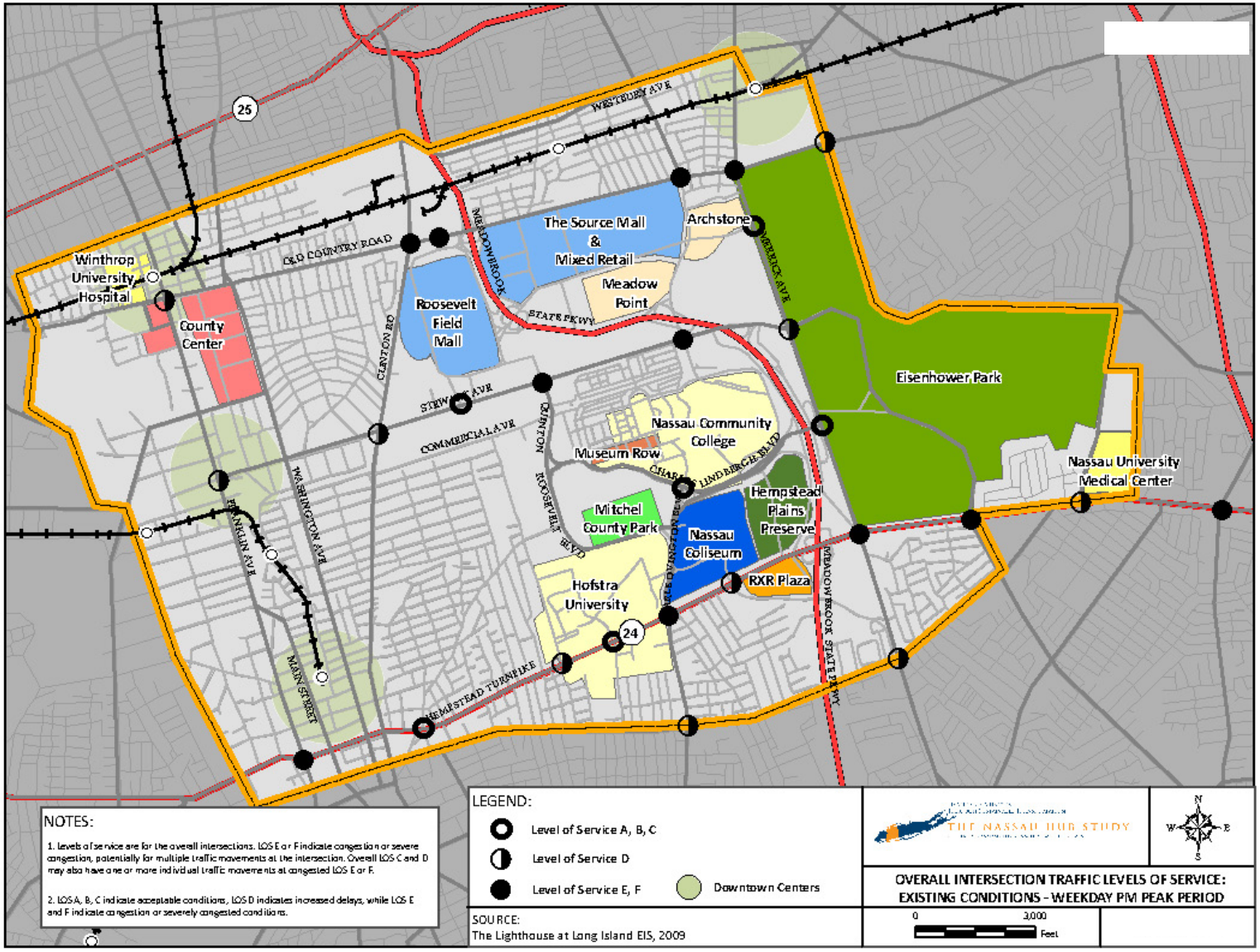


Figure 2-13: Overall Intersection Traffic Levels of Service: 2008 Existing Conditions-Saturday Midday

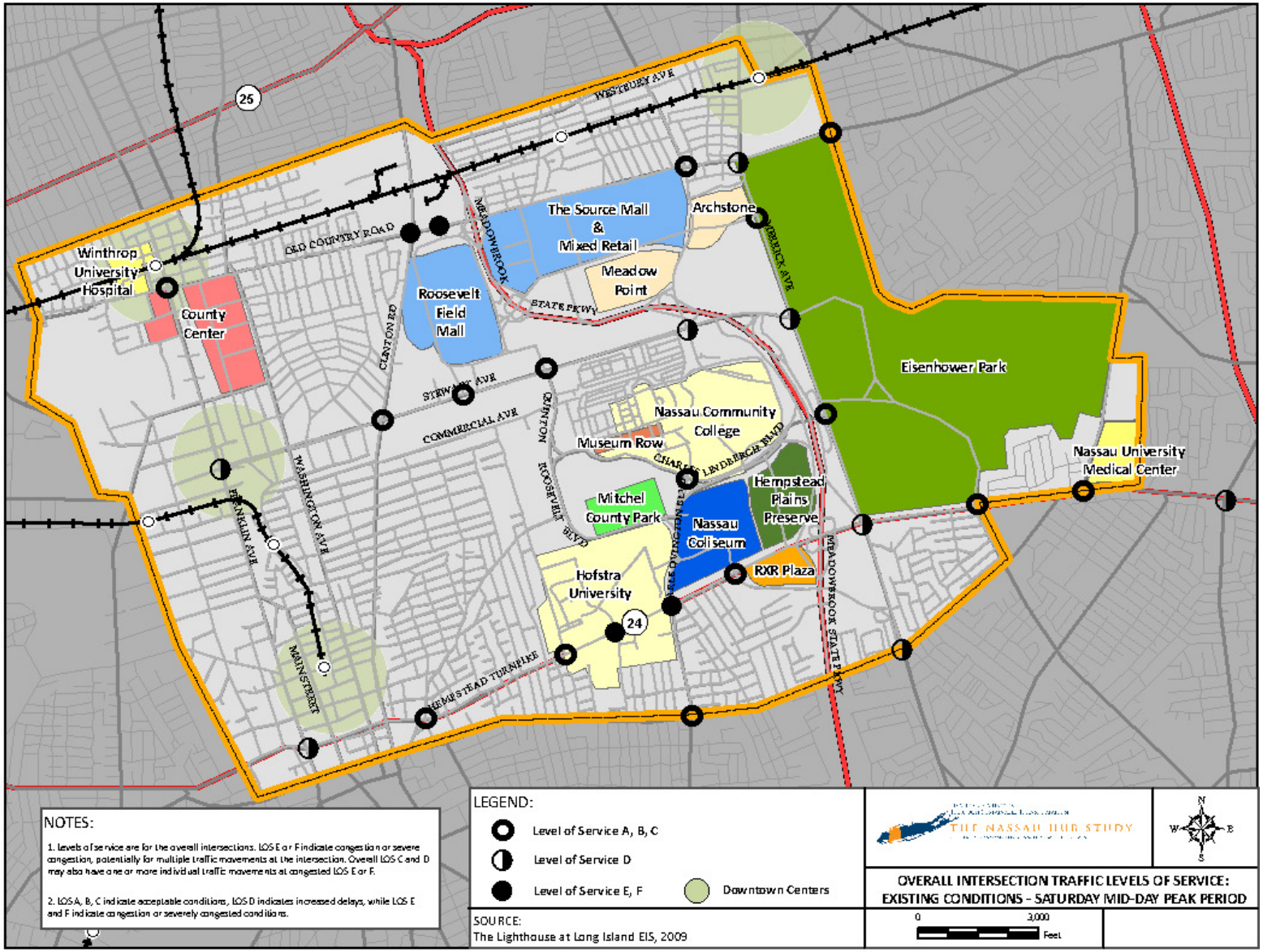
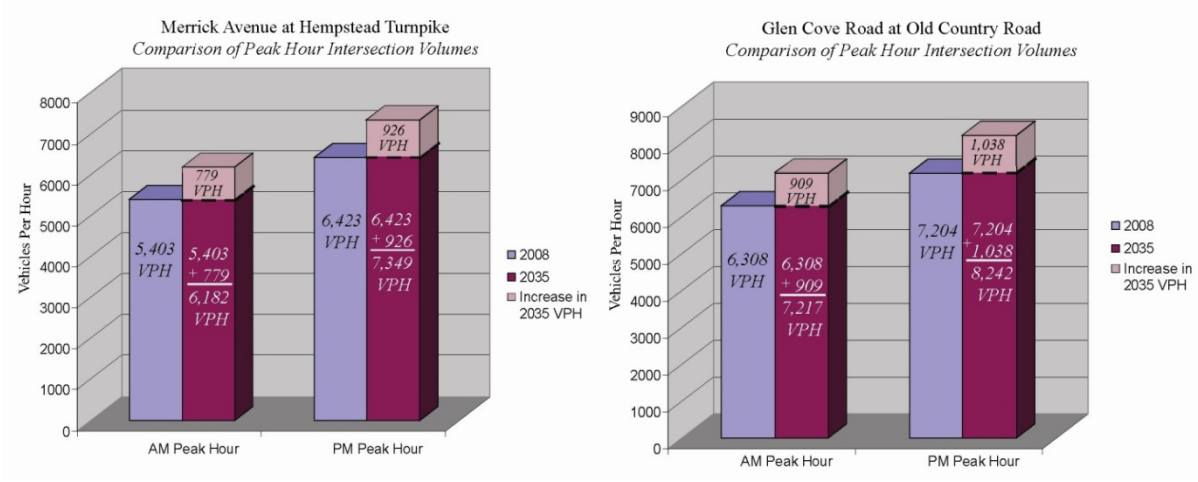


Figure 2-14: Merrick Avenue at Hempstead Turnpike and Glen Cove Road at Old Country Road – Comparison of Peak-Hour Intersection Volumes, 2008 and 2035



Sources: 2008 traffic counts from DGEIS for the Lighthouse at Long Island, 2009; NYSDOT growth rate for Town of Hempstead.

2.6.3 Planned or Committed Roadway Improvements

The NYSDOT Region 10 Transportation Improvement Program (TIP) lists federally funded projects with money allocated through the next several fiscal years. The current TIP, adopted September 4, 2013, covers Federal Fiscal Years (FFY) 2014-2018.[23]

A review of the current TIP lists several signal improvement projects in the Study Area, which will improve roadway capacity and efficiency. These include a project to update existing signals and construct new signal systems on Old Country Road from Herrick Road to Apex Lane in Nassau County so they can be controlled and optimized with the County's computerized traffic signal control system and a project to expand the County's existing fiber optic network to provide communications to additional traffic signals, which will optimize signal timing and reduce vehicular congestion. The TIP also includes standard maintenance and operations projects to be implemented within the Study Area.

2.6.4 Transit Network Limitations

The existing LIRR and NICE Bus networks face a number of challenges in attracting new transit riders and adequately accommodating Study Area-bound and intra-Study Area travel for those who have no other travel options. These challenges include:

- **Rail**
  - LIRR service is oriented east/west for travel to/from Nassau County and New York City.
  - Train stations are located on the outskirts of the Study Area, beyond the typical 1/2-mile walking distance to/from many of Study Area's activity centers.
  - Reverse-peak rail service tends to be slower, infrequent, and has AM and PM peak-period gaps.
  - There is no direct rail access from the south shore to the Study Area.

[23] NYMTC, *Federal Fiscal Years 2014-18 Transportation Improvement Program*, Adopted September 4, 2013.

- **Bus**
  - Bus distributor routes serving Study Area destinations from LIRR train stations are infrequent, have service for limited hours, and are not schedule-coordinated.
  - Of only five bus routes that currently offer frequent service to the Study Area all day, two serve only the outskirts of the Study Area.
  - Intra-Study Area bus service tends to be fragmented and infrequent, which can be confusing for potential riders.
  - There are no priority bus treatments (e.g., exclusive bus lanes, signal priority, bus bulbs) in the Study Area, with the result that bus service is often delayed and irregular due to existing general traffic congestion.
  - Almost all of the north shore and the southeast quadrant of Nassau County lack any direct transit connection to the Study Area.