



Long Island Regional
Planning Council

**Long Island 2035
Regional
Comprehensive
Sustainability Plan**

Technical Report-
Economy



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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party

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1 Methodology for Demographic & Economic Projections

In order to fully understand the challenges that Long Island may face in the future, the Arup team is developing an outlook of Long Island in 2035. HR&A Advisors, Inc. contributed to that assessment with a review of historical trends, and a meta-analysis of studies projecting population, demographic and employment attributes in 2035. HR&A localized such forecasts to the town/sub-county level for use by other Arup team members to use in addressing land use, tax and governance, sustainability and equity. The following is an overview of the methodology employed in this work.

Review of Historical Trends

The Arup team gathered primary and secondary socioeconomic data for analysis of historical trends. HR&A considered socioeconomic characteristics such as population, age, race, ethnicity, gender, as well as economic criteria including median household income, poverty status, cost of living, income distribution, employment, commuting patterns, and other economic markers. HR&A compared trends by county and select trends at the county sublevel (town), against peer New York Metropolitan Area geographies, including Fairfield County, Westchester County, and suburban northern New Jersey, as well as New York City.

HR&A utilized the following data sources for the historical trends analysis:

U.S. Census Bureau data from the 1970, 1980, 1990 and 2000 decennial censuses;

2005-2007 data from the U.S. Census Bureau American Community Survey 3-year estimates;

Data from the U.S. Census's County Business Patterns;

Data from the U.S. Department of Commerce's Bureau of Economic Analysis;

Sperling's Cost of Living Index;

Assorted local reports, including studies by the Long Island Index and Long Island Association.

Selection of the NYMTC 2010-2035 Projections

HR&A reviewed and evaluated all relevant recent projections for population, demographic and employment, including the New York Metropolitan Transportation Council's (NYMTC) *2010-2035 Regional Transportation Plan*¹, Cornell University's Program on Applied Demographics' *2009 New York Population Projection by Age and Sex*², and Suffolk County Department of Planning's 2008 report on *Demographic, Economic and Development Trends*³, among others. HR&A interviewed the authors of these studies and compared the methodology and results of each.

HR&A determined that the NYMTC 2010-2035 forecast was the most rigorous resource available for establishing baseline projections for population, demographics and employment on Long Island in 2035 for the following reasons:

¹ *2010-2035 Regional Transportation Plan: A Shared Vision for a Shared Future*, New York Metropolitan Transportation Council, 2009. Available at: <http://www.nymtc.org/rtp/default.aspx>

² *New York Population Projection by Age and Sex*, Jan K. Vink, Program on Applied Demographics, Cornell University, 2009. Available at: <http://www.human.cornell.edu/che/BLCC/pad/data/upload/projection-model-description.pdf>

³ *Demographic, Economic and Development Trends*, Suffolk County Department of Planning, 2008. Available at: http://www.co.suffolk.ny.us/upload/planning/pdfs2/reports/2009/demoecon_all_12309.pdf

Comprehensiveness. The NYMTC model is the most comprehensive, informed by both demographic and economic trends. NYMTC's forecast is based on a population cohort approach, which projects birth and survival rates based on age, gender, and race/ethnicity. These are then informed by projected regional and national employment trends, based on a nationally-recognized model developed by Global Insight, Inc., as well as considerations of net migration on and off of Long Island.⁴

Endorsed by County governments. In developing these forecasts, NYMTC worked closely and iteratively with both Nassau and Suffolk County governments to gain consensus on their approach and findings.

Endorsed by the LIRPC. In the visioning phase of the Long Island 2035 sustainability study, the Long Island Regional Planning Council adopted the NYMTC projections as the basis for forecasting future conditions.

1.1 Localizing NYMTC's Projections

Because NYMTC's forecast was done at the county level, HR&A developed a methodology to localize the projections for 2035 at the town/sub-county level. This localization was done primarily to provide inputs to future Arup Team efforts such as the land use model, a tax and governance model and a social equity model. For detail on HR&A's methodology regarding localized projections, please refer to the appendix.

1.2 Sensitivity Analysis

Recognizing that some stakeholders have expressed concern that NYMTC's projections are optimistic, HR&A sought to understand the order-of-magnitude in which conservative assumptions might impact 2035 population. HR&A compared the NYMTC projections with other population projections and determined that the most significant differentiator is assumed population migration onto Long Island due to projected new employment opportunities. Both NYMTC and Cornell's studies provide a break-out of population growth/decline by natural increase/decrease and net migration. HR&A was able to compare the two estimates to remove migration due to new employment opportunities, and considered an alternative scenario that reduced projected 2035 population and employment by approximately 5%, whereby in-migration would not occur to fill potential new employment opportunities. HR&A recognizes this as a useful exercise for establishing sensitivity analyses throughout the study. For the purposes of accepting a baseline projection for the Long Island 2035 study, HR&A and the Arup team support the adoption of the NYMTC 2010-2035 forecast.

⁴ For more information, see *Demographic and Socioeconomic Forecasting: Technical Memorandum, Task 1.4.5.2, Modeling Methodology at County/Subregional Level*, New York Metropolitan Transportation Council, October 19, 2007. Available at: http://www.nymtc.org/project/forecasting/SED_products/2035%20Forecasts/TM%201.4.5.2.pdf

2 Recent Trends

This section examines trends related to population, demographics and employment that have affected Long Island over the past 20 years.

2.1 Population & Demographics

Population trends in Long Island, its two counties – Nassau and Suffolk – and peer geographies throughout the New York metropolitan area have implications for directing future public investments and policies to address long-term sustainability on Long Island. Key historical population trends include:

- Nassau’s population has been stable in recent years, while Suffolk continues to grow.
- There has been an overall loss in the 20-34 year old cohort.
- The population is aging, and the senior cohort (age 55+) is growing faster than regional peers.
- Long Island is becoming more diverse, but remains geographically segregated.

2.1.1 Nassau’s population has been stable in recent years, while Suffolk continues to grow.

The Long Island population has been relatively steady from 1970 to 2007 with an overall growth of 8% or 215,000 people. Looking more closely at population change by county, however, reveals some significant shifts in population. Nassau County’s population declined from 1970 to 1990 by 10%. From 1990 to 2000, Nassau’s population experienced a modest increase of 4%. Most recently, from 2000 to 2007, Nassau County population has begun to decline again. In Suffolk County, however, population has consistently grown. Between 1970 and 2007, Suffolk County population grew by 30% or 330,000 new people.

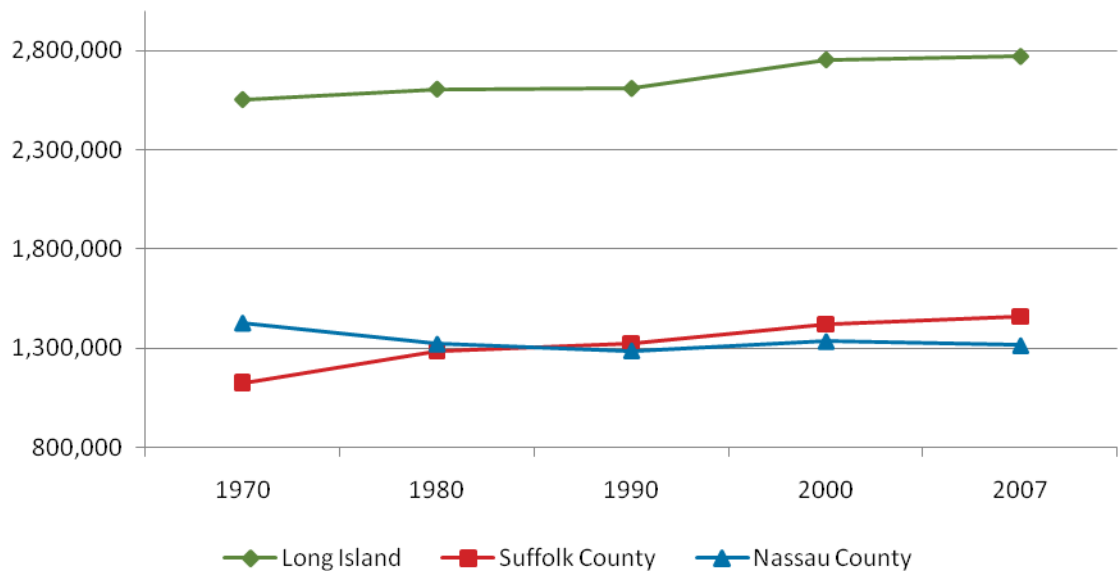


Figure 1: Trends in Long Island Population

⁵ All 1970 data derived from Geolytics Census Data CD; All 1980 data derived from Geolytics Census Data CD; All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

While overall Long Island population growth has been relatively steady, an evaluation of changes within specific age cohorts from 1990 to 2007 suggests that there have been changes to age distribution within the overall population. The 20-34 year old age group has declined significantly, shifting from 24% of the total population in 1990 to only 16% of the total population in 2007. While there are significant changes in age distribution between 1990 and 2007, overall Long Island population growth appears steady as growth in the 35-54 and 55+ age groups has offset the decline found in the 20-34 year old group.

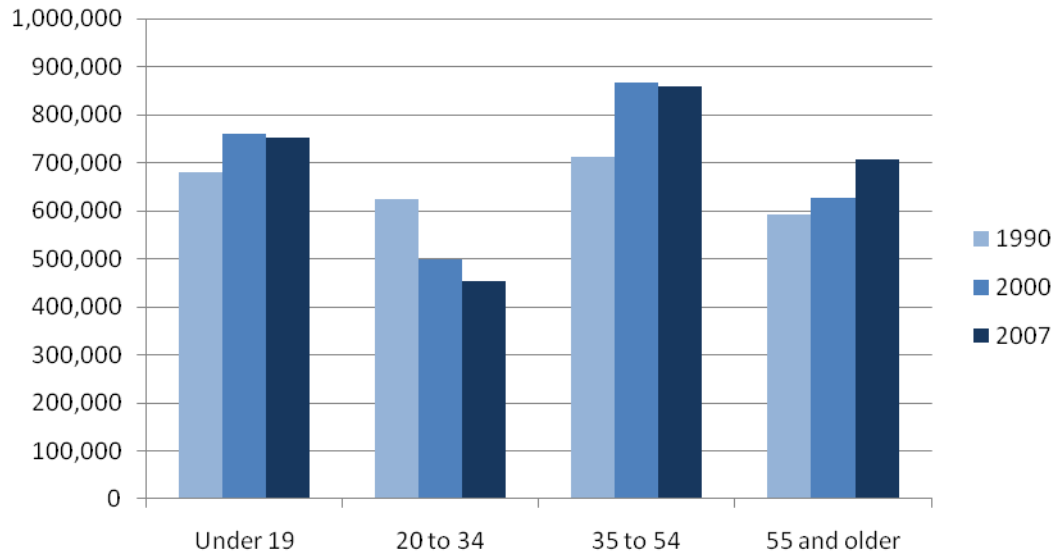


Figure 2: Change in population by age

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Long Island’s shifts in age distribution have been similar to those in peer geographies in the NY suburbs, but the trends are more pronounced on Long Island. Two major storylines emerge.

2.1.2 There has been an overall loss in the 20-34 year old cohort. When compared to peer geographies, this decline in the 20-34 year old population is not an uncommon story. This demographic trend occurred in suburban counties throughout the New York metropolitan region from 1990 to 2007 and has been occurring in New York City from 2000-2007. Long Island’s 20-34 year old decline is comparable to that in Fairfield and Westchester, but the decline in the northern NJ suburbs has been less pronounced. While some of this population change may be due to aging population cohorts, the detailed breakdown of Long Island’s population change by age group in Figure 2 demonstrates that migration also plays a factor as there is not simply an aging up of the population, reflected by the consistency of the 35-54 year old population from 2000-2007.

⁶ All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

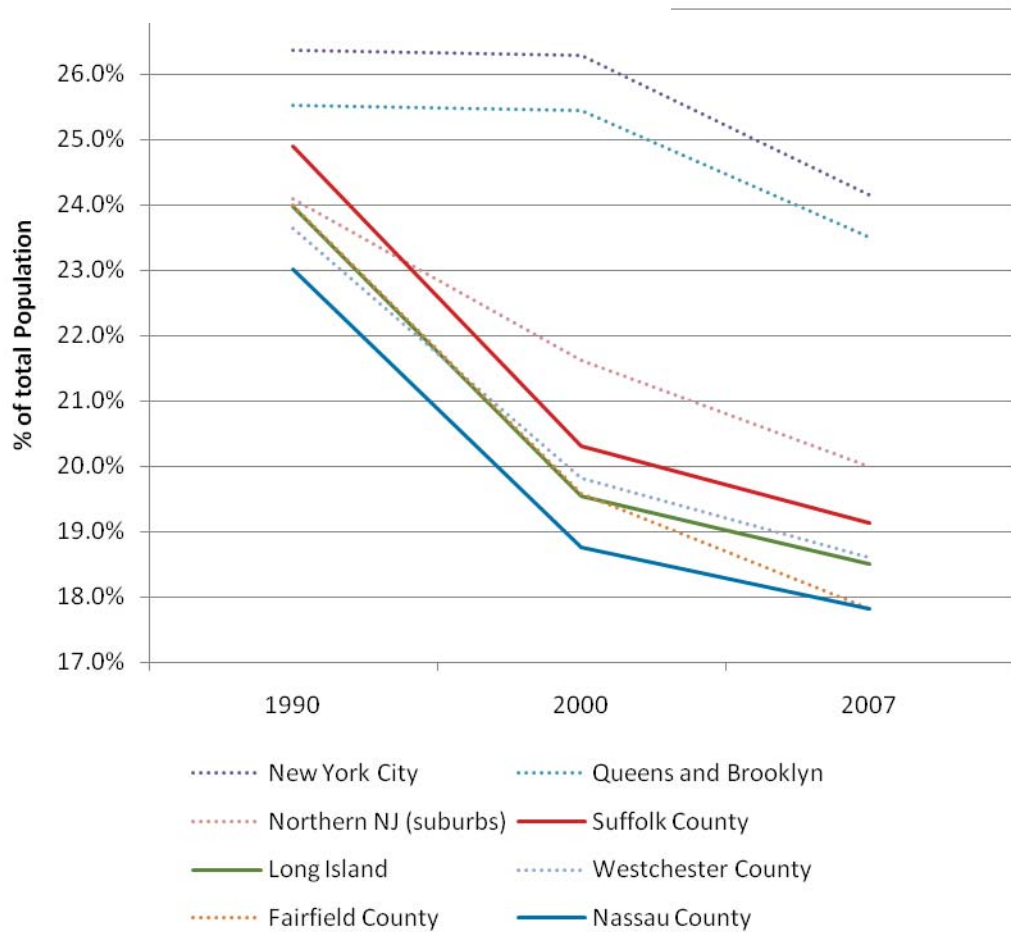


Figure 3: Change in 20-34 Year-old Population⁷

2.1.3 The population is aging, and the senior cohort is growing faster than regional peers.

The regional trend of 20-34 age group decline is coupled with another regional population trend – the growth of the senior population as a percent of overall population. While the senior population is growing as a percent of total population in other peer geographies and indeed nationally, Long Island’s growth, and particularly Suffolk County’s, in terms of percentage of total population, has been more pronounced. Overall, Long Island’s senior population has grown from 17% of the total population to 23% of total population. In Suffolk County, this population has grown even more significantly from 15% to 22% of the County’s total population (185,000 people).

⁷ All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

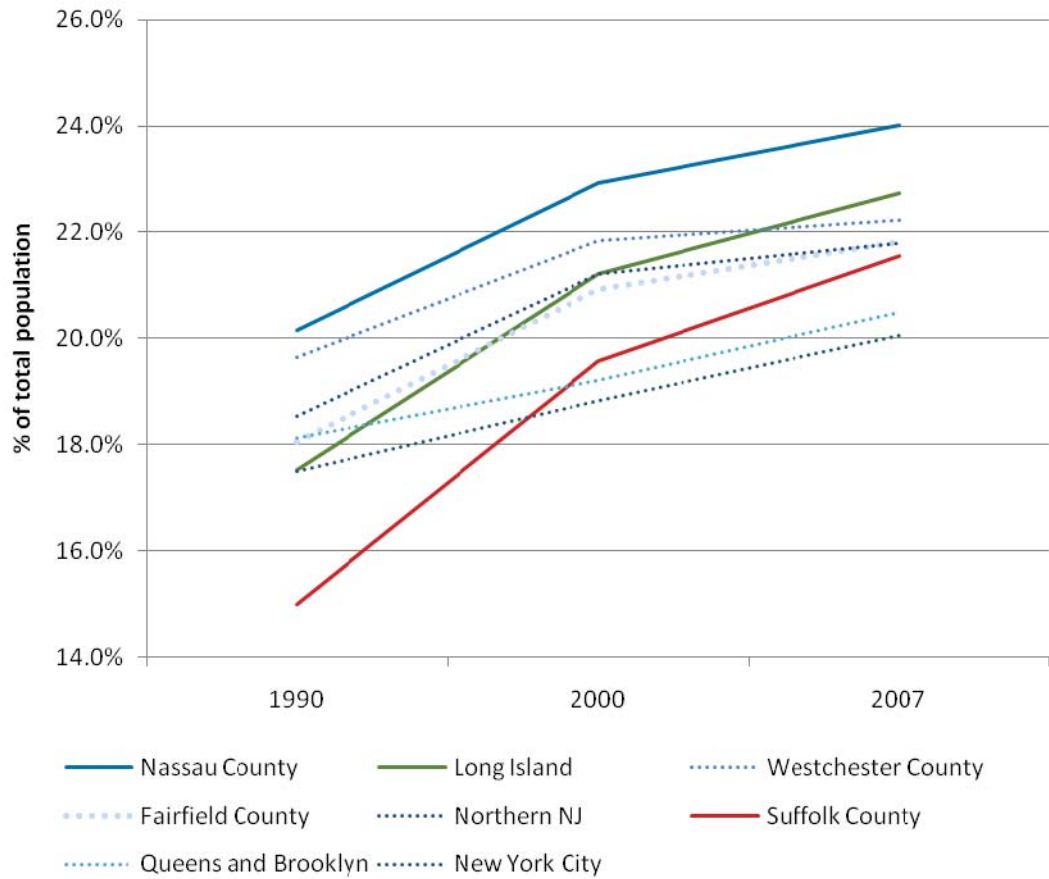


Figure 4: Change in Populations over 55 Years old

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⁸ All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

2.1.4 Long Island is becoming more diverse, but remains geographically segregated.

From 1990 to 2007, Long Island has become more racially and ethnically diverse. The non-white population in Long Island has grown to 20% of the total population from a mere 10% in 1990, and the Hispanic population has grown from approximately 5% to 10%. This increasing diversity of the overall population is not necessarily leading to more diverse demographics throughout Long Island as the non-white populations are clustered geographically. The map in Figure 7 illustrated the geographic segregation still present in the increasingly diverse Long Island population. Note that race and ethnicity are tracked separately here given Census reporting criteria.

Figure 5: Trends in Long Island Racial Diversity, 1990 - 2007

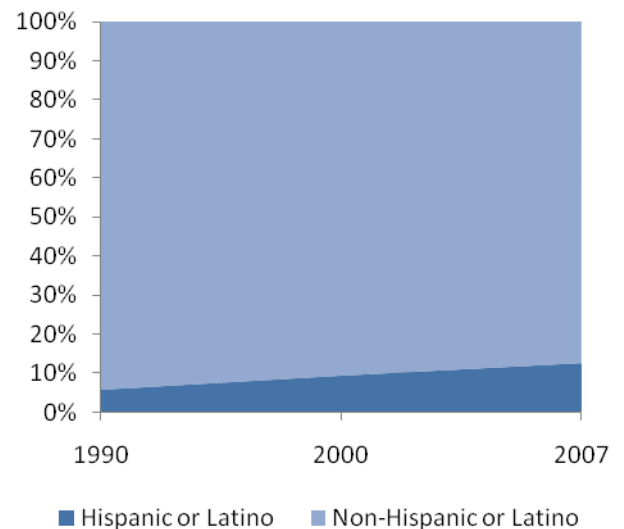
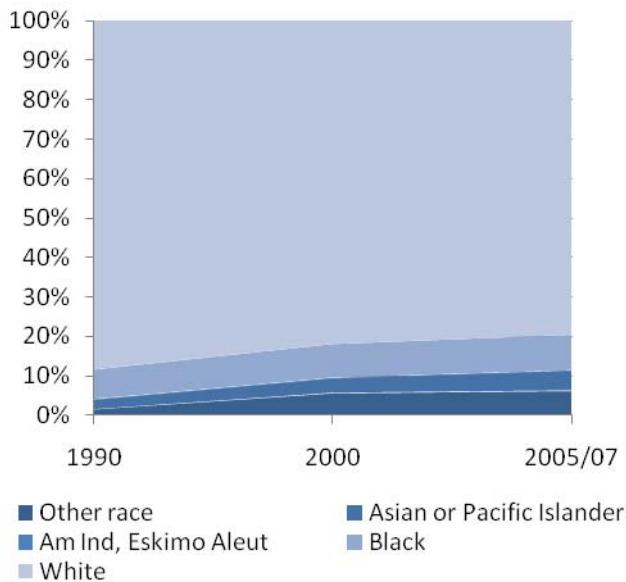
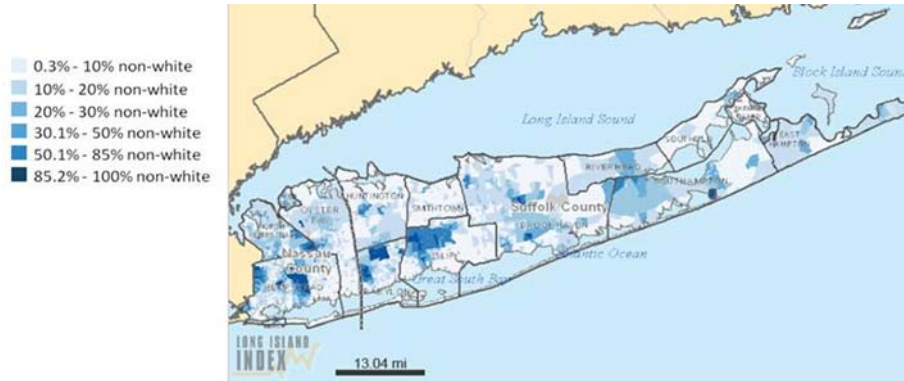


Figure 6: Hispanic Population as % of Total Population, 1990 - 2007

⁹ All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

¹⁰ All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.

Figure 7: Geographic Distribution of Non-White Population, 2000



2.2 Employment

From 2002 to 2007, Long Island employment has become increasingly dependent on locally-driven service sectors. Understanding these key trends is essential to identifying potential policies and interventions that can help to stimulate the Long Island economy and create more sustainable employment opportunities for residents.

Long Island employment opportunities are heavily dependent on service industries.

In the past 5 years, industry growth occurred in locally-dependent service industries, and declined in regionally-driven services.

This suggests a move towards lower paying jobs, as locally-dependent industries typically have lower wages than regionally-driven industries.

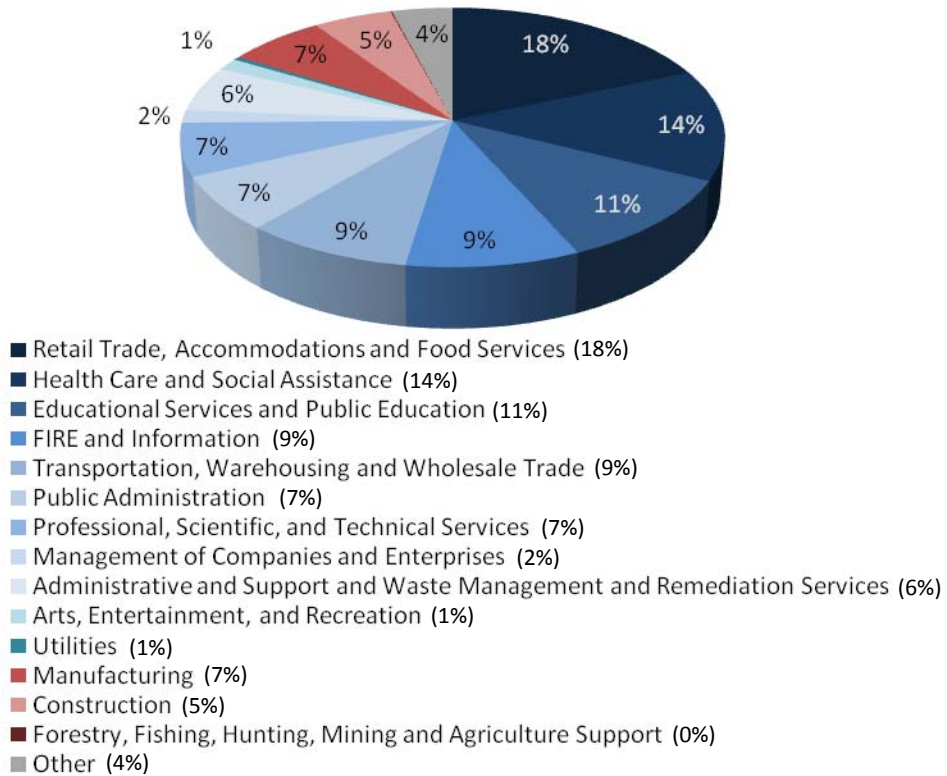
Nassau County has a large NYC commuter population, mostly working in services, government and FIRE (Finance, Insurance and Real Estate).

These trends are described below.

2.2.1 Long Island employment is heavily dependent on service industries.

Long Island's overall employment growth has been driven largely by strong growth in Suffolk County, which has occurred primarily in service industries. Figure 8 demonstrates the current distribution of employment on Long Island according to the North American Industry Classification System (NAICS). Industries were determined to be either production (shown in shades of red) or service (shown in shades of blue) based on the nature of the associated occupations. Only 12% of total Long Island employment is within production industries where as nearly 84% is within service industries.

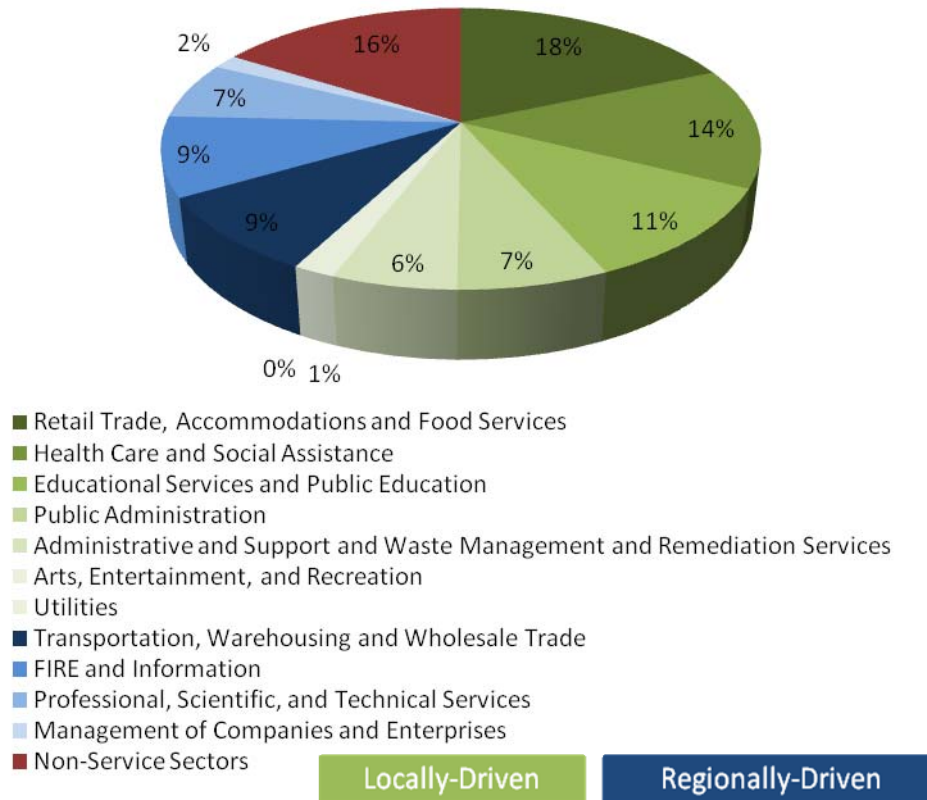
Figure 8: Employment by Industry, Production vs. Service, 2007



This distribution of employment is particularly important when the industries are further defined as either regionally-driven service industries (or export industries) or as locally-driven service industries, dependent upon local population growth or increased spending. Locally-driven service industries make up nearly 58% of total Long Island employment (shown on Figure 9 in green). This distinction is important because economic growth in Long Island is thus tied to population growth rather than the regional economy and exports. However, classification by NAICS codes may not allow for recognizing the export value of some sectors – one such example is biomedical research – which may serve as important long-term growth sectors for Long Island.

Figure 9: Service Employment by Industry, Locally vs. Regionally-Driven, 2007

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2.2.2 From 2002-2007, job growth occurred in locally-dependent service industries, and declined in regionally-driven services.

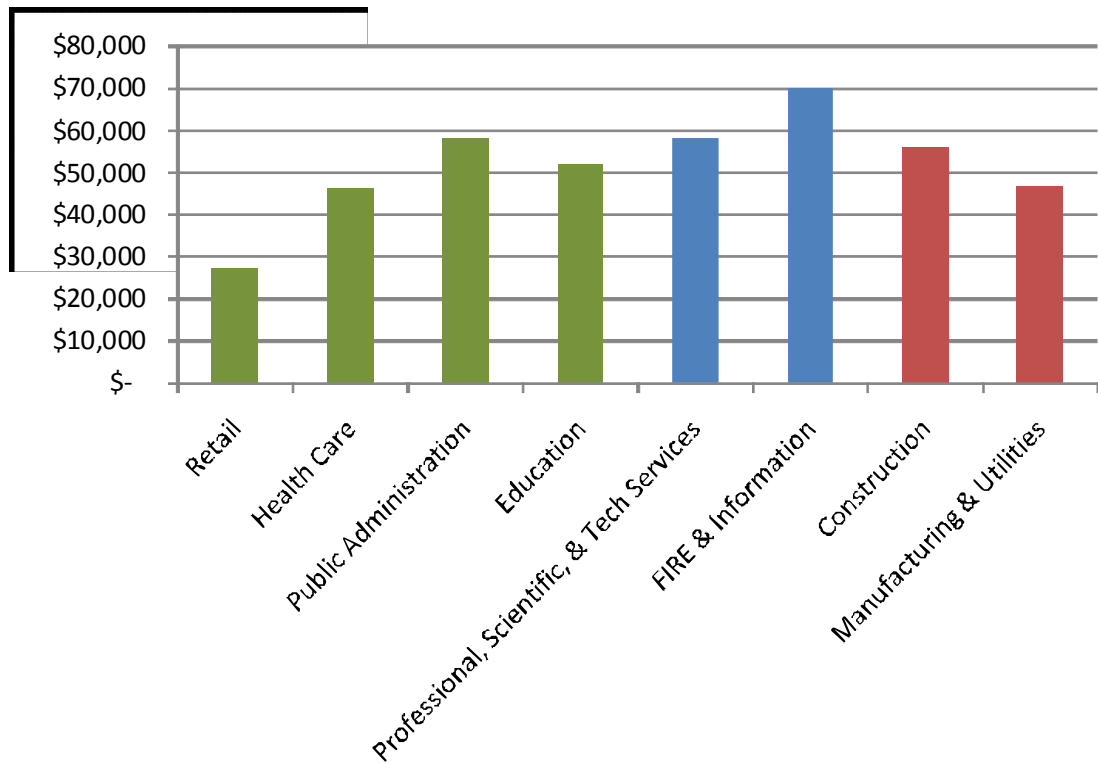
This distribution of Long Island employment is becoming more pronounced. In the last 5 years, job growth has occurred in local population-dependent service industries – from 2002-2007, locally-driven industries have grown 6% while regionally-driven industries have declined by 0.2%. In particular, jobs in the retail trade, food and accommodations, health care and social assistance and education sectors have grown significantly. Dependence on these industries that almost exclusively serve Long Island residents makes the Long Island economy susceptible to economic contraction should the population decline.

2.2.3 Locally-dependent industries typically have lower wages than regionally-driven industries.

In addition to concerns regarding dependency on local population growth, the current Long Island economic trends are leading towards lower paying occupations for Long Island residents. As Figure 10 illustrates, average wages in local population-driven industries are nearly 20% lower than those of regionally-driven industries – particularly in the growing industries of retail, health care and education. Wages are based on Long Island employment and compensation figures available through the US Census County Business Pattern Data as well as analysis of New York State Department of Labor data on public administration employee compensation.

¹¹ US Census; County Business Patterns, 2007

Figure 10: Average Wage by Industry, 2007



2.2.4 Nassau County has a large NYC commuter population; mostly working in services, government and FIRE.

Long Island's, and particularly Nassau County's, close proximity to New York City provides many employment opportunities for Long Island residents. As demonstrated in Figure 11, 32% of the Nassau workforce commuted to jobs in New York City in 2000. In particular, Long Island residents are commuting to New York City for jobs in the service, government and FIRE industries based on the Standard Industry Classification (SIC) codes.

Further evaluation of this commuting workforce could be beneficial and may identify opportunities for economic growth in Long Island by pointing to occupations and industries which Long Island has the appropriate labor force to attract but does not currently have sufficient businesses to employ all of the qualified residents – thus leading to a large commuter population. However, given the magnitude of NYC job concentration, there are likely to be NYC commuters as a permanent part of the Long Island community.

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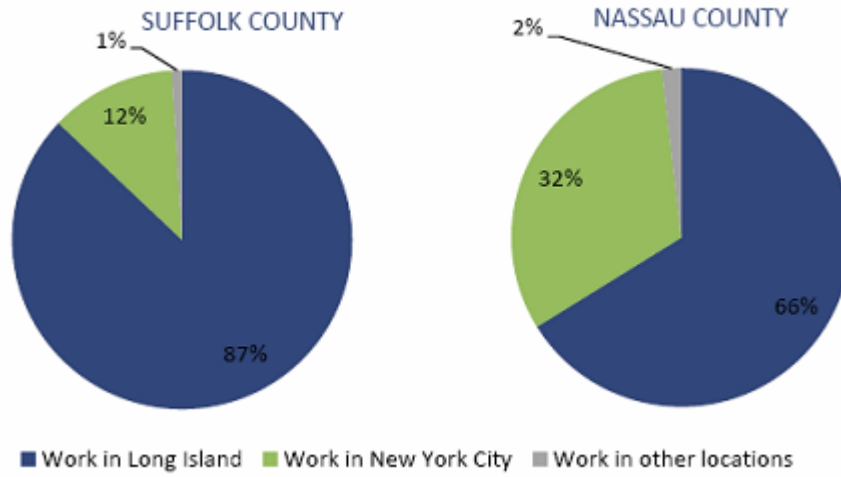


Figure 11: Place of Work- Long Island Residents by County, 2000

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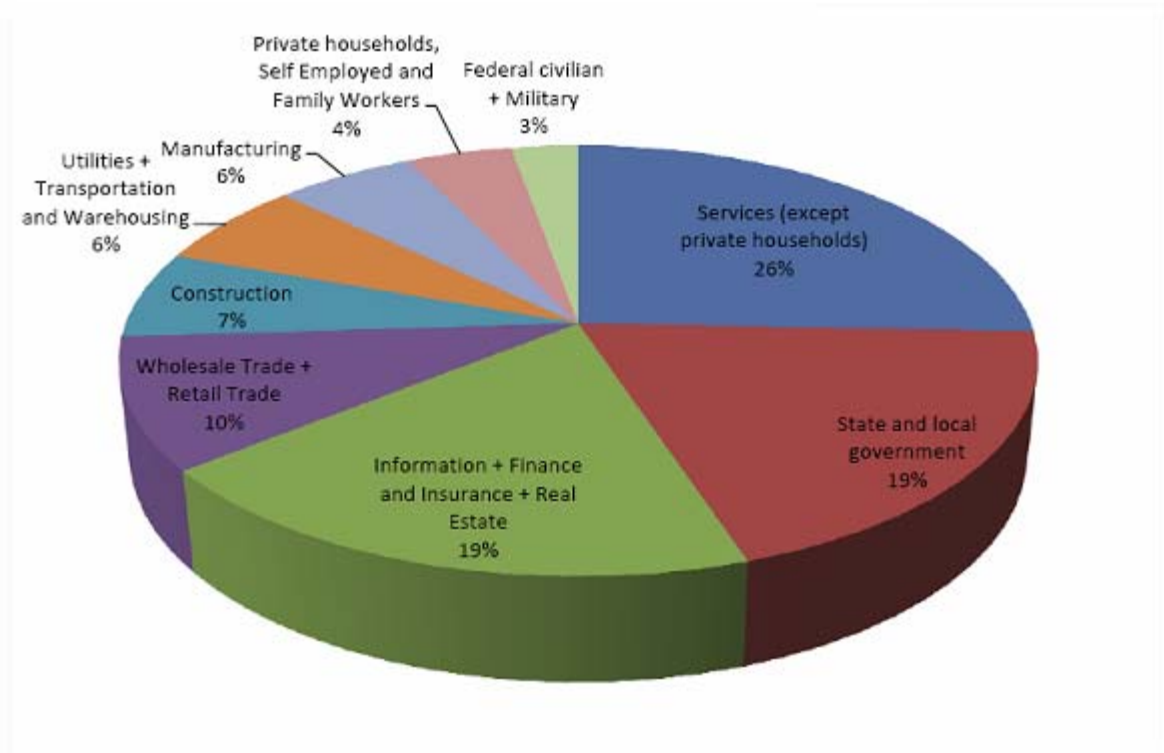


Figure 12: Employment of Long Island Residents in New York City- By Industry, 2000

¹² Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, 2000

¹³ Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, 2000

3 Population & Employment Projections

This section examines future forecasts for population, demographics and employment.

3.1 Population & Demographic Forecasts

Analysis of the New York Metropolitan Transportation Council's (NYMTC) projections of population in 2035 reveals similar themes as the historical trends analysis. In particular, NYMTC forecasts that current trends in senior population growth and Hispanic and Asian populations growth will continue, driving much of the overall population change for Long Island. These key trends from population projection analysis are described in detail below.

Population growth is projected in both Nassau County and Suffolk County.

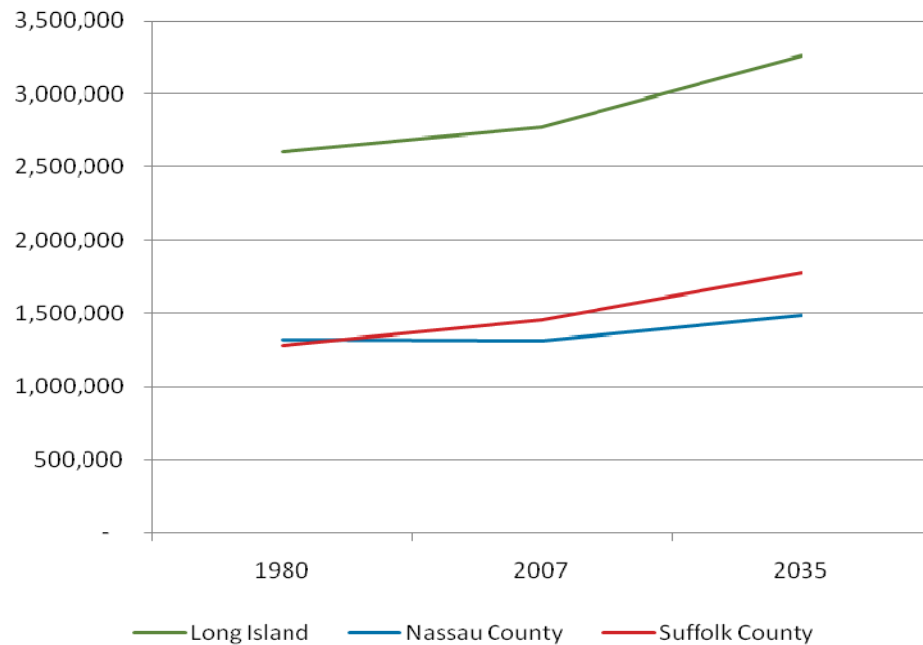
As the population ages, expected growth in the senior population drives major change to the overall Long Island population.

Current growth of the Hispanic and Asian population is expected to continue in many Long Island towns.

3.1.1 Population growth is projected in both Nassau County and Suffolk County. NYMTC forecasts almost 500,000 new residents in Long Island from 2007-2035. This projected population increase will occur in both Nassau and Suffolk County but, as seen initially, in the historical trends analysis, Nassau County growth is projected to be less significant than the more rapid growth of Suffolk County. The 500,000-person growth throughout Long Island will be spread among the 13 towns and two cities that make up the two counties.

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Figure 13: NYMTC Population Forecast

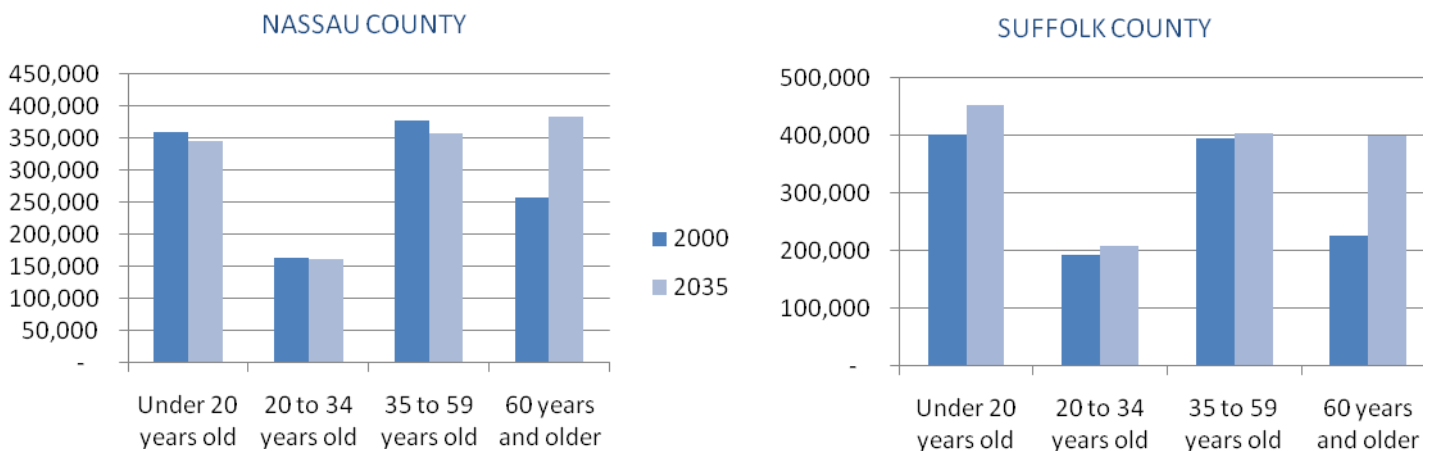


¹⁴ 2010-2035 Regional Transportation Plan: A Shared Vision for a Shared Future, New York Metropolitan Transportation Council, 2009. Available at: <http://www.nymtc.org/rtp/default.aspx>

3.1.2 As the population ages, expected growth in the senior population drives major change to the overall Long Island population.

The most significant change in age distribution will be the growth of the senior population. Projections assume that the senior population, persons aged 60 years or older, will account for 68% of the overall population growth. Figure 14 illustrates the change in population for each age cohort for both Nassau County and Suffolk County. In Long Island as a whole, the senior population is projected to increase from 17% of the total population in 2000 to 25% of the total population in 2035.

Figure 14: Change in Age Distribution from 2000 to 2035 by County

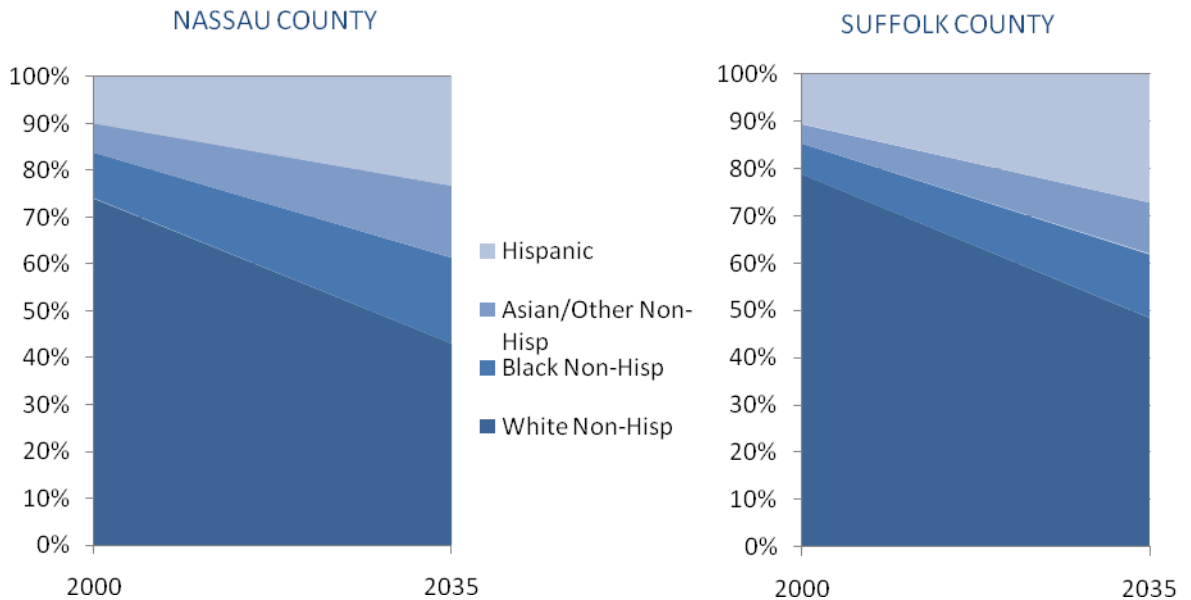


3.1.3 Current growth of the Hispanic and Asian populations is expected to continue throughout Long Island.

Historical trends indicated that Long Island’s population has become increasingly diverse, with increases in both non-white and Hispanic population from 1990 to 2007. Projections of racial and ethnic distributions by county in 2035 indicate that this trend is likely to continue. Expected changes in demographics between 2000 demographic data and forecasted 2035 population are dramatic. An in-migration of non-white populations and Hispanic populations and an out-migration of the White/non-Hispanic population will significantly change Long Island demographics. Non-white populations are projected to grow by 142%, Hispanic populations are expected to grow by 178% and the White/Non-Hispanic population is expected to decline by 33%. In 2000, the African-American/non-Hispanic, Asian/Other/non-Hispanic, and Hispanic populations represented only 24% of the total population whereas, in 2035, they are projected to represent 54% of the total population.

Figure 15 illustrates the projected change in racial and ethnic population distribution that is expected in Nassau County and Suffolk County. In these charts, ethnic and racial demographics are differentiated by characterizing the population in the following categories – Hispanic, Asian/Other Non-Hispanic, Black Non-Hispanic, White Non-Hispanic.

Figure 15: Change in racial and ethnic population distribution from 2000 to 2035 by county



Sensitivity Analysis

Recognizing that some stakeholders have expressed concern that NYMTC’s projections are optimistic, HR&A sought to understand the order-of-magnitude in which conservative assumptions might impact 2035 population. HR&A compared with other population projections and determined that the most significant factor in play is population migration onto Long Island due to projected new employment opportunities. Both NYMTC and Cornell’s studies provide a break-out of population growth/decline by natural increase/decrease and net migration. HR&A was able to compare the two estimates to remove migration due to new employment opportunities, and considered an alternative scenario that reduced projected 2035 population and employment by approximately 5%, or approximately 175,000 fewer total people in 2035.

HR&A recognizes this as a useful exercise for establishing sensitivity analyses throughout the study. For the purposes of accepting a baseline projection for the Long Island 2035 study, HR&A and the Arup team support the adoption of the NYMTC 2010-2035 forecast.

3.2 Employment Forecasts

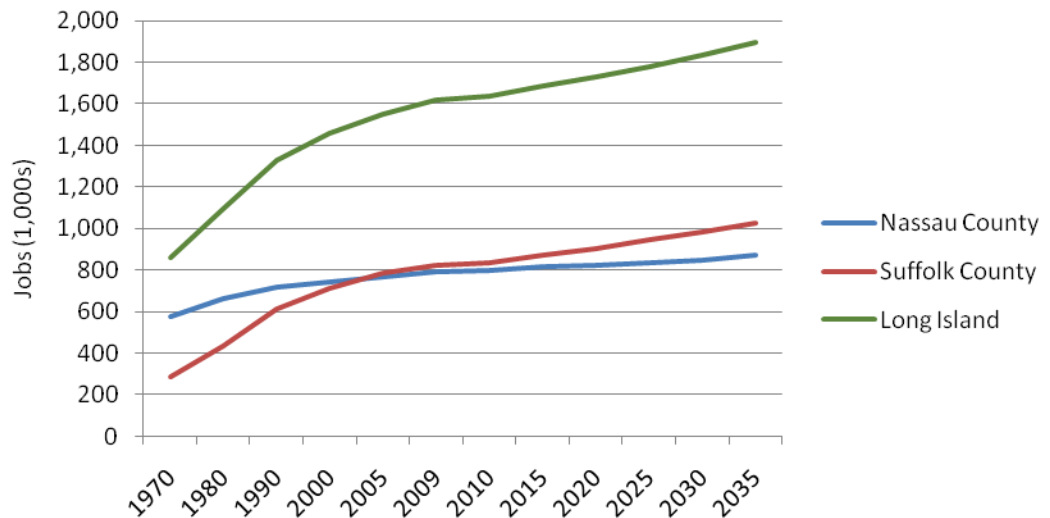
Long Island employment is projected to grow from 2009 to 2035. The vast majority of this employment growth will occur in Suffolk County, consisting primarily of jobs within the professional & business services, leisure & hospitality, education & health services, and government sectors. Analysis of forecasted changes in employment by sector reveals the following key findings:

- Long Island is projected to add over 275,000 jobs by 2035, with 73% of this growth in Suffolk.
- Professional & business services, leisure & hospitality, and education & health services will grow significantly; dominating the local job market, alongside government employment.

3.2.1 Long Island is projected to add over 275,000 jobs by 2035, with 73% of this growth in Suffolk.

NYMTC projects that the Long Island economy will grow by over 275,000 jobs by 2035. As with estimated of population growth, the majority of the new jobs forecast for Long Island are expected to be in Suffolk County. Nassau County’s increase in employment is much slower and represents only 25% of the total employment increase expected.

Figure 16: Projection of Total employment, 2035

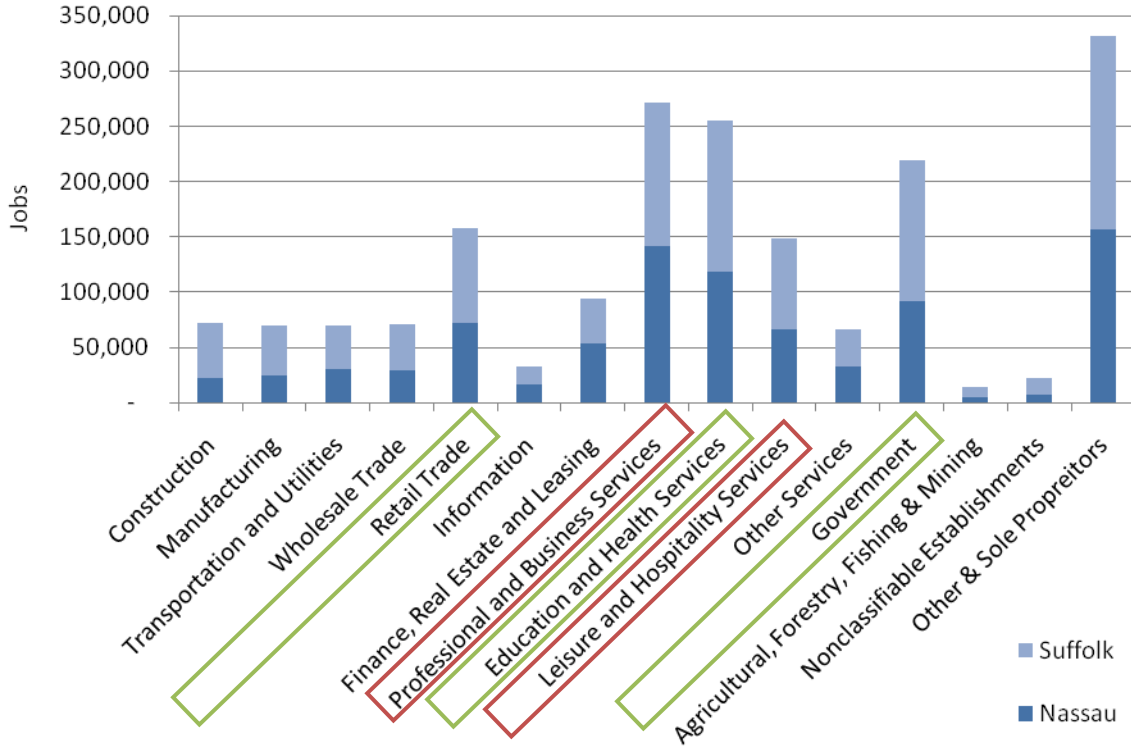


3.2.2 Some staple sectors of the economy will remain so, while other sectors will grow more competitive.

Staple industries in the Long Island economy are projected to remain significant sources of employment and drivers of the Long Island economy. These sectors include retail trade, education and health services and government. In 2005, these sectors made up 45% of the total Long Island economy; in 2035, they are projected to comprise 42%. Other sectors are projected to grow to represent a larger percentage of total Long Island jobs than today. These sectors, which include professional and business services and leisure and hospitality, represented 20% of the total Long Island economy in 2005 whereas in 2035, they are projected to comprise 28%; that change represents an overall increase of over 176,000 jobs

and a total increase of nearly 50%. In figure 17 below, the *staple sectors* are indicated with a green box and the *growing sectors* are indicated with a red box.

Figure 17: Long Island Jobs by Sector, 2035



3.2.3 Professional & business services, leisure & hospitality, and education & health services will grow significantly; dominating the local job market, alongside government employment.

The largest employment growth is expected to occur in the professional and business services industry, with nearly 100,000 new jobs expected between 2010 and 2035. Leisure and hospitality services and education and health services are also expected to increase with over 40,000 new jobs from 2010 to 2035 each. These projected trends will hold many current economic conditions in Long Island steady with the some of the largest employment industries such as education and health services and government being locally-driven service sectors as identified in the historical trends analysis.

Figure 18: Long Island Job Growth by Sector, 2010-2035

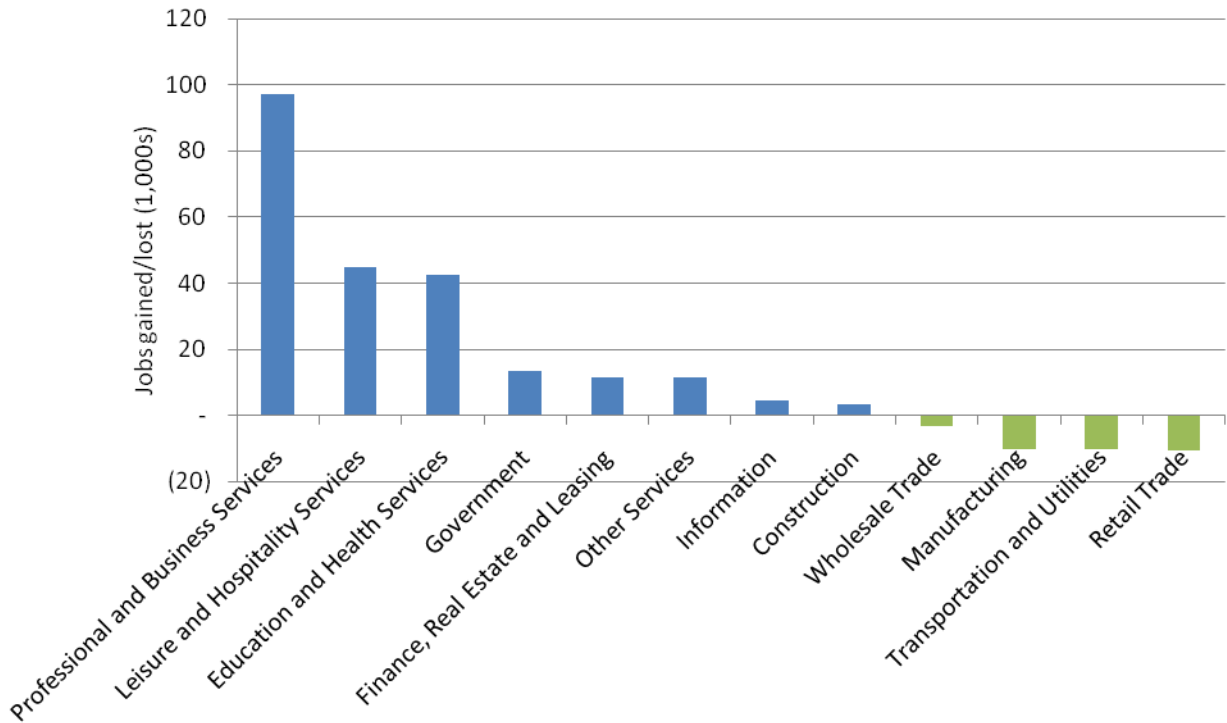
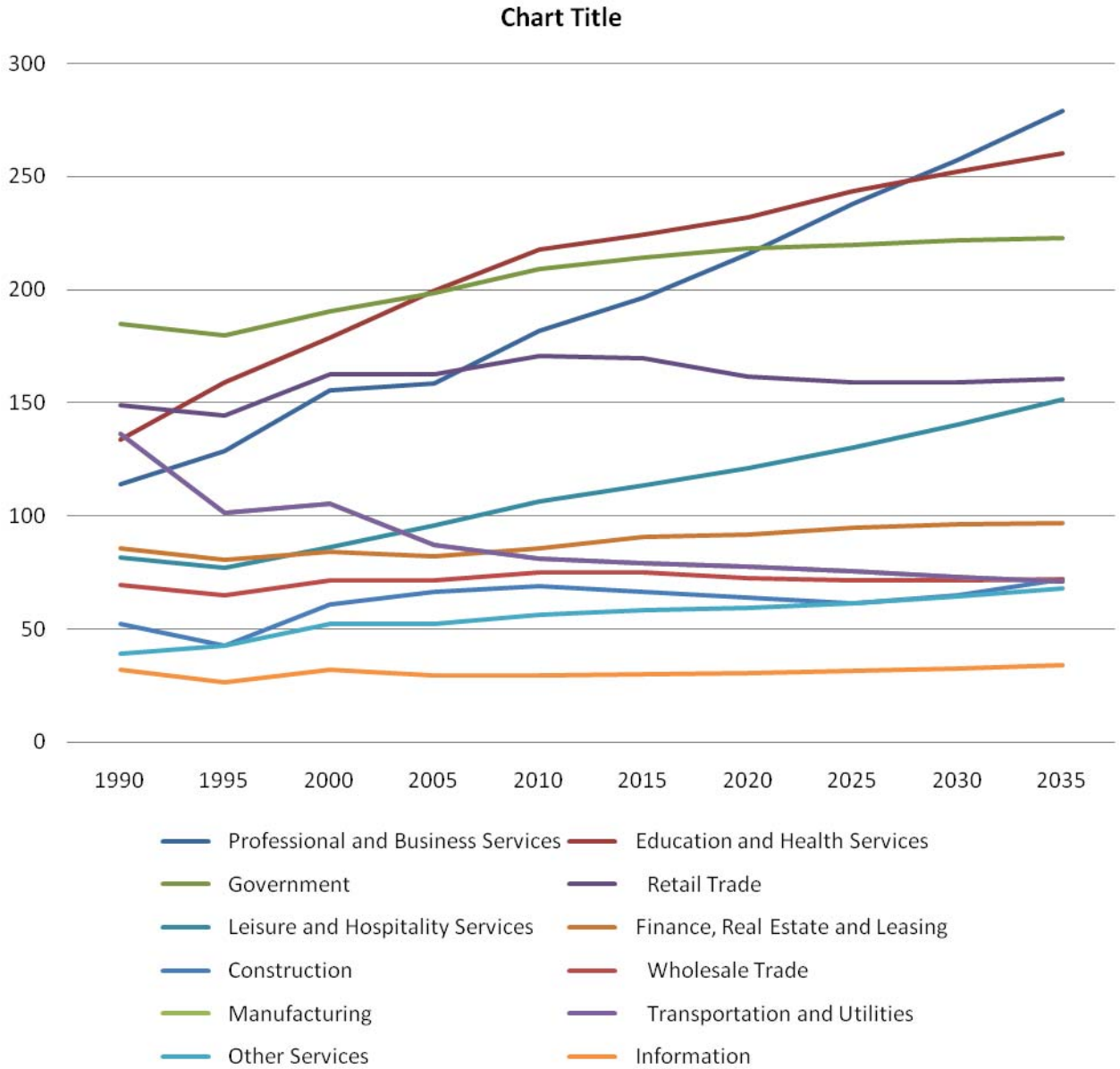


Figure 19 best demonstrates this dynamic by illustrating how the most of the industries with high employment currently will continue to grow and remain a large percentage of the overall Long Island employment whereas most industries that represent a small percentage of current employment will experience little growth and remain a small percentage of overall Long Island employment in 2035. There are only a few exceptions to this trend: the leisure and hospitality sector is forecast to experience significant growth, launching it as one of Long Island’s top industry sectors, whereas retail trade is not projected to grow as quickly as other sectors causing it to slip from the third largest employment sector to the fourth, well behind professional and business services, education and health services and government in 2035.

Figure 19: Long Island Job Growth by Sector, 1990-2035



3.2.4 Sensitivity Analysis

Similar to the sensitivity analyses undertaken with the population projections, HR&A's estimates to remove migration due to new employment opportunities suggest an alternative scenario that reduces projected 2035 employment by approximately 5%, or approximately 14,000 fewer jobs in 2035.

HR&A recognizes this as a useful exercise for establishing sensitivity analyses throughout the study. For the purposes of accepting a baseline projection for the Long Island 2035 study, HR&A and the Arup team support the adoption of the NYMTC 2010-2035 forecast.

4 Conclusion

Long Island's economic and demographic trends highlight a number of challenges and opportunities for Long Island's long-term sustainability, as well as policy choices that must be confronted in the near term.

Most fundamentally, the LI 2035 Plan must set a framework for how to strike a balance between cost and quality of living and working on Long Island. The high cost of living and working on Long Island, as reflected in housing costs, taxes at all levels of government, energy and transportation are a significant impediment to attracting and retaining businesses and residents. Paradoxically, the high quality of education in many Long Island communities, a well-educated workforce, self-governed villages, and the natural qualities of the "Island" lifestyle, all of which are drivers of these cost, have historically been the main attractors of businesses and residents to Long Island.

4.1 Changing Population & Demographics

As the nation's "first suburb," Long Island now faces challenges and opportunities associated with an aging population, attracting and retaining young, motivated workers, and population diversity fueled by immigration. Key policy considerations include:

1. How can Long Island address the needs of the growing senior population?

Long Island will need to expand its capacity to serve a senior population, including health care, housing, and mobility options. This suggests an opportunity area for the growth of the healthcare sector, as well as growth in demand for housing options, such as smaller housing units in denser areas with more supporting transportation infrastructure, which may ultimately result in less dependent on the automobile for mobility.

2. How can Long Island improve its attractiveness to 20-34 year olds?

Similar to the senior population, Long Island will need to diversify its housing types to attract younger residents who form the foundation of the labor force. This will mean introducing more affordable and workforce housing, apartments, and opportunities for downtown living among greater entertainment amenities. Though somewhat of a chicken-and-egg paradigm, Long Island will also need to create employment opportunities attractive to this age group. Collaborations between local colleges and universities may create opportunities for bridging the gap between higher education and new employment.

3. How will Long Island capitalize on an increasingly diverse community?

A more diverse population allows for a wider set of cultural experiences, labor skills, and entrepreneurship, which can be positioned into a significant economic asset for Long Island. As its population becomes more diverse including through immigration, Long Island will need to connect housing, employment and transit opportunities to meet the needs of the new population. Both housing and employment base will need to diversify. Long Island will need to ensure that its social support infrastructure and educational systems address a wider range of needs, while mitigating potential fiscal impacts of meeting those needs.

4. How can Long Island accommodate growth in a means that mitigates negative environmental impacts, stresses on infrastructure, and increased governmental costs?

Long Island will need to respond with a new model for development, identifying nodes to channel proposed economic and residential growth that make more efficient use of Long Island's scarce land through infill and brownfields redevelopment near existing infrastructure. Such development will likely be denser and provide a greater diversity of housing types and costs than common on most of the Island.

4.2 Building a Climate for Economic Growth

1. How can Long Island attract new businesses? What steps can it take to support and attract export industries?

Many argue that Long Island must foster a climate more conducive to economic growth, by reducing costs of doing business (primarily taxes), providing critical infrastructure investments (e.g. East Side Access or a third track on the LIRR), and educating a workforce with skills that match employers' needs. Long Island will need to confront these critical challenges to retain existing jobs and target new businesses to attract to the region by leveraging its competitive advantages including an educated workforce, quality of life, and proximity to New York City.

2. How will Long Island educate its workforce to meet the demands of a changing economy?

Long Island will need to identify target growth areas in its employment base and, working with local colleges and universities, build a plan to respond to the workforce training needs required to stay regionally competitive for those target industries. Long Island must also wrestle with the challenging paradox of its need to reduce property taxes despite its high value on the education of its youth.

3. How can Long Island better leverage its proximity to New York City to advance its economy?

Long Island's past role as a bedroom community to Manhattan has created an educated local workforce, though many must travel to the City for employment. Through investment in its transportation infrastructure, Long Island must seek to make New York City even "closer" by reducing travel times and increasing the appeal of mass transit. Increased collaboration between Long Island and New York City governments, businesses and institutions should seek to leverage opportunities on Long Island for business incubation, expansion, and support of the New York City industrial base.

4. How can Long Island leverage its natural resources to advance its economy?

Long Island's open space, beaches and fresh air made it a refuge for urbanites, and continues to serve the overall quality of life on the island. Long Island will need to better leverage these resources to capture opportunities for increased tourism, leisure and recreation. It will need to seek to both maintain its resources despite stresses placed on it from population growth, but also create new places for recreation and relaxation. Finally, these special places may hold significant value in attracting and retaining the island's youth, by focusing on new models for downtown living that build upon surrounding natural features.

5. How will Long Island ensure affordable and more diverse housing to make it a viable home for the labor force?

Ensuring the viability of new, diverse housing options will continue to be a great challenge for Long Island. State and county policies will need to bring "carrots and sticks" that incentivize local towns, villages and developers to shift development models to introduce greater housing diversity in terms of product type and price points, including new housing clustered in multi-use downtowns.

These opportunities and challenges suggest a framework for the LI 2035's development of policies and implementation vehicles to accommodate population growth, demographic change and foster an overall climate for sustainable economic growth on Long Island, and will serve to guide the team's upcoming stages of work.

5 Appendix

NYMTC's forecast already accounts for a number of variables, including overall population growth/decline, overall changes in demographics, total net migration, and regional changes in employment and industry. Therefore, the central task of localizing the NYMTC's forecast was determining each town's *share* of that growth or decline. The following variables were used in the localization procedure:

- **Population & demographics.** HR&A used a population cohort approach, similar to the model employed by NYMTC, and established a cross-tabulation of race/ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Asian/Other Non-Hispanic, Hispanic) by 5-year age cohorts.
- **Economy:** For the purpose of utilization as an input to the Arup team's land use model, HR&A segmented industry sectors into three groups: (1) government, institutional, education & healthcare, (2) industrial, and (3) other. These groups were selected because they allow for projections of land use and governmental/fiscal considerations.¹⁵

For the purposes of explaining the methodology, these demographic and employment segments (e.g. White/Non-Hispanics in the 40-45 cohort, industrial employment, etc.) are hereby referred to as X.

For each X segment, HR&A distributed the county's growth or decline in that segment to the town level, based on the town's current-day share of the county population for X. The critical assumption employed in this approach is that location preferences by age, race/ethnicity, or industry will stay *comparatively* similar over time. In other words, the distribution assumes that a town that in 2007 was attractive to a specific age, racial/ethnic cohort or industry will remain so in relative comparison to other towns in the future. This allows for growth to accrue at different rates from town to town, but does not allow for a shift in those preferences.

The localization methodology consisted of 3 main steps:

1. **Determine towns' 2009 share of X.** Using Census 2000 town-level data for age, gender and race/ethnic make-up, and Claritas 2009 market data for town-level employment counts, HR&A calculated each town's share of X out of the total county.
2. **Calibrating NYMTC datasets.** NYMTC provided two relevant layers of forecasting data: (a) county-level totals for population and employment, and (b) Long Island-wide data for population by age, gender and race/ethnic cohorts, and Long Island-wide data for employment by specific industries. HR&A utilized 2009 county ratios for each X variable to share the detailed dataset (b) to the county level, and then calibrated those totals to match county-level totals in dataset (a).¹⁶
3. **Project town distributions in 2035.** Based on the town's share of X in the county in 2009, HR&A attributed the growth or decline of X in the county through 2035. HR&A then compared these findings with Suffolk County's designated growth area projections, as well as NYMTC's Transportation Analysis Zone projections.

¹⁵ For the purpose of economic policy analysis within the LI 2035 sustainability plan, it was deemed that NYMTC's regional level was sufficient.

¹⁶ Minor adjustments were required for agricultural and mining jobs and non-classifiable establishments. Calculations were made to share sole proprietors by industry by county, as well.

The localized data was then utilized to provide inputs to other components of the Long Island 2035 projections analysis, including the land use model, a tax and governance model, and a social equity model.