

TRANSPORTATION, ECONOMIC DEVELOPMENT AND HOUSING STRATEGIES FOR SUFFOLK COUNTY

BACKGROUND DOCUMENTATION Suffolk County Comprehensive Master Plan 2035

Suffolk County Executive
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1. INTRODUCTION

Suffolk County is at a turning point in its history; the existing pattern of low-density residential development with scattered single-use commercial areas can no longer be sustained by the network of transportation, water, and wastewater infrastructure. The existing pattern cannot easily accommodate any additional residential growth or economic development and is not resilient to large-scale disruption such as that caused by Superstorm Sandy. Suffolk County (the “County”) has numerous qualities that make it a desirable location to live, work, and play. Its proximity to New York City, coupled with excellent connectivity by mass transit and the island’s roadway network (e.g., Long Island Expressway, Northern and Southern State Parkways, and other arterial state and county roads), make it attractive to residents, businesses, and tourists. Amenities readily available in the County include; numerous state and local parks and open spaces; world renowned beaches; a broad variety of colleges and universities; a burgeoning winery and agribusiness industry; historical sites; myriad shopping opportunities (from specialty, one-of-a-kind retail stores to destination outlet malls); high-tech technology centers (e.g., along the Route 110 corridor and Brookhaven National Laboratories, etc.); and various other attractions. All of these assets contribute to making Suffolk County the vibrant, dynamic place that it is. However, planning for the future will require a careful balancing of the relationship between land use, the overall economy, traffic and transportation systems, and natural and built resources. Gone are the days when regulations and investments in infrastructure should favor single-family residences and large, single-use regional stores and shopping centers scattered across the County.

Decades of sprawl-like growth, beginning after World War II, have culminated in increased traffic congestion on major and local roadways in Suffolk County—with its toll on quality of life (i.e., frustrating travel times, limited economic opportunities, excess noise and air pollution)—as residents are forced to travel by single-occupant vehicles long distances between their homes and employment areas. Reversing this trend by bringing centers of employment and residential neighborhoods together at higher densities to make mass transit, by bus or rail, not only more viable, but also the preferred mode of connectivity between them, will reduce traffic congestion, improve environmental quality, and enhance quality of life and productivity.

The County is already undertaking efforts to facilitate this change through the *Connect Long Island* initiative, and its *Bus Rapid Transit Feasibility Study*. Similarly, the Long Island Rail Road’s Double Track project between Farmingdale and Ronkonkoma will facilitate more efficient

movement of people to and from work, in both traditional and reverse commuting directions. The construction of new Regional Transit-Oriented Developments (TODs) such as Heartland Town Square, Wyandanch Rising, and the Ronkonkoma TOD will go a step further by recreating the traditional, pre-1960s, mixed-use developments in vibrant downtown areas where people can live, work, shop, and play by walking or biking, avoiding automobile use and its associated congestion entirely. The expansion of sewer systems to serve these new concentrated developments (e.g., as has occurred in Wyandanch, and is proposed for the Ronkonkoma HUB project) will help to protect the quality of Suffolk's underground aquifer, its drinking water supply. Similarly, preserving Suffolk County's open space, while simultaneously encouraging these more densely-developed areas, will help to optimize the availability of a high-quality water supply for decades to come; and also help to improve surface water habitat conditions that are crucial for healthy shellfish and finfish populations. Concentrated densities in smart, transit-oriented communities can also reduce overall land demand, protect land affordability, and ensure the continued viability of Suffolk County's vibrant agricultural industry.

Because of the vast amount of shoreline bordering Suffolk County, this unique asset also brings a set of challenges that must be addressed to ensure that communities that could be most affected by storm waters are prepared and more resilient. In the wake of Superstorm Sandy in October 2012, it has become apparent that it is more important than ever to plan for community resiliency. Ensuring that systems and facilities are resilient in the face of natural disasters has a direct bearing on the economic prosperity of a region. The more resilient such systems and facilities are, the more likely the region would fare well in a natural or other disaster and be able to move forward without undue economic damage in the aftermath. Disruptions to basic services such as water and electricity can have devastating effects that can put many people out of work for an extended period of time. Also, the costs necessary to repair or replace businesses, housing, and infrastructure can be prohibitive. It is for these reasons that policies, programs, and/or initiatives related to economic development need to also incorporate consideration of how to better achieve resiliency. In the wake of Superstorm Sandy, the Suffolk County Department of Economic Development and Planning and the Suffolk County Planning Commission undertook this comprehensive planning effort to produce the *Suffolk County Comprehensive Master Plan 2035*.

1.1. SUFFOLK COUNTY: YESTERDAY AND TODAY

Suffolk County consists of about 980 miles of coastline and 912 square miles of land area. The County is made up of 10 towns (Huntington, Babylon, Smithtown, Islip, Brookhaven, Riverhead, Southold, Southampton, East Hampton and Shelter Island) and 33 incorporated villages.

Prior to 1950, much of Suffolk County was characterized by a network of small villages located along the Long Island Rail Road lines and supported by the fishing and agricultural industries. In the decade between 1950 and 1960, fueled by national housing and transportation policies that favored suburban tract development, the landscape of the County began to be transformed as the population of Suffolk County increased from 275,000 to 666,000 residents -- an unprecedented 140 percent (see **Figure 1-1** which shows population trends for Suffolk County’s ten towns). The population explosion of the 1950s and 1960s resulted in record-breaking single-family home construction, the emergence of strip mall developments, and the extension of the highway system—the Long Island Expressway and the Northern and Southern State Parkways. The car was king, and Suffolk County’s transportation infrastructure developed accordingly. However, the decades that followed saw a drop in the annual growth rate, down to single digits.

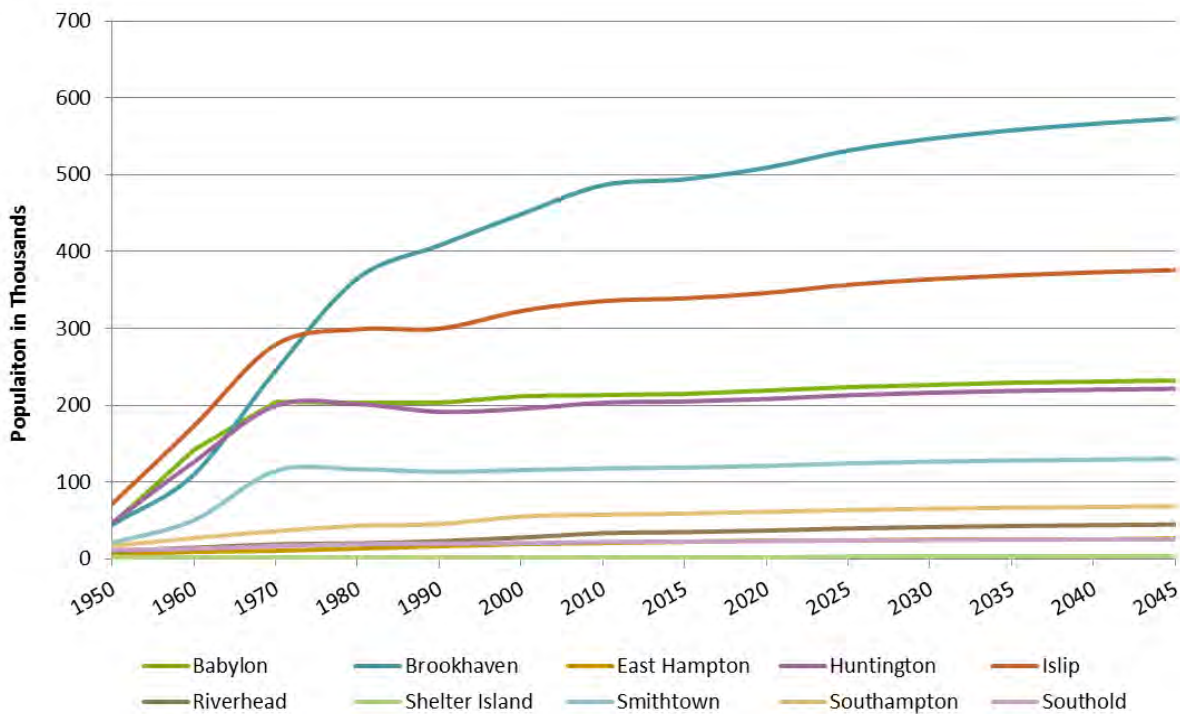


Figure 1-1: Historic and Projected Population for Towns in Suffolk County
 Sources: U.S. Census, New York Metropolitan Transportation Council (NYMTC), and Suffolk County Division of Planning and Environment

The most recent Census data indicate a population of about 1.49 million. According to Suffolk County Planning, current population trends suggest that by 2035, approximately 1.65 million residents will live in Suffolk County. The transportation infrastructure designed for a Suffolk County with 750,000 residents cannot meet the needs of a future population that is 2.2 times greater.

The demographic profiles and trends that characterize the County help define projected future growth and development and the associated demand for new transportation services. Suffolk County's population has increased by 5.2 percent since 2000. Its population has continued to age and become more diverse over the last decade.¹ Based on population projections, the County is expected to grow by 11 percent, or approximately 160,000 persons by the year 2035. As the County's population profile continues to evolve and the population grows, so does the need for new and additional amenities such as improved public transportation, a variety of housing options, and economic growth and opportunity.



Like the rest of the country, shifts in demographics are changing the composition of Suffolk County. The County's overall birth rate has dropped; the average age has increased. The average household size has decreased to 2.93 persons; and nearly 30 percent of all households in Suffolk County contain a senior citizen. On an

upward trend since the 1940s, the continued entry of increasing numbers of women into the work force has increased the overall numbers of Suffolk County residents commuting to and from work every day. The Suffolk County of 2014 is far more racially and economically diverse than that of past decades.

Today, Suffolk County is characterized as a largely suburban and residential county with a mix of commercial and industrial uses that are interspersed with a variety of recreational opportunities and valuable natural features. As you head from West to East, it becomes clear that Suffolk County has retained the open spaces, agricultural lands, and fishing and beach communities that have fueled quality of life standards on Long Island for decades. It is these

¹ These figures do not account for the significant seasonal population that exists within the five East End towns (Riverhead, Southold, Southampton, East Hampton and Shelter Island) and on Fire Island.

unique attributes that have drawn people to live, work, and play in Suffolk County. Given the County's physical shape and existing infrastructure, development has, and continues to occur in a scattered and sprawled fashion over the whole County. This development pattern—although changing in the face of the alarming population losses from the area's young adults, dwindling open space preservation opportunities, and an overall desire to live more sustainably and less on non-renewable resources—results in traffic congestion and pollution, a reduction in open spaces, and an increased tax burden for residents, without reaping the benefits of commensurate and corresponding improvements in quality of life. In addition to addressing development patterns in the County, other critical issues that must be addressed include aging wastewater infrastructure, preventing the degradation of surface and groundwater quality, impacts to Suffolk County from storm events like Superstorm Sandy, and living in a place with extensive shorelines and other water bodies that, while are amenities, can also adversely impact people's lives.

1.2. PURPOSE AND PROCESS

For these reasons the *Suffolk County Comprehensive Master Plan 2035* has as its primary purpose understanding the relationship between land use and the overall economy, traffic and transportation systems, and the natural and built environments. The overall intent of the Comprehensive Master Plan is to provide a roadmap for a resilient Suffolk County where environmental stewardship is encouraged, natural and agricultural resources are preserved, development is encouraged in appropriate locations (i.e., near trains stations and within sewered areas), where water quality, natural, and agricultural resources are preserved, big box stores will not compete with local businesses, existing and future residents have the desired range of housing options available, and the economy will grow based on sustainable smart-growth planning and policy initiatives. These connections will set the foundation for sustainable economic growth and help maintain and improve the quality of life of Suffolk County residents.

These issues and concerns have forced an examination of the County's current situation. There are difficult decisions to be made regarding the future growth and development of the County. These decisions will determine the County's future character and prosperity, particularly as it is shaped by the planning, land use, development, transportation, housing, and economic opportunity measures that are chosen.

This report forms one component of the *Suffolk County Comprehensive Master Plan 2035*. It evaluates existing transportation, economic, natural resource, water quality, and housing conditions throughout the County and identifies specific actions that will ensure that County Policies, Programs and Initiatives (PPIs) are aligned with the County's long-term goals of

sustainability. An overview of the Master Planning process, as well as a description of the role played by the consideration of the factors that promote sustainability, are provided below.

1.2.1. MASTER PLAN PROCESS OVERVIEW

A comprehensive plan is a statement of policies directed to the long-range protection, enhancement, growth, resiliency, and development of the area for which the plan has been developed.

This document is the outcome of a two-step process initiated in 2010 by the former Suffolk County Department of Planning, during its work to prepare the *Suffolk County Comprehensive Plan 2035, Volume One A: Inventory* (August 2011), undertaken in collaboration with the Suffolk County Planning Commission. These initial efforts contained several reports providing background and inventory information about the current state of the County, divided into several categories, including: demographics, the economy, quality of life, transportation, natural resources, housing, and infrastructure.

Building on this earlier work, beginning in July 2013, the planning efforts undertaken during this stage of the Comprehensive Master Plan process continued. This document represents the next step in the master planning effort—which analyzes the information gathered previously, in addition to other relevant information collected and examined as part of this study—and provides analysis to document the County’s long-term Goals and Objectives, as well as to develop and document an Implementation Strategy for recommended actions to be taken relative to the vital issues of Transportation, Economic Development, and Housing (presented in Chapter 2). This document has been developed in consultation with a variety of Suffolk County departments and staff, as well as in collaboration with the Suffolk County Planning Commission, under the direction and leadership of the Division of Planning and Environment, Suffolk County Department of Economic Development and Planning.

The data collection and analyses undertaken to support the development of this portion of the *Suffolk County Comprehensive Master Plan 2035* examine a broad range of issues facing the County now and into the future. The following are the critical aspects to this Comprehensive Plan:

- Think and plan regionally and sustainably;
- Provide for a transportation system that connects land uses and people;
- Determine effective ways to foster new economic developments, which are connected by efficient transportation systems, through appropriate land use policy and designations;

- Attract and retain youth;
- Promote resiliency;
- Preservation of surface and groundwater quality;
- Design for interconnections between natural and built resources;
- Preserve heritage industries such as agriculture and fishing;
- Consider and incorporate resiliency and climate change adaptation; and
- Identify and integrate ideas and desired outcomes from stakeholders.



It is the aim of this portion of the *Suffolk County Comprehensive Master Plan 2035* to identify, examine and address the wide range of issues that have an impact on life in the County; traffic, public transportation, and congestion issues, a changing economy, environmental concerns regarding land use and water resources, and maintaining the quality of life residents of the County have come to expect. One of the most effective means of addressing the variety of issues facing Suffolk County now and into the future will be to support and develop sustainable “smart” growth strategies and policies as an integral part of the Master Planning effort. The strategies that effectively strike this balance will be essential to creating a vibrant and prosperous future for Suffolk County.

1.2.2. PROMOTING A PATH TO SUSTAINABLE GROWTH



The value and importance of resilient and sustainable growth strategies continue to be recognized around the country. Successful integration of transportation systems with land use patterns is an idea that has been long talked about, but hard to put into place. Most would agree that practicable and implementable transportation solutions are long overdue on Long Island. Such strategies would

ideally be integrated with land use controls on suburban sprawl to create cohesive communities that maintain or improve the quality of life.

Another part of the sustainable growth philosophy is acting on a regional basis to foster communities' shared issues and differing viewpoints. Regional strategies also help to control the exodus of Long Island's young people, manage traffic in a way that promotes economic development, create cohesive desirable communities, promote resiliency, and to preserve water quality, natural, and agricultural resources.

The "sprawl" development pattern has predominantly been encouraged and sustained in communities throughout the country (including in Suffolk County) because of the vast amounts of land available, high levels of automobile use, and zoning regulations that mandate the separation of differing land uses.

Sustainable development or "smart growth" directs development back to traditional downtown mixed-use areas where adequate infrastructure exists. It provides an environment that enhances the quality of human life through a balanced mixture of residential, commercial, industrial, and open space land uses that meet the needs of the



entire population. One guiding principle of sustainable growth is to rejuvenate and strengthen local downtown areas, while protecting existing natural resources and more efficiently utilizing the area's existing transportation network. This type of Transit Oriented Development (TOD) incorporates a balanced mix of uses in a well-planned, aesthetically pleasing, and pedestrian-friendly environment. Transit stations are transformed into hubs of new activity. It is generally acknowledged in the planning community that this type of development enlivens and provides a sense of identity and well-being within a community.

1.3. GOALS & OBJECTIVES: WHAT ARE THEY?

While the words "goals" and "objectives" are often used interchangeably, they are used in this study to describe varying levels of specificity. Goals encompass many different aspects of living and working in Suffolk County and are aspirational in nature. In contrast to the high-level goals, objectives address specific areas of concern, such as housing, natural resources, and land use. Objectives are also more tangible and can be more readily measured. For example, while one may be unable to measure if the County achieves sustainable growth, one would be able to

measure if adequate housing options are provided through an inventory of units available for the various residential segments.

The County also has various Policies, Programs, and Initiatives (PPIs) that help to further one or a number of objectives. For example, policies in place to strengthen affordable housing support the larger objective of providing adequate housing options for all residents. Depending on the type and scope, PPIs may also support a number of other different objectives. Providing housing options in a downtown environment has the potential to, among other things, increase adequate housing options for residents but also to preserve natural resources by concentrating development in higher-density areas.

To better understand how the PPIs align with the County’s long-term goals, a framework that includes goals, objectives and PPIs was developed. **Figure 1-2** illustrates how these components—goals, objectives and PPIs—relate to, and depend on each other. Individual PPIs are implemented through specific actions or measures. For example, to implement an initiative or policy that will encourage more affordable housing, land use regulations may be altered, tax credits or other development incentives may be provided, or the regulatory framework may have to be adjusted. Some of these actions will have to build on each other and be sequenced in order to function and be effective.



Figure 1-2: Relationship of Goals, Objectives, and Supporting Policies, Programs and Initiatives (PPIs)

1.3.1. SUFFOLK COUNTY'S LONG-TERM GOALS

Long-term goals are intended to guide activities related to growth in Suffolk County. They define and describe the desired results for growth and the state to be achieved in the future. These goals center on sustainable and continued growth for Suffolk County, and are defined as follows:

Goal 1: Provide the foundation for sustainable growth and resiliency of Suffolk County.

This goal addresses the need of all Suffolk County residents for a safe environment in which they can live and prosper. A desired environment needs to be safe, healthy, and foster the economic opportunities that will allow residents to provide for their families. PPIs geared toward improving the quality of life of residents, such as measures to provide adequate housing options; improve connectivity between land uses; improve water and air quality; provide recreational opportunities; and protect open space are closely aligned with this goal. These PPIs must also address the effects of increased traffic and development by promoting improved mobility; encouraging TOD opportunities; and supporting public transportation options and progressive land use planning.

Goal 2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.

Although economic development can be viewed as part of Goal 1, its importance for residents and public entities suggests that it should be addressed separately. A thriving economy does not only provide jobs to residents, it provides well-paying jobs and ensures that municipal and County governments are funded at levels necessary to provide the services needed by the public. PPIs for this goal primarily address the two main issues: the retention and attraction of business and jobs to Suffolk County. PPIs that improve conditions for business and employees include such things as enhancing education and training for students and employees; connecting employment centers and residential areas (improve mobility and connectivity); and assisting companies willing to locate to Suffolk County.

1.3.2. COMPREHENSIVE MASTER PLAN 2035 KEY OBJECTIVES

The **goals** described above are aspirational and long-term, and entail many different aspects, from housing to quality of life to economic development incentives, but provide only limited guidance for specific areas of concern. The **objectives** translate the aspirational goals into more tangible and measurable categories. Because the objectives are more discretely defined, they also help to focus and direct efforts. For example, the goal of achieving sustainable growth for

all of Suffolk County’s communities will depend on many different factors. The objective of providing adequate housing will address one of these factors—providing shelter for residents.

The more focused objective also allows setting more tightly defined time frames, measurable targets, and benchmarks. For example, to measure the aforementioned objective one could assess if the provision of sufficient housing for all of the County residents will be achieved within the next decade.

Major policy themes were derived from plans, programs, projects, studies, and initiatives reviewed and described in detail in this document. Appendix A—Transportation and Water Resources; Appendix B—Economic Development; and Appendix C—Housing provide greater detail on the materials evaluated. These policy themes provide the foundation for the objectives to break down long-term goals into manageable and applicable targets.

Key objectives of the *Suffolk County Comprehensive Master Plan 2035* are listed below. These policy themes provide the foundation for the objectives to break down long-term goals into manageable and applicable targets. While the list of objectives is numbered, the order **does not** reflect a priority ranking based on the relative importance of each objective.

1. Provide adequate, affordable housing options for all Suffolk County residents.
2. Provide infrastructure that supports sustainable growth in Suffolk County.
3. Improve mobility, access, and safety.
4. Stimulate growth of target industry sectors in Suffolk County.
5. Promote connectivity between areas of housing and economic growth with recreational resources.
6. Improve resiliency to effects of climate change.
7. Protect the County’s open spaces, natural resources and aquifer.
8. Maintain and improve the quality of life for Suffolk County residents.
9. Provide education and training to Suffolk County’s current and future workforce.
10. Foster regional coordination and collaboration among all stakeholders.

1.3.3. POLICIES, PROGRAMS AND INITIATIVES

PPIs are aimed to advance the various objectives. PPIs may support just one key objective, or may be supportive of multiple objectives. For example, certain TOD initiatives could simultaneously provide critical infrastructure, improve the local quality-of-life, protect the

County's natural assets, and help to better connect residential areas with places of work.

PPIs are supportive of Suffolk County's objectives and may include, but are not limited to, incentive and educational policies, land use or transportation initiatives, and traffic management and/or development programs. As part of this study, the study team reviewed major PPIs in Suffolk County including projects initiated and/or implemented by the County and Town governments, New York State Empire State Development Corporation (ESDC), and institutional/non-government entities, such as the Long Island Index.

Having this complete knowledge and understanding of the County's extant applicable programs, policies, projects, and initiatives provided the foundation for the development of the Implementation Strategy, and the corresponding short-, medium-, and long-term recommended action steps that are outlined and discussed in detail in Chapter 2 of this document. *

2. INTRODUCTION

Based on the evaluation of existing transportation, economic, and housing conditions throughout the County, as examined through the lens of the County’s stated primary goals and objectives (as set forth in Chapter 1), this chapter identifies an Implementation Strategy for recommended actions to be taken relative to the vital issues of Transportation, Economic Development, and Housing. The implementation strategy outlined below includes specific Recommended Actions that will help ensure that County-led policies, programs, projects, and initiatives are aligned with the County’s long-term goals of sustainability.

From the detailed analyses undertaken for this effort (and presented in **Appendix A—Transportation and Water Resources**, **Appendix B—Economic Development**, and **Appendix C—Housing**) major policy themes have been developed to establish a framework from taking aspirational goals and objectives into short-, medium-, and long-term implementation strategies. This framework will set the foundation for sustainable economic growth and help maintain and improve the quality of life of Suffolk County residents. Having this framework will encourage and support decisions that will help to ensure a future for Suffolk County that is resilient and sustainable. Resiliency is the ability of people, organizations and systems to prepare for, respond, recover from and thrive in the face of hazards or disasters. Components of a resilient community include: economic and fiscal strength and diversity; strong business community; sustainable infrastructure; leveraging natural systems; energy diversity and independence; connected road networks; diversity of transportation modes; variety of housing options; and ensuring that stakeholders are prepared. Sustainability is most simply defined as the preservation of resources for future generations.

Documenting this Implementation Strategy as part of the *Suffolk County Comprehensive Master Plan—2035* also helps to ensure it is used by community leaders as a guide to decision making focused on the integration of transportation, economic development and housing opportunities. Thereby, this Implementation Strategy provides a guidance document that serves as a useful, working tool for community leaders through 2035.

Suffolk County intends to use the information and specific Action Items identified in this chapter as a roadmap that can assist in making policy decisions. These decisions will determine the County’s future character and prosperity, particularly as it is shaped by the planning, land use, development, transportation, housing, and economic opportunity measures that are chosen. However, since all comprehensive plans are considered “living documents” that evolve

with time, Suffolk County will evaluate specific conditions before obligating any funding or personnel.

2.1. FRAMEWORK FOR DEVELOPMENT OF THE IMPLEMENTATION STRATEGY

A variety of Policies, Programs and Initiatives (PPIs) have been identified as part of the Implementation Strategy, which are aimed at advancing the various key objectives. The PPIs identified are supportive of Suffolk County's objectives and may include but are not limited to incentive and educational policies, land use or transportation initiatives, and traffic management and/or development programs. It is notable that any given PPI may support just one key objective, or may be supportive of multiple objectives. For example, certain TOD initiatives could simultaneously provide critical infrastructure, improve the local quality-of-life, protect the County's natural assets, and help to better connect residential areas with places of work.

Some of the Recommended Actions in the Implementation Strategy outlined below include existing PPIs the County already has that help to further one or more objectives; however, in several instances, modifications to existing PPIs have been suggested as improvements to make a measure more effective.

The Recommended Actions include a variety of programs, policies, projects, and initiatives, as part of the Implementation Strategy, and have been identified in terms of being short-, medium-, and long-term steps. The time frames established for the various Recommended Actions have been divided into Short-Term (0-5 years), Mid-Term (5-10 years); and Long-Term (10-20 years) periods for the Comprehensive Plan's Implementation Strategy.

2.2. IMPLEMENTATION STRATEGY

The Recommended Actions that comprise the overall implementation Strategy have been grouped into three broad themes—Resiliency, Strengthening Economic Capacity, and Enhancing Quality of Life, which are described and discussed in more detail below

2.2.1. RESILIENCY-THEMED RECOMMENDED ACTIONS

The resiliency-themed Recommended Actions support community development, but often have unique funding or implementation factors that require them to be considered separately, as they are often tied to the protection, improvement, or construction of infrastructure elements. In reality, investments to enhance and promote resiliency, such as improvements to sewer infrastructure, can stimulate or direct private sector responses that lead to community development in desirable locations, while concurrently helping to protect the quality of Suffolk's underground aquifer—its drinking water supply. In fact, from the County perspective,

investments in infrastructure and resiliency projects may be the primary means for the County to achieve its overall Goals (as set forth in Chapter 1), including the County's key overarching sustainable development and resiliency objectives. In the wake of Superstorm Sandy, it has become apparent that it is more important than ever to plan for community resiliency. Ensuring that systems and facilities are resilient in the face of natural disasters has a direct bearing on the economic prosperity of a region. The more resilient such systems and facilities are, the more likely the region would fare well in the event of a disaster and be able to move forward without undue economic damage in the aftermath.

2.2.2. STRENGTHENING ECONOMIC CAPACITY-THEMED RECOMMENDED ACTIONS

The Recommended Actions that fall under the theme of strengthening economic capacity encompass the types of actions that address the County's larger goals of supporting and advancing sustainable growth, both in terms of economic development and housing options. Actions that serve to strengthen the economic capacity of the County can stimulate or direct private sector responses that lead to community development in desirable locations. For example, encouraging concentrated densities in smart, transit-oriented communities can also reduce overall land demand, protect land affordability, and ensure the continued viability of Suffolk County's vibrant agricultural industry.

2.2.3. ENHANCING QUALITY OF LIFE-THEMED RECOMMENDED ACTIONS

Finally, the Recommended Actions that fall under the theme of enhancing quality of life support the maintenance of Suffolk County's cherished and unique qualities. These include actions that protect, preserve or enhance the amenities readily available in the County, including the numerous state and local parks and open spaces; world renowned beaches; the burgeoning winery and agribusiness industry; historical sites; and various other attractions, all of which contribute to making Suffolk County the vibrant, dynamic place that it is. For example, preserving Suffolk County's open space, while simultaneously encouraging these more densely-developed areas, will help to optimize the availability of a high-quality water supply for decades to come; and also help to improve surface water habitat conditions that are crucial for healthy shellfish and finfish populations.

These three broader themes are considered by focusing on discrete subdivisions to address more specific areas of interest—Transportation Infrastructure, Sewer/Wastewater Infrastructure, Water Resources/Open Space, and Community Development—which in turn are further subdivided into more specific topical areas of interest. It is important to note that many of the Recommended Actions would address more than one of the County's key objectives, and also could fall into more than one area of interest. In all, taking all of the discrete areas of

interest into consideration, the Recommended Actions have been grouped under the following subcategories, which have been listed alphabetically, with no implied order of importance or ranking:

- Community Development Subcategories:
 - Economic Development
 - Housing Options
 - Integrated Strategies
- Infrastructure Subcategories:
 - Sewer/Wastewater
 - Transportation:
 - Airports
 - Bicycles/Pedestrians
 - Bus Transit
 - Ferry
 - General Strategies
 - Rail
 - Roadways
 - Safety
- Water Resources/Open Space Subcategory

The various Recommended Actions that comprise the Implementation Strategy are outlined in **Table 2-1**, and are discussed in detail below. Cross references to citations in this document's appendices or to external reports have been provided in the "Documentation/References" column of this table. In a few instances, no cross reference has been provided as the Recommended Action fell outside the scope of the analyses undertaken. The Recommended Actions are not prioritized in any way, but are grouped by the various subcategories outlined above, as well as by the corresponding overarching theme most closely associated with the Recommended Action, as described above. In choosing which Recommended Actions to pursue, the County will evaluate various factors, including the availability of financial resources, and seek to create strategic synergistic implementation of Recommended Actions. It is noted that Suffolk County Planning Commission members reviewed and commented on the Recommended Actions during their development, and subsequently identified 22 Actions out of

a total of 108 that were deemed to be of special significance. These Actions are italicized in Table 2-1.

2.2.4. RESILIENCY-THEMED RECOMMENDED ACTIONS

The resiliency theme includes a total of 17 Recommended Actions that are spread over 6 of the 14 subcategories enumerated above, touching on the areas related to Infrastructure (both Sewer/Wastewater and Transportation), Water Resources/Open Space, and Community Development. In terms of transportation issues, the County has broad abilities to affect change and improvements. Not only does the County own and maintain hundreds of miles of roadways, but also owns and operates an extensive sewer network, and has permitting authority over sewer connections and on-site wastewater treatment systems. Suffolk County also operates an extensive public bus system.

New ways of thinking about transportation must address Suffolk County's changing demographics. As discussed in Chapter 1, Census data from 2010 indicates that Suffolk County's population is aging, with nearly one-third of all Suffolk County households containing a senior citizen. Future public transportation policy in the County should be examined with a view toward providing for a significant percentage of the population with changing transportation needs; presumably relying upon a more 'accessible' mass transit system.

Recognizing that the provision of transportation services is fragmented between a number of different agencies (e.g., SC Transit, SCDPW, LIRR, NYSDOT, private bus operators), Suffolk County should take a leadership position to ensure that the transportation needs of its residents are being met on a day-to-day basis. This point was highlighted by the response to Superstorm Sandy when Suffolk County residents were unable to find alternative modes of transportation during the time that the LIRR and other elements of the transportation infrastructure were disrupted, highlighting the critical need to plan for and ensure the resiliency of these critical systems. The County should facilitate the formation of an inter-agency task force with the initial goal of analyzing and documenting lessons learned from the Superstorm Sandy event with regard to developing a comprehensive approach to developing a more resilient transportation system throughout Suffolk County. This taskforce could be mandated to serve as Suffolk County's umbrella committee overseeing the coordination of mass transit systems. In addition, Suffolk County needs to increase its mass transit capacity in response to changing demographics and in order to help maintain the quality of life of its residents. The County should continue to support such improvements as the East Side Access and Double Track projects, which will significantly augment the capacity of the rail system.

In response to one of the most startling findings related to safety discussed in the Transportation analysis presented in Appendix A, the County should move forward with initiatives and programs that address the high rate of accidents caused by driving under the influence, as well as accidents involving pedestrians and bicyclists, that can affect anyone in the County, anywhere and at any time.

In terms of water and wastewater issues, Suffolk County has considerable influence. For example, the Suffolk County Department of Health Services established hydrogeological zones in the 1970s, within which allowable development density is tied to the provision of sewage treatment facilities to protect deep recharge areas and water supply sensitive areas from waste discharges. Similarly, Suffolk County has a vote on the Pine Barrens Commission, which can serve to influence development in the 50,000+ acres of the Pine Barrens Compatible Growth Area. In addition, County owned and operated sewer plants and districts determine practical densities, and subsequent County infrastructure investment determines future development potential. The County also has the ability to implement improvements to its water and wastewater systems that would lead to more sustainable and natural resource solutions. Through targeted investment in these essential systems, the County can guide future land use decisions in patterns that support the overall Goals for smart-growth, sustainability and resiliency. Through its permitting capabilities, the County's Department of Health Services can take a leadership role in evaluating and approving alternative practices for on-site wastewater treatment that would permit higher residential densities outside of sewer areas where growth may occur. This also has the benefit of increasing conservation of open space. Additionally, Recommended Actions that support making the water and wastewater delivery and collection systems more resilient will serve to sustain and bolster economic activity in the event of a disaster, help to support the level of services critical to the maintenance of quality of life, and serve to protect the County's precious natural resources, including the coastlines, marine life, wetlands, and the aquifer.

2.2.5. STRENGTHENING ECONOMIC CAPACITY-THEMED RECOMMENDED ACTIONS

The strengthening economic capacity theme includes a total of 53 Recommended Actions that are spread over 9 of the 14 subcategories enumerated above, and touch on the areas related to Infrastructure (both Sewer/Wastewater and Transportation) and Community Development. The Integrated Strategies comprise a number of broad planning measures that the County could implement or work with town and villages to implement. While the regulatory authority over zoning and land use resides with the towns and villages, Suffolk County is able to exercise regulatory control over land use development (e.g., through the authority of the Suffolk County Planning Commission). Recognizing this relationship between the County and the other local

municipalities, the Recommended Actions under this group of strategies have been tailored to highlight advisory or support roles for the County, in addition to identifying actions that the County can pursue more actively. The County can play a significant lead role in a number of areas. Important issues Suffolk County highlights as priorities become policies that Suffolk County departments must follow and refer to. One role the County can assume is developing relationships and educational materials to spearhead initiatives identified in this Comprehensive Plan. Where the County can take a lead role, is in identifying growth centers and allocating County resources to infrastructure that supports these growth centers. Further, where County or other public lands are available, the County can take steps to facilitate the redevelopment of such parcels in ways that support the County's overall Goals.

In terms of Economic Development, the most prominent opportunity for the County to further its Goals related to economic growth, is to help to close the gap in necessary target sectors skills that is hampering the growth of these sectors. In particular, continued and enhanced County collaboration with educational institutions in support of education and training programs, such as the STEM and Accelerate Programs is recommended to retain and attract target sector businesses. In addition, the County should continue to identify new industries and businesses that could take advantage of the County's educational and infrastructure assets, and would match with the County's objectives for creating new clusters of economic activity. The County can also serve as a conduit (through the IDA, for example) to encourage new business to relocate to Suffolk County, using its ability to provide financing or tax incentives.

While the County does not provide or regulate housing, it can provide education to influence perceptions about types and densities of various housing options. In addition, through its vital role in providing needed infrastructure (water, sewers, roadways, etc.) the County can promote and create the precursor conditions necessary to enable sustainable housing development. This gives the County the ability to direct where new housing would be located. These actions can be taken in tandem with, and would be supportive of, the County's existing workforce housing program.

2.2.6. ENHANCING QUALITY OF LIFE-THEMED RECOMMENDED ACTIONS

The enhancing quality of life theme includes a total of 38 Recommended Actions that are spread over 8 of the 14 subcategories enumerated above, and touch on the areas related to Transportation Infrastructure, Water Resources/Open Space, and Community Development.

As described in Chapter 1, Suffolk County has numerous qualities that make it a desirable location to live, work, and play. Among the most notable that are closely associated with the quality of life that Suffolk County residents enjoy are: the numerous county, state, and local

parks and open spaces; diverse historical sites; the burgeoning winery and agribusiness industry; world renowned beaches; it's colleges and universities; myriad shopping opportunities; and various other attractions. All of these assets, which contribute to making Suffolk County the vibrant, dynamic place that it is, need to be protected and fostered to ensure that the quality of life enjoyed today is maintained and protected in the years to come. The Recommended Actions that fall under this theme involve the thoughtful balance of the relationship between land use, the overall economy, traffic and transportation systems, and natural and built resources.

Among the numerous studies and plans examined in the preparation of this comprehensive planning effort, many addressed Suffolk County's challenges regarding quality of life issues, including the need to strengthen existing communities, create pleasant and attractive pedestrian-friendly communities, and encourage compact and orderly development. This Implementation Strategy includes actions that respond to these challenges. These actions recommend directing development to strengthen existing communities; supporting and encouraging mixed-use and transit-oriented development to encourage walkable communities centered around vital economic centers; and establishing development policies and guidelines that preserve open space, protect natural resources, water quality, farmlands, and neighborhood character, and meet the needs of the County's young-adults, as well as its aging population. In addition, this portion of the Implementation Strategy dealing with enhancing the quality of life includes actions that are intended to promote resiliency and sustainable continuous economic growth, which is critical for Suffolk County to maintain the quality of life for its residents and provide economic opportunities for new comers and existing families.

**Table 2-1
Implementation Strategy—Recommended Actions**

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Infrastructure – Sewer - Wastewater																		
Resiliency	1	<i>Identify locations for wastewater upgrades to protect water quality and promote the resurgence of coastal wetlands.</i>	County-wide (specifically Babylon, West Islip, Mastic, Mastic Beach, Shirley, and Oakdale)	Federal, State, Towns	X	X	X	X	X					X	X		X	Refer to the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan (SC HMP), available at: www.suffolkcountyny.gov/respond . The Goals and Initiatives of the SC HMP are aligned with both segments of this action. Annex Section 9.1 of the SC HMP identifies mitigation initiatives that relate to, or contain components of, both wastewater improvements and/or restoration of coastal wetlands, such as SCEDP-2, SCEDP-4, SCEDP-5, SCFRES-1, SC-20; as well as numerous initiatives dealing with improvements to sewage treatment facilities, sewers and sewer districts. Refer to Appendix A, Section 5.2.1., pages A-166 and A-167
Resiliency	2	Identify the water quality and environmental costs of doing nothing to mitigate the waste loads discharged from 360,000 septic systems and cesspools in Suffolk County.	County-wide	Federal, State, Towns	X				X					X	X		X	Refer to Appendix A, Section 5.2., pages A-163 and A-164
Resiliency	3	<i>Assess alternative technologies for sewer systems.</i>	County-wide	Federal, State, Universities		X	X	X	X		X		X	X	X		X	Refer to Appendix A, Section 5.2.1., pages A-166 and A-167

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Resiliency	4	<i>Evaluate the constraints to the use of preserved land in decentralized waste treatment and disposal strategies.</i>	County-wide	Towns, Villages, NYS Parks Department, Pine Barrens Review Commission, US Department of the Interior		X	X		X			X	X	X	X		X	Refer to the 2014 Suffolk County Comprehensive Water Resources Management Plan and the Pilot Study for Clustered Treatment of Decentralized Wastewater in Peconic Estuary
Resiliency	5	<i>Explore the feasibility of acquiring land in hamlets located outside of SLOSH zones for decentralized, wastewater treatment and recharge facilities.</i>	County-wide	Towns	X	X	X		X			X	X	X	X		X	Refer to the 2014 Suffolk County Comprehensive Water Resources Management Plan and the Pilot Study for Clustered Treatment of Decentralized Wastewater in Peconic Estuary
Strengthening Economic Capacity	6	<i>Identify locations suitable for new water/sewer infrastructure that would stimulate redevelopment in growth centers.</i>	Growth Centers	Towns	X	X		X	X		X		X	X	X		X	Refer to Appendix A, Section 3.7.2.6., page A-133 and Section 5.2.1., page A-166
Strengthening Economic Capacity	7	<i>Develop a management structure to facilitate wastewater upgrades, responsible management entity, inspection program, etc.</i>	County-wide	County, Towns	X				X				X	X	X		X	Refer to the 2014 Suffolk County Comprehensive Water Resources Management Plan
Strengthening Economic Capacity	8	<i>Explore alternative financing and operational models for sewer infrastructure.</i>	County-wide	Federal, State, Towns		X		X	X		X		X	X	X		X	Refer to Appendix A, Section 3.7.2.6., page A-133 and Section 5.2.1., page A-166

Table 2-1 (cont'd)

Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Water Resources - Open Space																		
Resiliency	9	Identify, evaluate and implement actions that will promote the resurgence of wetlands and contribute to coastal resiliency.	County-wide	Federal, State, Towns	X	X	X							X	X	X	X	Refer to the <i>2014 Suffolk County Comprehensive Water Resources Management Plan</i>
Resiliency	10	Work with all governmental partners to acquire parcels in areas of highest coastal flood and erosion risk.	County-wide	Towns, FEMA, NYS DEC		X	X							X	X	X		This action is aligned with mitigation initiatives SCEDP-2, SCFRES-1, SCFRES-2, SC-20 and SC-21 in Annex Section 1 of the SC HMP. Mitigation Initiative SC-35 relates directly to an annual multi-jurisdictional discussion and documentation of future development and hazard areas.
Enhancing Quality of Life	11	Pursue the acquisition of priority open space properties as identified in the <i>Suffolk County Comprehensive Master List Update - 2012</i> report.	County-wide	Towns, Villages	X	X	X							X	X	X	X	Refer to the <i>Suffolk County Comprehensive Master List Update - 2012</i> report
Infrastructure - Transportation - General Strategies																		
Resiliency	12	Coordinate inter-agency task force to oversee emergency management of all transportation systems in Suffolk County, and develop comprehensive resiliency approach for County's transportation systems.	General	All public transit agencies	X	X	X							X		X		This action aligns with the SC HMP Initiative SC-8, which is an ongoing activity to develop, enhance, and implement emergency response plans. It also aligns with new initiative SCEDP-3 that deals with a Bus Rapid Transit (BRT) project.

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals:																	
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																	
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Resiliency	13	Review policies to limit public expenditure for infrastructure in 'high hazard' areas.	General	All public transit agencies	X				X					X			High hazard areas for flooding, storm surge, etc. are well defined in the SC HMP, Section 5 identifies natural hazards and the potential losses that may be incurred.
Resiliency	14	Implement recommendations in the SC HMP dealing with transit facilities that are critical in emergency situations. Retrofit these facilities to ensure their proper functioning in future crises.	General	All public transit agencies	X	X			X	X			X				The SC HMP identifies critical facilities, including transportation facilities, which may be affected by hazards. Mitigation Initiative SC-32 deals with retrofitting these facilities. Appendix F specifically identifies these facilities County-wide by Town and/or Village.
Resiliency	15	Develop redundancy and/or contingency plans if one mode of transportation is not operational during emergency situations. Identify and implement any required expansion of services.	General	All public transit agencies	X	X			X	X			X				Refer to Appendix A, Section 3.3.3., page A-36 and Section 3.3.4., page A-37
Resiliency	16	Support the objectives of the climate action Cleaner, Greener Communities Program as appropriate.	County-wide	Towns. NYSERDA, LIPA	X	X	X		X				X	X	X	X	Refer to the <i>Cleaner Greener Long Island Regional Sustainability Plan</i>
Resiliency	17	Support the expansion of the use of vehicles powered by alternative/low carbon fuels.	County-wide	Towns. NYSERDA	X	X	X			X		X	X		X	X	Refer to Appendix A, Section 3.3.8.2., page A-40

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Strengthening Economic Capacity	18	Connect Long Island: Implement BRT Demonstration Project to encourage BRT as a viable transportation alternative to the personal automobile.	Growth Centers	LIRR, NYS DOT	X	X		X	X	X	X	X			X		X	Refer to Appendix A, Section 3.1.5.1., page A-28
Strengthening Economic Capacity	19	<i>Connect Long Island: Make supportive transit investments to link employment concentrations to areas suitable for residential growth.</i>	County-wide	Federal, State, Towns	X			X	X	X	X	X			X			Refer to Appendix A, Sections 3.3.1. through 3.3.2., pages A-34 through A-36 and Section 3.4.9., pages A-99 and A-100
Strengthening Economic Capacity	20	Identify transportation improvements required to support downtown areas determined to have high potential for Transit Oriented Development (TOD).	Areas identified in 2010 Long Island Index	State, Towns	X	X	X		X		X	X						Refer to Appendix A, Sections 3.3.1. through 3.3.2., pages A-34 through A-36 and Section 3.4.9., pages A-99 and A-100
Enhancing Quality of Life	21	Connect Long Island: Coordinate land use planning and transportation planning to promote connections from residential areas to recreational areas.	County-wide	Federal, State, Towns	X			X	X	X				X	X			Refer to Appendix A, Section 1., page A-1; Section 2.1.2., pages A-9 and A-10; and the <i>Connect Long Island Suffolk County Bus Rapid Transit Feasibility Study</i>
Enhancing Quality of Life	22	Develop transportation policies to meet the needs of Suffolk County's aging population.	General	All public transit agencies	X	X				X								Refer to the <i>Long Island 2035 Regional Comprehensive Sustainability Plan - Technical Report</i> and the <i>Long Island Index Profile Report 2012</i>

Table 2-1 (cont'd)

Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Enhancing Quality of Life	23	Encourage participation in rideshare programs and multimodal bus/train/bicycle and auto use.	County-wide	NYSDOT, Towns	X	X				X		X					Refer to Appendix A, Section 1.2., page A-7; Section 3.3.8., page A-40; and <i>The Mobility for the Millennium, A Transportation Plan for the New York Region</i> study.	
Enhancing Quality of Life	24	<i>Develop mass transit infrastructure necessary for local and non-local tourists to safely and timely access Long Island tourism destinations, such as beaches, parks, rural agriculture, and Long Island Wine Country.</i>	County-wide	All public transit agencies	X	X	X		X	X	X	X			X		Refer to Appendix A, Section 3.1.1., pages A-23 and A-24 and Section 3.7.2.7., page A-135	
Infrastructure - Transportation - Safety																		
Enhancing Quality of Life	25	Increase funding for educational and enforcement efforts to reduce speed and alcohol-related crashes (Safe Routes to School).	County-wide	Towns, School Districts	X	X	X			X					X		Refer to Appendix A, Section 2.1.1.1., pages A-8 and A-9	
Enhancing Quality of Life	26	Continue to review crash data annually to identify roadways with significant clusters of accidents. Make necessary safety improvements (e.g., installation of turn lanes, traffic signals and timing, lane marking, signs, lighting) to	County-wide	Towns	X	X	X		X	X					X		Refer to Appendix A, Section 2.1.1.1., pages A-8 and A-9 and Section 2.2.2., pages A-17 and A-18	

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
		reduce the potential for accidents. (This requires analysis of accident data by road type, travel direction, type of movement, pedestrian involvement, and accident context as it relates to land use.)																
Infrastructure - Transportation - Roadways																		
Strengthening Economic Capacity	27	Continue to coordinate with NYSDOT to implement operational improvements along major corridors, as needed.	County-wide	NYSDOT	X	X	X		X	X		X					Refer to Appendix A, Section 2.1.3.2., pages A-16 and A-17	
Strengthening Economic Capacity	28	Implement capacity improvements as needed. Seek Federal funding for design and construction.	County-wide	FHWA, NYSDOT		X	X		X	X							Refer to Appendix A, Section 2.1.3.2., pages A-16 and A-17	
Strengthening Economic Capacity	29	Connect Long Island: Develop north-south mass transit connections. Encourage north-south capacity improvements.	County-wide	FHWA, NYSDOT	X	X	X		X	X	X	X					Refer to the <i>Connect Long Island Suffolk County Bus Rapid Transit Feasibility Study</i>	
Strengthening Economic Capacity	30	<i>Monitor capacity, safety and infrastructure conditions on County roads and implement appropriate roadway improvements.</i>	County-wide	Federal, State, Towns	X	X	X		X	X				X			Refer to Appendix A, Section 2.1.1.1., pages A-8 and A-9 and Sections 2.1.2.1., 2.1.2.2., and 2.1.2.3., page A-11	

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals: Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County. Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Infrastructure - Transportation - Bicycles/Pedestrian																	
Enhancing Quality of Life	31	Review pedestrian safety findings published in NYMTC Plan 2040 and NYSDMV statistics and work with appropriate partners to fund and implement improvements to mitigate accident occurrence.	County-wide	NYSDOT, Towns	X					X					X		Refer to Appendix A, Section 2.2.1.1., page A-17; Section 2.2.2., page A-17 and A-18; and the Suffolk County Complete Streets policy (adopted in 2012)
Enhancing Quality of Life	32	Promote increased training for Suffolk County children in pedestrian and bicyclist safety.	County-wide	FHWA, NYSDOT	X	X				X					X		Refer to Appendix A, Section 2.2.2., page A-18 and Section 2.2.2.5., pages A-19 and A-20
Enhancing Quality of Life	33	Pending available funding, install pedestrian infrastructure on County roads, where suitable and warranted by pedestrian volumes, to provide access to Suffolk County Transit (SCT) bus stops.	County-wide	NYSDOT, Towns	X	X	X			X	X	X			X		Refer to Appendix A, Sections 2.2.2.1. and 2.2.2.2., page A-18 and Section 2.2.2.3., page A-19

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Enhancing Quality of Life	34	Review bicycle safety studies with appropriate partners to identify locations with significant bike accident rates, and implement safety improvements to mitigate accident occurrence.	County-wide	NYSDOT, Towns	X					X					X		Refer to Appendix A, Sections 2.3.3., 2.3.2.1., and 2.3.2.2., page A-21 and Section 2.3.2.3., page A-22	
Enhancing Quality of Life	35	Promote rails-to-trails projects and separated, multi-use paths.	County-wide	FHWA, NYSDOT	X					X	X						Refer to Appendix A, Section 2.3.2.3., page A-22	
Enhancing Quality of Life	36	Expand implementation of complete streets concepts.	County-wide	NYSDOT, Towns	X	X	X			X	X	X			X		Refer to Appendix A, Section 2.2.2.3., page A-19 and Section 2.3.2.1., page A-21	
Enhancing Quality of Life	37	Increase "last mile connectivity" by improving pedestrian and bike access to transit stations.	County-wide	LIRR, Towns		X		X	X	X		X		X			Refer to Appendix A, Section 2.2.2.2., page A-18	
Infrastructure - Transportation - Bus Transit																		
Strengthening Economic Capacity	38	Advance BRT on priority corridors in connection with north-south road capacity improvements.	NY Route 110 Corridor, Sagtikos/Sunken Meadow Corridor, CR 97/Nicolls Road from the Long Island Expressway to NY Route 25A	NYSDOT	X	X				X		X					Refer to Appendix A, Section 3.1.5.1., page A-28 and <i>Connect Long Island Suffolk County Bus Rapid Transit Feasibility Study</i>	
Strengthening Economic Capacity	39	Develop off-board fare collection payment systems.	County-wide	SCT, MTA, LIRR, NICE,	X				X	X		X			X		Refer to the <i>Connect Long Island Suffolk County Bus Rapid Transit Feasibility Study</i>	

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals:																	
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																	
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	40	Provide a SCT real time bus arrival communications application platform for commuters.	County-wide	SCT	X				X	X		X			X		Refer to Appendix A, Section 3.1.2., pages A-24 and A-25
Strengthening Economic Capacity	41	Review all available studies on East End transportation and evaluate alternatives to enhance connectivity between Riverhead, the North Fork and the South Fork.	East End Communities	SCT	X	X	X		X	X		X			X		Refer to the <i>Sustainable East End Development Strategies (SEEDS) Report</i> , among others
Strengthening Economic Capacity	42	Develop bus transfer stations in coordination with TOD, SCT routes, and proposed BRT routes.	County-wide	NYSDOT, SCT, Towns		X			X	X		X			X		Refer to Appendix A, Section 3.3.6., page A-38 and the <i>Connect Long Island Suffolk County Bus Rapid Transit Feasibility Study</i>
Strengthening Economic Capacity	43	Evaluate parking solutions for BRT, TOD, and congestion relief.	County-wide	All	X				X	X		X			X	X	Refer to Appendix A, Section 3.3.1., page A-35
Strengthening Economic Capacity	44	Reassess County bus routes to modify and better serve connections to airports.	County-wide	LIRR, SCT, Towns, NYSDOT, Airport Management	X	X	X		X	X		X			X	X	Refer to Appendix A, Section 3.7.2.5., page A-132; Section 3.7.3.5., page A-146; and Section 3.7.4.5., pages A-157 and A-158
Strengthening Economic Capacity	45	Modify the operation of services to better coordinate with rail and airport schedules.	County-wide	LIRR, SCT, Towns, NYSDOT, Airport Management	X	X	X		X	X		X			X	X	Refer to Appendix A, Section 3.7.1.1., page A-121; Section 3.7.2.5., page A-131; Section 3.7.2.7., page A-135; Section 3.7.3.5., page A-145; Section 3.7.3.6., page A-148; and Section 3.7.4.5., pages A-157 and A-158

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals:																	
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																	
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Enhancing Quality of Life	46	Encourage intermodal connectivity between rail, bus, car, bike, etc.	Growth Centers	LIRR, NYS DOT			X		X	X	X	X			X		Refer to Appendix A, Section 3.1.5.3., pages A-29 and A-30
Enhancing Quality of Life	47	Integrate SCT service planning into TOD/complete streets planning.	County-wide	SCT		X			X	X		X			X		Refer to the Suffolk County <i>Complete Streets Policy</i>
Enhancing Quality of Life	48	Work with partners to launch a public education campaign to increase awareness of transit options.	County-wide	Towns	X					X		X					
Infrastructure - Transportation - Rail																	
Resiliency	49	Incentivize the provision of electric charging stations in parking lots serving LIRR stations to encourage the use of electric vehicles.	General	Local Townships	X	X			X	X		X					Refer to Appendix A, Section 3.3.8., page A-40
Strengthening Economic Capacity	50	Continue to collaborate with the MTA/LIRR and SCT to better address Suffolk County's transportation needs, including connectivity between bus service and underserved railroad stations.	General	LIRR, SCT	X				X			X				X	Refer to Appendix A, Section 3.1.5.3., pages A-29 and A-30 and Section 3.4.9., pages A-99 and A-100

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals: Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County. Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Strengthening Economic Capacity	51	Promote and expand freight rail use, as appropriate, to reduce truck traffic and improve resiliency, redundancy, and local air quality. Support LIRR in its goal to increase rail share of freight from 1% to 5% of Long Island traffic.	County-wide	LIRR, Freight Operator, Towns		X	X		X	X	X	X	X		X		X	Refer to Appendix A, Section 4.1.2., pages A-161 and A-162
Strengthening Economic Capacity	52	Work with partners to communicate the benefits that East Side Access will afford residents and local business communities.	General	LIRR, Towns	X				X	X		X						Refer to Appendix A, Section 3.1.1., page A-34
Strengthening Economic Capacity	53	Encourage support and funding for construction of a third track on the Main Line between Floral Park and Hicksville to maximize potential of East Side Access.	Main Line/Floral Park to Hicksville	LIRR	X	X	X		X	X		X						Refer to Appendix A, Section 3.2.3., page A-32
Strengthening Economic Capacity	54	Assist the LIRR in identifying potential sites for the construction of parking facilities to support Double Track.	Double Track	LIRR, Towns	X		X		X	X		X						Refer to Appendix A, Section 3.3.1., page A-35

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals: Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County. Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	55	Work with partners to market the potential of Double Track to support increased mixed use development along the Main Line.	Main Line	Chambers of Commerce, Townships	X				X			X					Refer to Appendix A, Section 3.3.2., pages A-35 and A-36
Strengthening Economic Capacity	56	<i>Support the construction of a Double Track to Yaphank and points further east; provide shuttle service for employees at Enterprise Park in Calverton.</i>	Yaphank	LIRR	X	X	X		X	X		X					Refer to Appendix A, Section 3.3.7.2, page A-39
Strengthening Economic Capacity	57	Support the increase in LIRR off-peak, reverse peak and mid-day service to address the changing needs of Suffolk County commuters.	General	LIRR	X	X	X		X	X		X					Refer to Appendix A, Section 3.2.3, pages A-31 and A-32 and Section 3.3.3., page A-36
Strengthening Economic Capacity	58	<i>Support increased LIRR service and facilities improvements to existing and proposed TODs.</i>	General	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.3.6., page A-38 and A-39
Strengthening Economic Capacity	59	<i>Support the reopening of Republic Station/increased service to facilitate the creation of a TOD in East Farmingdale.</i>	Republic Station/East Farmingdale	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.3.1., page A-35 and Section 3.7.3.5., page A-145

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals:																	
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																	
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	60	Support increased service to Riverhead Station for both commuter and recreational users.	Riverhead	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.4.4.4., page A-69
Strengthening Economic Capacity	61	Support the construction of rail yards on all branches of the LIRR, as needed and appropriate.	LIRR All Branches	LIRR	X				X	X		X					Refer to Appendix A, Section 3.3.4., page A-37
Strengthening Economic Capacity	62	Support MTA initiatives which provide for the improvement of train station amenities including waiting areas, bus shelters, and increased hours of operations.	General	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.4., beginning on page A-41 (see Needs and Deficiencies table provided for each station examined)
Enhancing Quality of Life	63	Support the provision of additional 'scoot service' on the East End from points where double track ends, to provide increased service to those communities. Extend service beyond the summer season (i.e., Port Jefferson to Huntington).	East End	LIRR, Towns	X	X	X		X	X		X					Refer to Appendix A, Section 3.3.7.1., page A-39

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals:																	
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																	
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Enhancing Quality of Life	64	Support the provision of scoot service on the North Fork (i.e., Riverhead to Greenport), and on the South Fork (i.e., Speonk to Montauk).	North Fork and South Fork	LIRR	X	X	X		X	X		X					Refer to Appendix A, Section 3.3.7.1., page A-39
Enhancing Quality of Life	65	Study feasibility of long term parking facility at Gabreski/West Hampton to encourage weekenders use of LIRR.	West Hampton	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.7.4.4., page A-157
Enhancing Quality of Life	66	Provide improved connections from LIRR stations to Fire Island beach communities.	Fire Island	SCT	X	X			X	X		X					Refer to Appendix A, Section 3.4.7.3., page A-89
Enhancing Quality of Life	67	Support the rehabilitation of LIRR stations.	General	LIRR		X			X	X		X					Refer to Appendix A, Section 3.4.9., pages A-99 and A-100
Enhancing Quality of Life	68	Improve site conditions (lighting, safe crosswalks, sidewalks, etc.) to encourage use of remote parking facilities at LIRR stations.	General	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.4.9., pages A-99 and A-100
Enhancing Quality of Life	69	Provide Park and Ride facilities and 'Zip Car' type arrangements for car-free Suffolk County resident/tourist use to and from mass transit facilities.	General	LIRR	X	X			X	X		X					Refer to Appendix A, Section 3.3.8.5., page A-40

Table 2-1 (cont'd)

Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
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Enhancing Quality of Life	70	Establish multimedia kiosks at LIRR stations that allow commuters and tourists to explore Suffolk-based tourism options in the nearby vicinity.	General	LIRR, LICVB	X					X	X	X			X		X	
Infrastructure - Transportation - Ferry																		
Strengthening Economic Capacity	71	Assess the viability of passenger ferry service between the North and South Forks of Long Island in coordination with appropriate entities.	North and South Fork	Towns, Ferry Operator	X					X		X					Refer to the <i>Long Island Sound Waterborne Transportation Plan</i> (NYMTC)	
Strengthening Economic Capacity	72	Assess the viability of establishing additional ferry terminals in Suffolk County.	General	Towns, Ferry Operator			X					X				X	Refer to the <i>Long Island Sound Waterborne Transportation Plan</i> (NYMTC)	
Infrastructure - Transportation - Airports																		
Resiliency	73	Support the critical roles of Suffolk County airports in disaster relief.	General	FEMA, Airport Management	X	X	X			X	X		X				Refer to Appendix A, Section 3.7.3.3., page A-142 and Section 3.7.4.6., page A-158	
Strengthening Economic Capacity	74	Develop and support County-wide airport managers network.	General	NYSDOT, Towns, Airport Management	X						X	X				X		
Strengthening Economic Capacity	75	Coordinate TOD with airport marketing initiatives.	General	NYSDOT, Towns, Local Chambers of Commerce	X	X	X				X					X		

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
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Major Goals:																	
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Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	76	<i>Incentivize on airport, non-airside development including light industry and/or major aircraft manufacturing tenants, as approved by local zoning.</i>	General	Towns, Airport Management, NYSDOT	X	X					X						Refer to Appendix A, Section 3.7.2.3., pages A-128 and A-129
Strengthening Economic Capacity	77	Publicize the economic benefits that airports bring to local communities (NYSDOT 2010 Study).	General	NYSDOT	X				X	X							Refer to Appendix A, Section 3.7.2.7., pages A-134 and A-135 and Section 3.7.3.6., page A-148
Strengthening Economic Capacity	78	<i>Support the building of alliances between local corporate business and airports in Suffolk County.</i>	General	Chamber of Commerce, Airport Management	X					X							Refer to Appendix A, Section 3.7.3.4., pages A-144 and A-145
Strengthening Economic Capacity	79	Support airport initiatives to promote Suffolk County as a tourist destination, and utilize local airports to get there.	General	Chamber of Commerce, Airport Management	X					X							Refer to Appendix A, Section 3.7.5., pages A-159 and A-160
Strengthening Economic Capacity	80	<i>Collaborate with towns to make the enhancement of industrial and commercial uses near airports a priority and to facilitate such development.</i>	General	Towns, Airport Management, NYSDOT	X	X			X	X				X		X	Refer to Appendix A, Section 3.7.5., pages A-159 and A-160

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
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Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Strengthening Economic Capacity	81	Support intermodal connectivity initiatives between rail and air.	MacArthur Airport	Town of Islip	X	X	X		X	X	X	X					Refer to Appendix A, Section 3.7.5.1., page A-160	
Strengthening Economic Capacity	82	Support capital investments to address aging airport facilities and improve passenger level of service.	General	Town of Islip, Airport Management, NYSDOT	X	X	X		X	X	X						Refer to Appendix A, Section 3.7.5., pages A-159 and A-160	
Enhancing Quality of Life	83	Improve wayfinding information regarding access to airport facilities on local highways, LIRR maps, etc.	General	NYSDOT	X						X						Refer to Appendix A, Section 3.7.5., pages A-159 and A-160	
Community Development - Integrated Strategies																		
Resiliency	84	Continue to coordinate New York Rising with the SC HMP to identify critical facilities and priority needs.	County-wide	NYS DOS, Towns, Villages	X	X			X	X			X	X	X	X	The SC HMP identifies critical facilities across the County including structures in all of the Towns and Villages. This listing is contained in Appendix F. Priority listings of each jurisdiction's projects are contained in the individual Jurisdictional Annexes in Section 9. Refer to Appendix C, Section 3.4.2.1., pages C-32 and C-33	

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References	
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training		Foster or Promote Regional Collaboration
Major Goals:																		
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Resiliency	85	Implement recommendations of the SC HMP pending funding availability.	County-wide	Federal, State	X				X	X				X	X	X	X	Suffolk County, all 10 Towns, all 33 Villages, both Tribal Nations and Suffolk County Water Authority, are awaiting approval to proceed with work on over 200 mitigation initiatives. The focus on mitigation and mitigation initiatives is discussed in the SC HMP, Sections 3 - Planning Process, 6 - Mitigation Strategies and 7 - Plan Maintenance, as well as Appendix E - FEMA Guidance Worksheets. Retrofitting of housing structures located in flood-prone areas is widely addressed in the SC HMP, both at the County level and in the individual Jurisdictional Annexes contained in Section 9. Within SC Annex Section 9.1, specific initiatives which directly align with this action are SCFRES-1, SCFRES-2, and SC -2. This action is further aligned with SCFRES - 6, which provides for a County-wide multi-year hazard mitigation education program for all residents to improve and enhance awareness of natural hazard preparedness, response and recovery. Refer to Appendix B, Section 1., pages B-1 and B-2
Strengthening Economic Capacity	86	Ensure consistent General Municipal Law - 239 review of development projects against County Comprehensive Plan.	County-wide	Towns	X			X	X		X		X	X	X		X	Refer to New York State General Municipal Law 239 - http://codes.lp.findlaw.com/nycode/GMU/12-B/239-m

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

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Major Goals:																		
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Strengthening Economic Capacity	87	Evaluate local zoning codes and best-practices to determine efficient methods for encouraging a variety of housing options.	County-wide	Towns	X			X			X	X			X		X	Refer to Appendix C, Section 3.4.2.1., pages C-31 and C-32
Strengthening Economic Capacity	88	<i>Consider strategies to preserve a range of housing opportunities in areas subject to rapid growth.</i>	County-wide	Federal, State, Towns, Villages,	X	X	X	X	X						X		X	Refer to Appendix C, Section 3.4.2.1., pages C-31 and C-32
Strengthening Economic Capacity	89	Identify uses/users most suitable for growth center locations and associated infrastructure needs.	Growth Centers	Towns	X			X	X	X	X	X			X		X	Refer to Appendix B, Section 1.3., pages B-40 through B-42
Strengthening Economic Capacity	90	Identify the catalytic potential of public properties within growth centers.	Growth Centers	Other County and State agencies		X		X	X		X			X	X		X	Refer to Appendix B, Section 1.3., pages B-42
Strengthening Economic Capacity	91	Serve as clearinghouse / information source on TOD studies.	County-wide	State agencies, NGOs, Towns	X			X						X	X		X	Refer to Appendix A, Section 3.6.6., pages A-38 and A-39; Appendix B, Section 1.3., page B-42; and Appendix C, Section 3.4.2.1., pages C-31 and C-32
Enhancing Quality of Life	92	Examine the feasibility of expanding regional Transfer of Development Rights (TDR) programs.	County-wide	Towns, NGOs	X	X		X			X		X	X	X		X	Refer to Appendix B, Section 1.4.4.1, page B-55 and B-56; and Appendix C, Section 3.4.2.1, page C-32
Enhancing Quality of Life	93	Implement regional TDR pilot program with participating towns.	County-wide	Towns		X		X			X		X	X	X		X	Refer to Appendix B, Section 1.4.4.1, page B-55 and B-56; and Appendix C, Section 3.4.2.1, page C-32

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

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					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Enhancing Quality of Life	94	Limit use of TDR programs in low-income areas to protect targeted open space parcels.	County-wide	Towns, Villages,	X	X	X		X					X	X		X	Refer to the <i>Suffolk County Transfer of Development Rights (TDR) Study (2014)</i>
Community Development - Economic Development																		
Strengthening Economic Capacity	95	Partner with high schools, colleges and universities to promote careers in target sectors.	County-wide	School Districts	X	X					X				X		X	Refer to Appendix B, Section 1.2.1.3., pages B-32 and B-33 and Section 1.2.1.5., pages B-35 through B-38
Strengthening Economic Capacity	96	Encourage internship opportunities to develop needed skill sets.	County-wide	School Districts	X	X					X				X		X	Refer to Appendix B, Section 1.2.1.3., pages B-32 and B-33
Strengthening Economic Capacity	97	Create local incentives to attract target sector businesses in TODs, as appropriate.	County-wide	Towns		X		X		X	X		X	X	X		X	Refer to Appendix B, Section 1.4.4.1., pages B-55 and B-56
Strengthening Economic Capacity	98	Attract target sector businesses to Suffolk County through various marketing and publicity strategies.	County-wide	Chamber of Commerce, IDAs, Towns, Villages	X	X					X				X		X	Refer to Appendix B, Section 1.2.1.5., pages B-35 through B-37

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives										Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	Foster or Promote Regional Collaboration	
Major Goals:																		
Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County.																		
Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																		
Strengthening Economic Capacity	99	Attract visitors and tourists (traditional, eco- and agri-tourism) to Suffolk County through various marketing, publicity, and educational strategies and campaigns.	County-wide	Chamber of Commerce, Towns, Villages	X	X					X					X	Refer to Appendix B, Section 1.2.1.5., pages B-35 through B-37	
Community Development - Housing Options																		
Strengthening Economic Capacity	100	<i>Coordinate efforts to provide sewers in locations that are suitable for a range of housing types.</i>	County-wide	Towns	X	X		X	X				X	X	X		Refer to Appendix C, Section 3.4.2.1., pages C-32 and C-33	
Strengthening Economic Capacity	101	Offer priority funding for workforce housing preservation and/or development within 1/2-mile from transit stations.	County-wide	IDA		X		X		X			X	X			Refer to Appendix C, Section 3.3.2, page C-27	
Strengthening Economic Capacity	102	Support the promotion of housing visualization and development of informational materials to help towns inform the public about the advantages of a range of housing options/types.	County-wide	Federal, State, Nonprofit	X	X		X				X		X			Refer to Appendix C, Section 3.4.2.1, page C-32	

Table 2-1 (cont'd)
Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals: Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County. Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	103	Provide technical assistance to communities interested in TODs to better understand benefits of the vibrant mix of uses, amenities and functions that are associated with such development.	County-wide	Federal, State, Nonprofit	X	X		X				X		X	X		Refer to Appendix C, Section 3.4.2.1., pages C-32 and C-33
Strengthening Economic Capacity	104	<i>Encourage individual town review/revision of zoning to ensure that zoning is supportive of higher density residential development surrounding transit stations.</i>	County-wide	Towns		X		X				X		X	X		Refer to Appendix C, Section 3.4.2.1., pages C-32 and C-33
Strengthening Economic Capacity	105	Encourage designation of TOD projects and projects with large affordable housing component as Projects of Regional Significance.	County-wide	LIREDC	X	X		X				X		X	X		Refer to Appendix C, Section 3.4.2.1., pages C-31 and C-32
Strengthening Economic Capacity	106	Educate towns on funding sources for low-income, workforce, and senior housing.	County-wide	Towns	X			X						X			Refer to Appendix C, Section 3.4.2.1., pages C-31 and C-32
Strengthening Economic Capacity	107	<i>Review expedited approval processes for affordable housing projects.</i>	County-wide	Towns	X	X		X						X			

Table 2-1 (cont'd)

Implementation Strategy—Recommended Actions

Theme	No.	Recommended Action	Location	Partner(s)	Timeframe			Objectives									Documentation/References
					Short-term (0-5 yrs.)	Mid-term (5-10 yrs.)	Long-term (10-20 yrs.)	Provide Housing Options	Infrastructure Supporting Sustainable Growth	Mobility/Access/Safety	Growth of Target Sectors	Enhance Connectivity	Improve Resiliency to Effects of Climate Change	Protect Open Space & Natural Resources	Protect/Improve Quality of Life	Provide Workforce Education & Training	
Major Goals: Goal #1: Provide the foundation for sustainable growth and resiliency of Suffolk County. Goal #2: Encourage economic development that will help to retain and attract businesses and create jobs for Suffolk County residents.																	
Strengthening Economic Capacity	108	Offer exceptions, reductions or waivers of permit fees and sewer connection fees for affordable housing projects and TODs, as authorized under County Law, Section 740-38, B.	County-wide	County, Towns, Villages		X		X							X		Refer to Appendix C, Section 3.4.2.1., pages C-32 and C-33

*

1. INTRODUCTION

Suffolk County is at a turning point in its history; the relationship between land use and the overall economy, traffic and transportation systems, and available natural and built resources must be restructured and changed. Gone are the days when single-family residences are the sought-after housing choice, and large, regional stores and shopping centers are encouraged. Decades of sprawl-like growth, beginning after World War II, have culminated in increased traffic congestion and air pollution on major and local roadways in Suffolk County as residents travel to employment areas, in locations which can be as scattered as the subdivisions they reside in, in single-occupant vehicles. Reversing this trend by concentrating employment and residential developments to make mass transit, by bus or rail, not only more viable, but the preferred mode of connectivity between them will reduce traffic congestion and improve air quality. The County is already undertaking efforts to facilitate this change through the *Connect Long Island* initiative and the *Bus Rapid Transit (BRT) Feasibility Study*. Similarly, the Long Island Rail Road's Double Track project between Farmingdale and Ronkonkoma will facilitate more efficient movement of people to and from work, in both traditional and reverse commuting directions. The construction of new Regional Transit-Oriented Developments (TODs) such as Heartland Town Square, Wyandanch Rising and the Ronkonkoma TOD will go a step further by recreating the traditional, pre-1960s, mixed-use developments in vibrant downtown areas where people can live, work, shop and play by walking or biking, avoiding automobile use and its associated congestion entirely. The expansion of sewer systems to serve these new concentrated developments will result in a significant improvement in the quality of Suffolk's underground aquifer, its drinking water supply. Similarly, preserving Suffolk's open space, while encouraging these more densely-developed areas, will help to optimize the availability of a high-quality water supply for decades to come.

In the wake of Superstorm Sandy in October 2012, it has become apparent that it is more important than ever to plan for community resiliency and adaption to the effects of climate change. Ensuring that systems and facilities are resilient in the face of natural disasters has a direct bearing on the economic prosperity of a region. The more resilient such systems and facilities are, the more likely the region would fare well in a natural or other disaster and be able to move forward without undue disruption or economic damage in the aftermath. As was seen during the aftermath of Sandy, disruptions to basic infrastructure services such as water, electricity, and bridges can have devastating effects. Also, the costs necessary to repair or replace infrastructure, housing, and businesses can be prohibitive. It is for these reasons that

policies, programs, and/or initiatives related to transportation infrastructure and issues need to also incorporate consideration of how to better achieve resiliency and adaptation to climate change. Communication and collaboration between planners and emergency managers is crucial for ensuring that appropriate hazard assessment information is considered during future transportation infrastructure planning. These and other resiliency and climate adaptation techniques and recommendations have been taken into consideration as part of the planning efforts undertaken for this *Suffolk County Comprehensive Master Plan 2035 (SCCMP 2035)*.

In terms of transportation issues, the *SCCMP 2035* has as a primary focus understanding the relationship between traffic and transportation systems, land use and the overall economy, and the natural and built environments to ensure that this Comprehensive Plan provides a roadmap for Suffolk County's future where an appropriate balance between the need for improved mobility and connectivity (partially addressed by transportation measures) compliments sustainable growth and economic development based on sustainable smart-growth planning and policy initiatives. These connections will set the foundation for sustainable economic growth and help improve the quality of life of Suffolk County residents. In terms of transportation issues, the following are the critical aspects to this Comprehensive Plan:

- Think and plan regionally;
- Provide for a transportation system that efficiently connects land uses and people;
- Design for interconnections between natural and built resources; and
- Consider and incorporate resiliency and climate change adaptation.

1.1. SUFFOLK COUNTY: YESTERDAY AND TODAY

Suffolk County has a population of about 1.5 million, which is an increase of over 5 percent since 2000. This population has aged and become more diverse over the last decade. Based on population projections, the County is expected to grow by approximately 150,000 persons by the year 2035. As the County's population profile continues to evolve and the population grows, so does the need for new and additional amenities, including improved public transportation and transportation infrastructure.

1.1.1. SUFFOLK COUNTY YESTERDAY

Current trends suggest that by 2035, approximately 1,650,000 residents will live in Suffolk County. The transportation infrastructure designed for three-quarters of a million residents cannot meet the needs of a future population with 2.2 times the number of County residents.

The population explosion of the 1950s and 1960s resulted in conditions where the car was king, and Suffolk County's transportation infrastructure developed accordingly.

The Long Island Rail Road (LIRR), in financial default in the 1950s, was brought back to life by financing from New York State when it became apparent that growth in Long Island was highly dependent on expanded commuter rail service. In 1966, the Metropolitan Commuter Transportation Authority was formed, and the LIRR continued to improve and expand service for the "bedroom communities" growing throughout Suffolk County. Despite the continued and growing demand for added service to the East End of Long Island, the LIRR has not kept up the pace of its improvements in frequency of service to the easternmost reaches of Suffolk County.

In the 1960s, independent suburban bus routes, some of which still continue to operate today under the umbrella of Suffolk County Transit, provided service along major arteries throughout the County. Today, popular for-profit services such as the Hampton Jitney and the Hampton Luxury Liner provide a higher level of service for the East End as the twin forks communities continue to grow in popularity as a year-round tourist and residential destination. Unfortunately, the existing highway/parkway systems of Long Island have not been expanded to accommodate the tremendous population growth around them since their construction. Like the private automobile, buses fall victim to traffic congestion.

Ferry service on Long Island dates as far back as the 1700s. Auto ferry service began in the 20th century, crossing the Long Island Sound and providing service between Greenwich, Connecticut, and Oyster Bay (in Nassau County). By 1925, ferry service between Connecticut and Long Island would carry dozens of cars and thousands of passengers; with dozens of trips per day between different communities. Today the ferries between Connecticut and Port Jefferson and Orient Point provide ongoing year-round service and a critical transportation link that saves users time. The ferry service to Shelter Island from both Greenport and North Haven provide the only connection to Shelter Island. Despite this long history of waterborne transportation, ferry service has never provided Suffolk County residents the much needed alternative to commuting on congested arteries and parkways. Increased use of ferry service would serve to limit the future growth of traffic congestion. Lessons learned in a post-Hurricane Sandy New York have taught us the importance of providing redundant means of transportation. While roadways can be washed away or become impassable; our latest experiences demonstrate that ferry service was the most reliable post-storm transportation option.

1.1.2. SUFFOLK COUNTY TODAY

Today, Suffolk County is characterized as a largely suburban and residential county with a mix of commercial and industrial uses that are interspersed with recreational opportunities and valuable natural features. Given the County's physical shape and existing infrastructure, development has and continues to occur in a scattered and sprawled fashion over the whole County. This development pattern has resulted in traffic congestion and pollution, and other undesirable effects that diminish the viability of the County's transportation systems, economic viability and overall quality of life.



Prospective residents of Nassau and Suffolk County, with a combined population of over 3 million, are served by only one commercial aviation facility—Long Island MacArthur Airport, formerly known as Islip Airport. Other smaller airports on Long Island serve private aircraft and charters; these include Republic Airport in East Farmingdale, Francis S. Gabreski Airport in Westhampton Beach, Brookhaven Calabro Airport in Shirley and East Hampton Airport. Unlike LaGuardia and John F. Kennedy Airports, Long Island MacArthur Airport is not congested, and therefore has an exceptional record of on-time performance. With a diverse user base of passenger, cargo, air taxi, general aviation and military flights, current projections suggest an average growth of about 1.6 percent per year in aircraft operations. From its inception as a commercial airport in 1960, MacArthur Airport now provides service to over 2 million passengers a year. Recently, a new control tower and fuel farm have been constructed. Located in the central portion of Long Island, MacArthur offers regular scheduled flights from major domestic cities, with Southwest Airlines being the primary carrier. Efforts have been made to provide intermodal connectivity at MacArthur Airport. These include:

- Dedicated shuttles from MacArthur Airport to the nearby LIRR station at Ronkonkoma. The LIRR currently offers a discount package for airport passengers, which includes the cost of shuttle service between the train station and airport terminal.
- Suffolk Transit’s S57 route serves the airport, which connect it with Sayville and the Smith Haven Mall, located in Lake Grove, New York.
- A Greyhound bus terminal, which is a short distance away.
- The Hampton Jitney’s Westhampton and Montauk lines stop along the Long Island Expressway (Interstate 495) at Exit 60. The stop is called the Islip Airport Connection, and is a short cab ride away from the airport terminal.

The “2012 Long Island MacArthur Airport Master Plan Update” recommended further study to investigate the advantages of providing an intermodal connection to nearby LIRR stations. As is the case at many other regional airports, improved access could prove beneficial in reversing catchment area leakage to other facilities (i.e., JFK, LGA, and Newark Liberty International). Forecasted growth in air travel at the airport could generate upwards of 15,000 additional jobs, generating a commensurate increase in economic impact in the area. Additionally, coordination between MacArthur Airport and the LIRR, in terms of railroad schedules and frequency of service, could make the connection between these two modes more convenient and desirable.

Freight handling is also crucial to the future growth and development of Suffolk County. Like most of New York State, trucks carry over 99 percent of the County’s freight. This dependence on the County’s highways further congests a system that is already overburdened. Expanding freight rail service can be accomplished by retrofitting infrastructure (vertical clearance improvements) as well as investing in intermodal terminals to serve Suffolk County. Waterborne options for freight handling (currently representing less than 20 percent of the region’s freight transport), such as those evaluated in NYMTC’s “Long Island Sound Waterborne Transportation Plan” would further reduce traffic congestion, time delays, and the expense associated with truck freight.

1.2. THE CHANGING FACE OF SUFFOLK COUNTY—PROMOTING SUSTAINABLE GROWTH

The transportation needs of Suffolk County’s residents in 2014 as well as in the future differ significantly from those of the “baby boom” years of the 1950s and 1960s. The young couples who moved to Suffolk County to begin their families in the 1960s are nearing or have transitioned into retirement: some are staying in their homes, others are downsizing and/or relocating.

Like the rest of the country, shifts in demographics are changing the composition of Suffolk County. The County's average household size has decreased to 2.93 persons; and nearly 30 percent of all households in Suffolk County contain a senior citizen. The Suffolk County of 2014 is far more racially and economically diverse than that of past decades. Each of these demographic shifts warrants evaluation for their effects on the projected transportation requirements. For example, would an aging population continue to rely on private vehicles as its main mode of transportation if better mass transit options became available?



The aim of the *SCCMP 2035* is to identify, examine and address the wide range of issues that have an impact on life in the County—traffic congestion and transportation issues being among the most critical and broadly observed. One of the most effective means of addressing the variety of issues facing Suffolk County now and into the future will be to support and develop sustainable “smart” growth strategies and policies as an integral part of the Master Planning effort. The strategies that effectively strike this balance will be essential to creating a vibrant and prosperous future for Suffolk County.

The “sprawl” development pattern has predominantly been encouraged and sustained in communities throughout the country (including in Suffolk County) because of the vast amounts of land available, high levels of automobile use, and zoning regulations that mandate the separation of differing land uses. Sustainable development or “smart growth” directs development back to traditional downtown mixed-use areas where adequate infrastructure

exists. It provides an environment that enhances the quality of human life through a balanced mixture of residential, commercial, industrial, and open space land uses that meet the needs of the entire population. One guiding principle of smart growth is to rejuvenate and strengthen local downtown areas, while protecting existing natural resources and utilizing more efficiently the existing transportation network. This type of Transit Oriented Development (TOD) incorporates a balanced mix of uses in a well-planned, aesthetically pleasing, and pedestrian-friendly environment. Transit stations are transformed into hubs of new activity. It is generally acknowledged in the planning community that this type of development enlivens and provides a sense of identity and well-being within a community.

Steadily increasing traffic generation and its adverse effect on mobility is one of the most significant issues confronting Suffolk County and Long Island as a region. The lack of north-south connectivity via mass transit and the suburban sprawl that has defined the County since the 1950s and 1960s have placed significant demands on the region's highways and roadways. The resulting congestion manifests itself in longer travel times, and in shifts of traffic to secondary and local roadways, as well as an overall degradation of traffic operating conditions, with an associated degradation in the quality of life in affected areas. Consistent with national planning theories and guidelines, as well as the County Executive's initiative to build an innovation economy, the only way to alleviate traffic congestion and create economic development initiatives is to develop a fully integrated public transportation system. Such a transportation system would provide seamless connections between modes of transportation and varied land uses, but would only work if a development approach that revitalizes or establishes high-density downtown areas around transit hubs and stations is also implemented. The overall objective is to enhance mobility and promote sustainable economic development, while maintaining the high quality environment that residents and visitors demand.

A study prepared by NYMTC entitled *The Mobility for the Millennium, A Transportation Plan for the New York Region*, stresses the importance of land use/transportation connectivity as a key ingredient to enhancing mobility and the quality of life in the region. To achieve this goal, the plan suggests that location decisions for new development should take into consideration the availability of adequate transportation services; that transportation facilities should be incorporated into the design of new development; and that proposed improvements to the transportation system should improve access to major activity centers, facilitate multimodal connections, and provide travel options to relieve congestion. This is particularly relevant in light of the current traffic situation, which is projected to continue to deteriorate throughout the County.

2. ASSESSMENTS OF NEEDS AND DEFICIENCIES FOR ROADWAYS, PEDESTRIANS, AND BICYCLISTS

2.1. ROADWAYS

2.1.1. OVERVIEW

Suffolk County is served by over 7,400 miles of roads. More than 75 percent of that mileage (about 5,800 miles) represents roads which are maintained by the County's 10 Townships. While State and County Roads represent only about 1,030 miles, or about 15 percent of the total mileage, they are the main arteries of travel in the County, and include an Interstate Highway (the Long Island Expressway), as well as highways on the National Highway System (e.g., NY 27/Sunrise Highway). Most State and County roads, as well as key Town arterials, are on the Federal Highway Administration's Urban System, which makes them eligible for Federal aid for roadway maintenance and improvement projects. Any contemplated transportation project which utilizes Federal Aid must appear in the Transportation Improvement Program prepared by our Region's Metropolitan Planning Organization (M.P.O.), NYMTC. The Suffolk County Executive is a voting member of NYMTC.

While each municipality is responsible for maintaining its roadways, Suffolk County is unique in that traffic signals on County roads, although installed by the County, are maintained by individual Towns and Villages.

2.1.1.1. *Traffic Safety*

Based on the latest available statistics from the State Department of Motor Vehicles, the following observations can be made about motor vehicle crashes in Suffolk County:

- Suffolk County's population is about 7.7 percent of New York State's total population. Suffolk is the fourth most populous County, behind Kings, Queens, and New York (Manhattan) Counties.
- Suffolk County has about 1,075,000 licensed drivers, or about 9.6 percent of the statewide total.
- In 2012, there were 29,124 crashes in Suffolk, or 9.9 percent of the statewide total.
- In 2012, Suffolk County had 140 fatalities, and 17,500 injuries. Suffolk County ranked Number 2 in New York State, behind Nassau County.
- In the period from 2009 through 2011, Suffolk County ranked Number 2 in New York State in bicycle accidents with a total of 1,260. (Nassau County had 15 more accidents in the same period.)

- During the years from 2009 through 2012, Suffolk County ranked Number 1 in alcohol-related crashes, with a total of 3,538.
- In the period from 2009 through 2012, Suffolk County ranked Number 1 statewide in speed-related crashes, with a total of 9,126.

Although these observations indicate that Suffolk County crash statistics are not significantly disproportionate when compared with statewide data, the sheer numbers of fatalities, injuries, and total crashes are significant.

Suffolk County's Number 1 ranking in alcohol crashes is a significant concern. In 2012, Suffolk County had 872 such crashes, 45 percent higher than the second-ranked Nassau County, which had 600 alcohol-related crashes. Education and Enforcement are the two prime measures employed to combat alcohol-related crashes. Suffolk County, through its "STOP DWI" Program, has been working with the Board of Cooperative Educational Services (BOCES), a regional organization of school districts, to educate high school students about the consequences of driving while intoxicated/impaired.

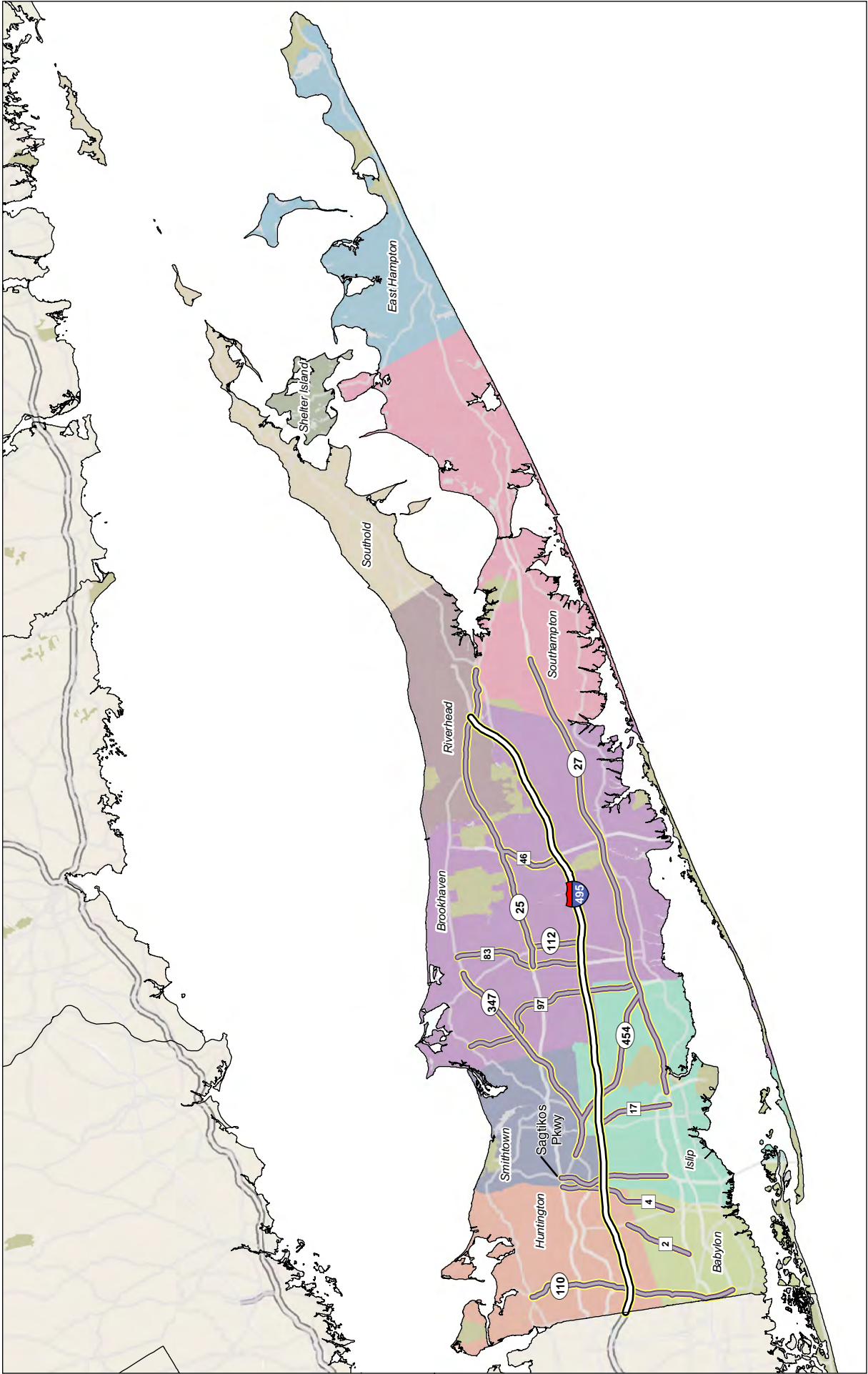
In 2011, the various police agencies in the County arrested more than 5,100 individuals for driving while impaired by alcohol or drugs, and issued over 11,700 speeding tickets. The level of enforcement which can be provided is limited by the annual budgets of these agencies.

In the future, increased funding for educational and enforcement efforts to combat the occurrence of alcohol- and speed-related crashes in Suffolk County should be pursued.

2.1.2. KEY ROADWAY CORRIDORS

As a first step in identifying transportation corridors that will foster future economic development in Suffolk County, a list of key roadway corridors has been developed, based on their ability to provide connectivity between significant development projects, areas of economic growth, proposed TODs, and other potential growth areas. The roadways include State and County roads, and appear on **Table A-1** and on **Figure A-1**.

These roadway corridors include several identified in the County Executive's *Connect Long Island* initiative, which include the three priority corridors being analyzed in the County's 2014 BRT Feasibility Study: NY Route 110, County Road (CR) 97/Nicolls Road and the Sagtikos Parkway.



8/27/2014

Source: ESRI/TIGER Line files

Vital Roadways in Suffolk County
Figure A-1

**TABLE A-1
ROADWAYS VITAL TO ECONOMIC DEVELOPMENT**

DIRECTION	ROADWAY/AADT(2)	FROM	TO	CONNECTIVITY
EAST-WEST	I-495 (LI EXPRESSWAY)	NASSAU LINE	CR 58	HAUPPAUGE INDUSTRIAL PARK, LITRIM, HEARTLAND TOWN SQUARE, RONKONOMA HUB TOD, YAPHANK MEADOWS/BNL, RIVERHEAD, BROOKHAVEN RAIL TERM.
	NY 27/SUNRISE HIGHWAY	SOUTHERN STATE PKWY	GABRESKI AIRPORT (CR 31)	GABRESKI AIRPORT, ISLIP PINES
	NY 347	NORTHERN STATE PKWY	NY 25A	STONY BROOK UNIV.
	NY454/VETS HWY	NY 347	NY 27	ISLIP PINES
	NY25	CR 83	RIVERHEAD (CR 63)	CORAM/RIVERHEAD/EPCAL
NORTH-SOUTH	NY 110	NY 27	NY 25A	HUNTINGTON STATION/PINELAWN STATION
	CR 2	SOUTHERN STATE PKWY	NY 231	WYANDANCH RISING
	CR 4	NY 231	NY 25	HEARTLAND TOWN SQUARE
	SUNKEN MEADOW / SAGITKOS PKWYS	SOUTHERN STATE PKWY	NY 25	HEARTLAND TOWN SQUARE
	CR 17	NY 27	NY 111	CENTRAL ISLIP MIXED-USE DEVELOPMENTS
	CR 97	NY 27	NY 25A	STONY BROOK UNIV.
	CR 83	I-495 (LI EXPRESSWAY)	NY 25A	CORAM
	NY 112	I-495 (LI EXPRESSWAY)	NY 25	YAPHANK MEADOWS/BNL
	CR 46	I-495 (LI EXPRESSWAY)	NY 25	STONY BROOK UNIV.

Note:
BNL-BROOKHAVEN NATIONAL LABORATORY.
LITRIM-LONG ISLAND TRUCK-RAIL INTER MODAL FACILITY.
EPCAL-ENTERPRISE PARK AT CALVERTON.

In addition to these roadways, the main arteries on the North and South Fork are key routes during the peak tourist seasons. On the South Fork, traffic congestion on Montauk Highway has been problematic in the summer tourist season for 30 years. In the 1980s, NYSDOT contemplated the eastbound extension of the expressway portion of NY 27 from its current terminus at CR 39 in Southampton, but was met with significant community opposition. The deterioration of traffic conditions on many segments of NY 27/Montauk Highway east of Southampton Village, to a point where the capacity of the roadway is reached and significant congestion occurs, was predicted to occur by the year 2005 in NYSDOT’s 1986 “*South Fork Transportation Study*.” These conditions have since occurred, not only during the summer months, but on weekends throughout the April-October time period as the tourist season has expanded over the years. Both East Hampton’s Transportation Plan, adopted as part of its Comprehensive Plan in 2005, and Southampton’s 1997 Comprehensive Plan documented these conditions and recommended more reliance on other forms of transportation, such as more frequent LIRR and bus service, to accommodate some of the trips made by automobile.

On the North Fork, the main artery is NY Route 25, from Riverhead to Orient Point, running through the various “hamlet” downtowns. Route 25 is supplemented by a parallel Sound Avenue/Route 48 to the north that helps relieve some of the congestion on Route 25, and

serves as the Route 25 bypass truck route. Over the last 20 years, two events have attracted significant amounts of summer traffic: the advent of casino gambling in Connecticut, which can be reached from Orient Point by the Cross Sound Ferry, and the establishment of wineries and other agricultural based attractions at various locations on the North Fork.

2.1.2.1. *Traffic Safety*

There are no known unusual safety concerns on these roadways. Typically, when a major rehabilitation project is planned by the State or County, traffic accident data is reviewed to determine if any safety-related issues can be addressed during the course of the project.

2.1.2.2. *Traffic Capacity*

Since these key roadways are those typically used for commuting purposes, they carry heavy traffic volumes in weekday peak periods. A “planning level” traffic capacity analysis, in accordance with the 2010 “Highway Capacity Manual,” has been utilized to estimate current Levels of Service (LOS) on these key roadways. (A simplified definition of LOS is a roadway’s ability to accommodate traffic volumes, not unlike the grades on a school report card. LOS D is barely tolerable during peak hours, LOS E represents conditions approaching the roadway’s capacity, and LOS F is significant congestion with long traffic queues.) The methodology uses estimated Annual Average Traffic Volumes (AADT) and “average” conditions along a roadway to estimate LOS. This methodology is similar to that employed in the County’s 2001 “Highway Needs Assessment Report.” Future traffic volumes, calculated by utilizing the population projections provided in the *SCCMP 2035, Volume One A: Inventory* (2011), were then used to estimate LOS in the year 2035. The results appear in **Table A-2**.

2.1.2.3. *Infrastructure Condition*

In general, the pavement and structures (i.e., bridges) along the key roadways are well-maintained by NYSDOT and the County’s Department of Public Works (DPW). Both agencies regularly resurface main arterials, such as the Long Island Expressway and Nicolls Road, and both utilize bridge condition inspections, conducted by law every two years, to prioritize bridges for rehabilitation, such as the replacement of concrete bridge decks, or other critical bridge elements.

TABLE A-2
ROADWAYS VITAL TO ECONOMIC DEVELOPMENT
ESTIMATED LEVELS OF SERVICE – EXISTING AND 2035

DIRECTION	ROADWAY/AADT(2)	FROM	TO	LOS(1)		MILES	
				EXISTING	2035		
EAST-WEST	I-495 (LI EXPRESSWAY) 185,000	NASSAU LINE	NY 110	E	F	1.4	
		NY 110	BAGATELLE RD	E	F	2.5	
		BAGATELLE RD	CR 231	F	F	1.72	
		CR 231	CR 4	F	F	2.58	
		CR 4	SAGTIKOS PWKY	D	E	0.73	
		SAGTIKOS PWKY	CR 67	-	-	2.45	
		CR 67	NY 111	-	-	0.91	
		NY 111	CR 454	E	E	1.65	
		CR 454	OLD NICHOLS RD	-	-	1.28	
		OLD NICHOLS RD	CR 93	-	-	1.84	
		CR 93	RONKONKOMA AVE	E	F	0.69	
		RONKONKOMA AVE	CR 19	-	-	1.47	
		CR 19	CR 97	E	F	1.61	
		CR 97	CR 83	-	-	1.8	
		CR 83	NY 112	-	-	1.23	
		NY 112	CR 16	C	C	1.16	
		CR 16	CR 101	-	-	1.95	
		CR 101	CR 21	-	-	1.14	
		YAPHANK AVE	CR 46	C	C	1.62	
		CR 46	WADING RIVER RD	B	B	3.88	
WADING RIVER RD	CR 111	-	-	1.21			
CR 111	NY 24	A	A	4			
NY 24	CR 58	A	A	1.77			
EAST-WEST	NY 27/SUNRISE HIGHWAY 149,000	SOUTHERN STATE PKWY	NY 27A/CR 85	F	F	1.57	
		NY 27A/CR 85	CR 93	E	E	2.81	
		CR 93	CR 454	D	D	2.19	
		CR 454	CR 19	C	D	1.57	
		CR 83	NY 112	D	F	1.16	
		NY 112	CR 101	E	F	2.37	
		CR 101	CR 16	D	F	2.93	
		CR 16	CR 46	D	E	2.17	
		CR 46	CR 51	B	C	6.92	
		CR 51	CR 111	B	B	1.4	
		CR 111	GABRESKI AIRPORT (CR 31)	C	C	4.45	
		NY 347	NORTHERN STATE PKWY	OLD WILLETS PATH	-	-	1
		59,000	OLD WILLETS PATH	NY 454	D	D	1.2
		NY 454	CR 111	B	C	0.85	
		CR 111	CR 16	C	D	1.94	
		CR 16	NY 25	C	D	1.98	
		NY 25	CR 97	C	D	2.26	
CR 97	OLD TOWN ROAD	C	D	2.84			
OLD TOWN ROAD	NY 112	C	C	1.46			
NY 112	NY 25A	B	C	1.04			

Notes:
(1) LOS--Level of Service.
(2) AADT--Current estimated annual average traffic of highest roadway segment.
Blank boxes indicate that AADT was unavailable.

TABLE A-2 (cont'd)
ROADWAYS VITAL TO ECONOMIC DEVELOPMENT
ESTIMATED LEVELS OF SERVICE – EXISTING AND 2035

DIRECTION	ROADWAY/AADT(2)	FROM	TO	LOS(1)		MILES	
				EXISTING	2035		
EAST-WEST	NY 454/VETS HWY 79,000	NY 347	I-495	B	B	1.79	
		I-495	CR 100	C	C	0.93	
		CR 100	CR 93	B	C	3.35	
		CR 93	CR 112	B	C	0.88	
		CR 112	BROADWAY AVE	C	C	1.8	
		BROADWAY AVE	NY 27	B	B	0.56	
		NY 25 48,000	CR 83	NY 112	F	F	1.19
			NY 112	CR 21	F	F	3.27
			CR 21	CR 46	D	F	3.23
			CR 46	WADING RIVER RD	D	D	2.91
		WADING RIVER RD	NY 25A	C	D	2.49	
		NY 25A	I-495	D	F	3.63	
		I-495	MILL RD	D	D	1.88	
		MILL RD	RIVERHEAD (CR 63)	D	F	1.54	
NORTH-SOUTH	NY 110 70,000	NY 27	SOUTHERN STATE PKWY	F	F	1.47	
		SOUTHERN STATE PKWY	NY 109	F	F	1.09	
		NY 109	NY 24	F	F	1.12	
		NY 24	RULAND AVE	F	F	1.39	
		RULAND AVE	I-495	F	F	1.57	
		I-495	CR 3	D	F	0.55	
		CR 3	NORTHERN STATE PKWY	F	F	0.53	
		NORTHERN STATE PKWY	SCHWAB RD	F	F	1.32	
		SCHWAB RD	NY 25	E	F	0.97	
		NY 25	W 11TH	F	F	1.08	
		W 11TH	HOLDSWORTH DR	E	F	1.31	
		HOLDSWORTH DR	NY 25A	D	E	0.9	
	NORTH-SOUTH	CR 2 35,000	SOUTHERN STATE PKWY	CR95	D	D	0.7
CR95			LONG ISLAND AVE	C	D	1.31	
		LONG ISLAND AVE	NY 231	D	D	2.35	
		CR 4 44,000	NY 231	CR 57	D	D	0.43
			CR 57	GRAND BLVD	F	F	0.95
			GRAND BLVD	LONG ISLAND AVE	D	D	0.4
			LONG ISLAND AVE	I-495	F	F	2.86
			I-495	NORTHERN STATE PKWY	E	F	0.97
			NORTHERN STATE PKWY	NEW HWY	D	F	0.68
			NEW HWY	NY 25	D	D	1.02
	SUNKEN MEADOW- SAGTIKOS PKWYS 86,000	SOUTHERN STATE PKWY	PINE AIRE DR	E	F	1.78	
PINE AIRE DR		I-495	D	E	1.42		
		I-495	NORTHERN STATE PKWY	D	E	1.04	
		NORTHERN STATE PKWY	NY 25	E	E	1.86	
	CR 17 25,000	NY 27	SPUR DR SOUTH	F	D	0.86	
		SPUR DR SOUTH	N. RESEARCH DR	D	D	1.29	
		N RESEARCH DR	CR 100	F	F	1.14	
		CR 100	CR 67	D	F	1.02	
		CR 67	NY 111	D	D	0.38	

Notes:

(1) LOS--Level of Service.

(2) AADT--Current estimated annual average traffic of highest roadway segment.

Blank boxes indicate that AADT was unavailable.

**TABLE A-2 (cont'd)
ROADWAYS VITAL TO ECONOMIC DEVELOPMENT
ESTIMATED LEVELS OF SERVICE – EXISTING AND 2035**

DIRECTION	ROADWAY/AADT(2)	FROM	TO	LOS(1)		MILES	
				EXISTING	2035		
NORTH-SOUTH	CR 97 81,000	NY 27	CR 19	C	C	1.33	
		CR 19	CR 90	C	C	1.49	
			CR 90	I-495	D	D	0.54
			I-495	CR 16	D	F	1.06
			CR 16	NY 25	C	D	1.9
			NY 25	HAWKINS/WIRELESS	C	C	1.57
			HAWKINS/WIRELESS	NY 347	B	C	1.68
			NY 347	SUNY SOUTH	C	C	1.7
			SUNY SOUTH	NY 25 A	B	C	1.12
		CR 83 55,000	I-495 (LI EXPRESSWAY)	CR 16	C	D	0.47
			CR 16	MOONEY POND	C	C	2.29
			MOONEY POND	NY 25	B	C	0.38
			NY 25	OLD TOWN ROAD	D	E	0.52
			OLD TOWN ROAD	NY 112	C	C	0.88
			NY 112	CANAL ROAD	C	C	2.15
			CANAL ROAD	NY 25A	A	B	1.69
		NY 112 33,000	I-495 (LI EXPRESSWAY)	CR 16	D	F	0.26
			CR 16	GRANNY RD			1.35
			GRANNY RD	NY 25	F	F	1.56
		CR 46 51,000	I-495 (LI EXPRESSWAY)	LONGWOOD RD	B	B	1.61
		LONGWOOD RD/PRINCETON AVE	NY 25	B	B	2.04	
Notes: (1) LOS--Level of Service. (2) AADT--Current estimated annual average traffic of highest roadway segment. Blank boxes indicate that AADT was unavailable.							

2.1.2.4. Truck Transportation

Trucks perform an important role in transporting goods and materials both to and from Long Island, and in making inter-Island deliveries. According to NYMTC’s “Plan 2040,” trucks carry the majority of freight within NYMTC’s New York City Metropolitan area, transporting up to 80 percent of all freight tonnage. Truck traffic is expected to grow, with estimates ranging from a 39 percent increase by 2035 to a 47 percent increase from 1998 levels by 2025.

Trucking companies try to avoid the congestion that occurs on many of the key roadways in commuter peak hours, particularly east-west roads such as the Long Island Expressway, by scheduling travel during midday off-peak hours and overnight periods. NYSDOT regulates roadways on which the largest tractor-trailer combinations can travel. The entire length of the Long Island Expressway is a NYSDOT-designated “qualifying” highway. Other roadways are classified as “access highways,” which typically are designated connections from a qualifying highway to specific

businesses that require truck deliveries. Many of the key roadway corridors (e.g., NY 25, NY 27, CR 4, and CR 97 are identified in **Table A-1**) contain “access highway” segments.

Part of the effort to improve congestion on Long Island highways is to remove some of the truck traffic from roads by moving freight via rail, which on Long Island is managed by the New York & Atlantic Railway, on LIRR tracks. Toward that end, NYSDOT is proposing to construct the Long Island Truck-Rail Inter Modal (LITRIM) facility just southwest of the Long Island Expressway/Sagtikos Parkway interchange. Smaller facilities, such as the Brookhaven Rail Terminal in Yaphank at the intersection of the Expressway and CR 101, also serve that goal, but to a lesser degree.

2.1.3. NEEDS AND DEFICIENCIES

2.1.3.1. Overview

Resulting primarily from vehicle emissions, Suffolk County—and indeed on all of Long Island—has been classified as a non-attainment area for ozone emissions for about 20 years. The designation of the fourth lane on the Long Island Expressway as a High Occupancy Vehicle (HOV) lane was made in part to satisfy the requirements of the Federal Clean Air Act of 1990 (in regard to ozone emissions). The use of the additional lane as an HOV lane during weekday peak travel periods allows the movement of people at higher speeds, with a corresponding reduction in ozone emissions. Unfortunately, providing HOV lanes on most Long Island roadways is not feasible. However, BRT facilities can achieve the same objective.

Most of the key roadways experience weekday peak hour congestion. On these roads, public right-of-way is not available for the construction of additional lanes (exceptions are NY 347 and NY 27 from Patchogue to Southampton). A common theme in local Comprehensive Plans is the removal of vehicles from congested roadways by facilitating transit use, i.e., rail (LIRR) or bus. The recent movement toward the redevelopment of Long Island “downtowns” is a means of accomplishing this. By encouraging mixed-use, transit-oriented development in these areas, employment, retail and housing density can be increased, thereby creating the demand for more efficient mass transit trips.

As noted previously, NYSDOT and SCDPW develop and identify projects to improve traffic safety and capacity, and maintain roadway infrastructure in a “state of good repair,” on a prioritized basis and as funding allows. Both agencies seek Federal aid for these projects, providing a local “matching” share. Both agencies also initiate and fund their own projects.

2.1.3.2. *Identified Improvement Proposals*

NYMTC's "Plan 2040," adopted in September 2013, is the best source of information for future planned roadway improvement projects.

Constrained Projects

Constrained projects are those for which the scopes of work are fully defined and for which funding is reasonably certain. Projects in NYMTC's "2014-2018 Transportation Improvement Program" are included in this category. Highlighted projects are:

- NY 347 Widening, from NY 111 to Terry Road in Smithtown. This is a Short-Term project, the westerly segment of which is under construction under a Design-Build process. An additional travel lane in each direction is being provided, along with a parallel, shared-use path, as was constructed for NY 347 from NY 454 to NY 111.
- NY 347 Widening, west of NY 454 and east of Terry Road. This is a Long-Term project with multiple construction contracts, with completion dates beginning in 2020, for the Terry Road-NY 25 segment. Upon completion (now estimated in 2032), NY 347 will have been improved for its entire length, from the Northern State Parkway in Hauppauge to NY 25A in Mount Sinai.
- NY 25 Improvements, CR 83 to NY 112. Scheduled for completion in 2020.

Unconstrained Vision Projects

Vision Projects are those which "generally depict additional priorities for the NYMTC planning area through 2040." Funding and implementation schedules have not yet been identified for these projects. Highlights include:

- CR 97, Safety and Congestion Improvements between the Long Island Expressway and NY 25, in the vicinity of Suffolk County Community College.
- CR 83 Widening/Capacity Improvements between the Long Island Expressway and NY 25A.
- Sagtikos Parkway Operational Improvements. NYSDOT is just beginning a study of the entire Sagtikos/Sunken Meadow Parkway Corridor, from Southern State Parkway to NY 25A.
- NY 27 Operational Improvements, NY 112 to Wading River Road in Center Moriches. In 2011 NYSDOT completed a study of this corridor, which identified capacity, safety, and transit improvement alternatives.

- Demand Management/Congestion Pricing Studies on the Long Island Expressway (NY City Line to NY 112) and Northern State Parkway (NY City Line to NY 231).

2.2. PEDESTRIAN TRAVEL

2.2.1. OVERVIEW

Where sidewalks do not exist, pedestrian travel along roadway corridors occurs either on the edges of pavement or shoulders or on the adjacent grass/vegetated areas. As budgets permit, municipalities attempt to construct sidewalks on arterial and collector roads when pedestrian travel becomes significant on the roadway pavement or adjacent unpaved areas.

2.2.1.1. Pedestrian Safety

In 2011, 47 pedestrians were killed in Suffolk County, up significantly from 29 fatalities in 2009, and 625 pedestrians were injured, compared with 522 in 2009. NYSDOT in particular has recently placed an emphasis on pedestrian safety by installing sidewalks, as well as hundreds of Americans with Disabilities Act (ADA)-compliant sidewalk ramps and “countdown” pedestrian signals at intersections on State roads.

2.2.1.2. Shared-Use Paths

A growing number of off-road shared-use paths can accommodate bicyclists and pedestrians. Such planned or recently constructed facilities in Suffolk County include: the Setauket-Port Jefferson Station Greenway Trail which, when completed, will run for 3.5 miles from Setauket to Port Jefferson Station; the County’s proposed 10-mile Port Jefferson-Wading River Rails-to-Trails Project; and NYSDOT’s shared-use path within the NY 347 corridor, which is being constructed as part of the widening of that roadway. While the first of these are primarily recreational, the NY 347 facility will likely also attract significant commuter trips. These paths are generally 10 feet wide, and are designed to safely accommodate both pedestrians and faster-moving bicyclists.

2.2.2. NEEDS AND DEFICIENCIES

NYMTC’s “Plan 2040” recognizes the importance of enhancing safety by reducing the number of crashes involving pedestrians and bicyclists, particularly those who must walk because they do not own a vehicle or do not have convenient access to mass transit.

Because the County’s pedestrian fatalities and injuries have increased over the last couple of years, while those in the overall NYMTC area have decreased over the last 10 years, a closer examination of the factors contributing to the occurrence of these accidents within the County is warranted. The decline in the occurrence of these accidents in New York City, for example,

can be attributed in part to an emphasis on pedestrian crossing safety at intersections. One successful technique is the advanced pedestrian walk interval, whereby pedestrians are given a head start to enter crosswalks before a green signal is given to turning vehicles. In this way, pedestrians are more visible to motorists.

In addition to enhancing mobility for all transportation users, NYMTC's recommendations focus on optimizing the functionality and connectivity of both the pedestrian and bicycle networks. These objectives are achieved by providing walkway and bikeway connections throughout the transportation system, and enhancing accessibility and safety on the regional walkways and bikeways.

2.2.2.1. Sidewalks and ADA Requirements

There are many arterial and collector roadways on which pedestrians walk but do not have the use of sidewalks. Many of the 140 pedestrian fatalities occurred on these roads. Installation of sidewalks on these roads, on a priority basis, as already undertaken by many municipalities within Suffolk County, must be continued to reduce pedestrian fatalities and injuries.

The ADA, first passed in 1990, prohibits disability discrimination, including that of physical access on transportation facilities. This includes the provision of sidewalk ramps at all intersection corners in compliance with ADA Standards for Accessible Design, when reconstruction occurs, as well as for new construction projects.

2.2.2.2. Downtown Areas

Along with the recent emphasis on redevelopment of sustainable downtowns utilizing mixed-use development, which in many cases is transit-oriented, the need to ensure safe pedestrian travel in these areas is apparent. A walkable community can be effective in reducing automobile trips, which in turn can reduce air pollution and improve personal health through exercise. Economic development in these areas can be enhanced when commuters can walk to their jobs and residents can walk to shops and restaurants.

Pedestrian amenities such as wide sidewalks, ADA-compliant ramps, countdown pedestrian signals, and high-visibility crosswalks at intersections, are being employed to optimize safe pedestrian travel. In addition, lengths of pedestrian crossings can be minimized by using narrower travel lane widths to slow vehicle speeds, as well as sidewalk "bulb outs" at intersections, which also make pedestrians more visible to motorists.

2.2.2.3. *Complete Streets Policy*

New York State's Complete Streets are defined as roadways that are planned to afford safe, convenient access and mobility of all roadway users of all ages and abilities. This includes pedestrians, bicyclists, public transportation riders, and motorists; it includes children, the elderly, and persons with disabilities. The Complete Streets Policy, adopted in 2011, requires that State, County, and local agencies consider the convenience and mobility of all users when developing transportation projects that receive State and Federal funding. Suffolk County adopted its Complete Streets Policy in 2012, charging its DPW with carrying out this objective in the planning and design of its projects on County roads. Many of the County's Townships (Brookhaven, Babylon, Islip, and East Hampton) have passed their own Complete Streets Policies.

2.2.2.4. *Shared-Use Paths*

As noted above, three significant shared-use paths are under construction or planned. Construction of additional paths could attract commuter trips and remove automobiles from the congested roadway network in favorable weather conditions. These facilities can also contribute to improved health benefits by providing a means of exercise for users.

2.2.2.5. *Safety*

Safety Initiatives

In addition to its aforementioned sidewalk and pedestrian signal projects on its roadways, in response to high number of pedestrian accidents in two downtown areas (NY 25 in Smithtown, and NY 24/Hempstead Turnpike in Nassau), NYSDOT recently began employing a variety of measures to improve pedestrian safety. These have included traffic-calming measures such as a reduction in the number of travel lanes, erection of fencing in median areas to discourage mid-block pedestrian crossings, and upgrading of pedestrian crossings at intersections.

A few years ago, Suffolk County DPW completed a Federally funded project for Pedestrian Signal Enhancements, which employed the use of countdown pedestrian signals, advance pedestrian walk intervals, and "latching" pedestrian push buttons (i.e., lighted, "elevator-type" buttons) at over 30 intersections in downtown areas, to increase pedestrian crossing safety.

Education

Pedestrian safety education for children is invaluable for preventing their involvement in pedestrian accidents, in childhood through adulthood. For more than 40 years, Nassau County has operated a children's Safety Town, educating children in the 7- to 9-year-old age group in

pedestrian and bike safety. The facility, utilized by school districts within the County, features classroom instruction followed by an outdoor session where children walk, bicycle, and operate motorized cars on the streets of a miniature scale village. The classroom instruction includes demonstrations of traffic signals, pedestrian signals, and signs. In 2009, the Town of Brookhaven opened a similar facility, which was constructed and equipped using Federal, State, and Town funds.

For those children who do not have access to the Safety Town facility, a “portable” facility could be effective in achieving similar results. This would involve transporting safety materials (i.e., classroom presentation materials, traffic equipment, non-motorized “ride-on” vehicles, and miniature buildings) to school gymnasiums for instruction. Brookhaven employed this educational technique prior to constructing its permanent facility.

2.3. BICYCLE TRAVEL

2.3.1. OVERVIEW

Bicycles are a non-motorized mode of transportation which share many similarities to the pedestrian mode of travel. Bicycle safety is a concern; as noted previously, in 2011 there were 1,260 accidents in Suffolk involving bicycles. NYMTC’s “Plan 2040” emphasizes bicycle safety, and recognizes that a bicycle network can provide the connectivity to contribute to the establishment of sustainable communities, a reduction in air pollution, and the achievement of health benefits.

2.3.1.1. Users

Bicyclists can be individuals looking for recreation, exercise, or a viable means of commuting to work. Long Island has several organized bike clubs which schedule outings for recreational/exercise purposes. As noted previously, individuals who commute by bike may do so as a means of exercise, or out of necessity because they do not own a car or do not live in an area served by transit. It should be noted that the bike racks that have been installed on the larger Suffolk County Transit buses are being utilized by a significant number of bicyclists.

2.3.1.2. Existing Facilities

NYS DOT maintains a map of existing bike facilities. There are almost 350 miles of on-road bicycle routes in Suffolk County. Key regional bike routes include the combined Bike Route 25A/25, extending along NY 25A from Cold Spring Harbor east to Smithtown, then on NY 25 east to Orient Point, for a total distance of about 85 miles, and the 30-mile long Bike Route 27, which extends along Montauk Highway from Southampton to Montauk Point. Another significant route is the 43-mile Suffolk County Central Bike Route that extends from Farmingville

to Calverton along multiple roadways. The most common type of bike facility involves vehicles and bikes “sharing the road,” a condition which occurs along most portions of these routes.

2.3.1.3. *Bike Lanes*

Where sufficient pavement width is available, designated bike lanes are provided on major transportation routes. In recent years, municipalities have been installing bike lanes when resurfacing wide roadways, to provide a designated area for bicyclists.

2.3.1.4. *Shared-use Paths*

As noted in the Pedestrian Travel section, shared-use paths are designed to safely accommodate pedestrians and bicyclists. In addition to the shared-use paths noted in that section, examples of existing paths include those along NY 27 in Great River and Oakdale, and on the Stony Brook University campus.

2.3.2. *NEEDS AND DEFICIENCIES*

As is the case for pedestrians, the number of bike accidents (1,260 in 2011) in Suffolk County is a concern, and underscores the need to improve safety for bicyclists. Suffolk County’s Townships and Villages must work together to review bike accident data to identify crash trends that can be reversed by safety improvements.

In addition, municipalities within the County should add additional mileage to the County’s 350-mile bike network by establishing new bike routes, bike lanes, and shared-use paths, where appropriate.

2.3.2.1. *Complete Streets Policy*

As noted in the Pedestrian Travel section, bicyclists’ needs must also be considered in the construction and reconstruction of streets and highways. As a first priority, it should be determined if bike lanes can be provided; if not, ample roadway width to allow bicyclists to safely “share the road” with motorists should be provided.

2.3.2.2. *Downtown Areas*

In addition to safely accommodating bicyclists on downtown roadways, ideally by using bike lanes, bike lockers can continue to be installed at appropriate locations (e.g., at train stations) to facilitate commuting by bicycle.

2.3.2.3. *Shared-use Paths*

Additional shared-use path construction should be considered where feasible, e.g., to provide connectivity between major mixed-use developments and downtown areas, where public right-of-way is available.

2.3.2.4. *Safety*

Education

As previously noted, Nassau County and Brookhaven Town operate children's Safety Town facilities. For bicyclists, the effectiveness of these facilities was documented in a 10-year follow-up study of bike accidents in Nassau County. That study determined that children who attended Nassau Safety Town were *10 times less likely* to be involved in a bike accident than children who did not receive instruction at the facility. Given this significant rate of effectiveness, it would be desirable to construct similar facilities in Suffolk County. At a minimum, as described under Pedestrian Travel, a portable facility can be utilized for those who do not have access to Safety Town.

Bicycle Rodeos are also used to educate children about safe bicycle operation. At these events, children bring their bicycles and helmets, and are instructed about safe bicycling in a fun, noncompetitive atmosphere. Bicycles are inspected, and children are given feedback from instructors on their performance during each learning exercise.

3. ASSESSMENT OF NEEDS AND DEFICIENCIES FOR RAIL, BUS, FERRY, AND AVIATION FACILITIES OPERATIONS

Transportation is a key component of strong social infrastructure. One goal of the *SCCMP 2035* is to address the following key questions related to movement and connectivity in the County:

- How can transportation initiatives contribute to improving how people live, work, and play in Suffolk County of 2035?
- How and where should transit/transportation facilities and infrastructure be improved?
- How can transportation, economic development, and housing and environmental resource protection initiatives be designed to achieve ‘sustainable’ synergies?
- How can transit-supported communities be incentivized?
- How can transit better serve existing job centers and support the development of new job centers?
- How can transit bridge the gap between transit centers and Suffolk County commercial/cultural/educational institutions?

3.1. BUS SERVICE

3.1.1. OVERVIEW

The Suffolk County Bus System provides 52 transit routes throughout the County; this includes transportation for the disabled. Routes serve the Towns of Babylon, Huntington, Islip, Smithtown, Brookhaven, Southampton, East Hampton, Southold, and Riverhead. Operations are currently privatized and are contracted to Suffolk Bus Corporation EBT, Inc. and Twin Forks



Transit. Based on information provided on the Suffolk Transportation Service Inc. website, bus depots are located in Ronkonkoma, Coram, Bay Shore, Southampton, Greenport, and West Babylon, and facilities include offices, training centers, maintenance garages, and secure parking. The fleet includes 30-, 35-, and 40-foot diesel and hybrid-diesel buses, as well as four 35-foot electric buses.

In addition to the Suffolk County Bus System, commuter and tourist bus service is provided by private companies. Hampton Jitney has been in existence since 1974, and has been expanding its service area over the years. They provide year-round service between Eastern Long Island (both the North and South Forks) and New York City. In 2006, Hampton Jitney acquired the Sunrise Coach Lines Company that formerly served the North Fork communities. In 2007, Hampton Jitney began its first service to the North and South Forks from Brooklyn.

Following the trend toward providing bus travel through discount operators, commuter bus service is now provided by the company “7 Bus” between Suffolk County and New York City; with stops in Melville, Ronkonkoma and Riverhead. Service to Stony Brook University began in spring 2014.

In addition, the Town of Huntington operates the HART Bus System which has four local bus routes in the Huntington, Cold Spring Harbor, Greenlawn, and East Northport area.

3.1.2. CURRENT LEVEL OF OPERATIONS AND SERVICE

The Suffolk County Bus System had a ridership of 6.7 million in 2011 and 6.5 million in 2012. Ridership for 2013 is estimated to be 6.4 million. The bus system services a large geographic area and a dispersed population. In many instances bus service is the only transit option. Service is provided Monday through Saturday on the majority of routes. In January 2014 new seven day service began on a handful of routes. Over the last five years bus ridership has generally been on the decline despite overall growth in the County population.



In 2012 fares were increased from \$1.50 to \$2.00 (May 2012). Currently, the full rate bus fare remains \$2.00 with the exception of Routes S92 and S10C which have a fare of \$2.25. Discounts are given to children, seniors, students, persons with disabilities, veterans, and Medicare card holders. Transfers are available for a quarter.

On-time performance for each bus route was provided to Suffolk County Transit by Ridership Plus for the period between September and November 2007. Review of the routes with the

greatest ridership indicates that for the majority of passengers who ride the bus system, waiting for a late bus is a common occurrence. (See Section 3.1.3 Current Routes Served and Ridership Data for further details).

Suffolk County Transit anticipates installing GPS technology which will track its fleet in real time by early 2015. This enhancement to the transit system will provide real-time tracking and reporting on system-wide bus routes and is anticipated to improve the timeliness and effectiveness of the entire transit program by providing actual vehicle locations and arrival times. These improvements are expected to enhance the rider experience and, in turn, serve to increase ridership and reduce operational costs of the system.

3.1.3. CURRENT ROUTES SERVED AND RIDERSHIP DATA

Six bus routes account for over half of all ridership in the County. These include routes S1, S40, S45, S54, S66, and S92. With the exception of the S66, these routes have experienced ridership decline. Beyond this trend there are more differences than similarities between these routes



These six high-use routes are geographically dispersed and operate in townships with both high and low population density. Two routes strongly parallel rail service while others do not. It is interesting to note that five of these routes provide continuous bus service from Babylon to the east end of the County, predominantly on the south shore. Defining characteristics of the six major bus routes are as follows:

Route S1 – With a ridership of 639,451 in 2012, this is the most heavily used bus route in the County. S1 is a north-south route that runs along the western border of Suffolk County on Route 110 between Huntington and Amityville. It connects to the LIRR at Amityville and Huntington. Ridership is fairly consistent throughout the year. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 626,236 passengers (including Saturday passengers).

Based on 2007 data, this route is on time 76 percent of the time on weekdays and 80 percent on Saturdays.

Route S92 – This route services the east end of Suffolk County between Orient Point, Riverhead, and East Hampton. Strikingly, this route, while the second most used, operates in the towns with the lowest population density. S92 had a ridership of 417,906 in 2013. This route is also the longest bus route in the County and provides excellent connectivity to the LIRR. Connections can be made at Riverhead, and on the North Fork at Mattituck, Southold, and Greenport. On the South Fork, connections can be made at Hampton Bays, Southampton, Bridgehampton, and East Hampton. Summer ridership is approximately double winter ridership. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 417,906 passengers (including Saturday passengers).

Based on 2007 data, this route is on time 56 percent of the time on weekdays and 56 percent on Saturdays. New seven day service began on this route in January 2014.

Route S45 – A north-south route operating between Smithtown, Hauppauge and Bay Shore along Route 111, Suffolk Avenue, and Brentwood Road. This bus route connects to the LIRR at Bay Shore, Brentwood, Central Islip, and Smithtown. Ridership is fairly consistent throughout the year. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 363,711 passengers (including Saturday passengers).

Based on 2007 data, this route is on time 70 percent of the time on weekdays and 50 percent on Saturdays.

Route S40 – The S40 operates along the south shore from Babylon to Patchogue via Montauk Highway. This bus route connects to the LIRR in Bay Shore, Great River, Oakdale, Sayville, and Patchogue. Ridership is fairly consistent throughout the year. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 309,747 passengers (including Saturday passengers).

Based on 2007 data, this route is on time 77 percent of the time on weekdays and 54 percent on Saturdays. New seven day service began on this route in January 2014.

Route S54 – This is a north-south route operating between Hauppauge and Patchogue along Veterans Memorial Highway. This bus route connects to the LIRR in Patchogue. Ridership is fairly consistent throughout the year. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 305,574 passengers (including Saturday passengers).

Based on 2007 data, this route is on time 64 percent of the time on weekdays and 83 percent on Saturdays. New seven day service began on this route in January 2014.

Route S66 – The S66 operates along the south shore from Patchogue to East Moriches and then travels northeast to Riverhead via Riverhead-Moriches Road. This bus route connects to the LIRR in Patchogue, Bellport, and Mastic Shirley. Ridership is fairly consistent throughout the year. Based on 2007 data, this route is on time 54 percent of the time on weekdays and 57 percent on Saturdays. New seven day service began on this route in January 2014. The most recently available Suffolk County Transit 2013 data shows annual ridership for this route of 287,113 passengers (including Saturday passengers).

Exceptions to ridership decline include five routes—the S29, S58, S61, S66, and S71—that have experienced modest ridership gains, for the most part bringing them back to 2008 levels. With the exception of Route S66, these are all routes with moderate to low ridership. North-south routes that have experienced increases include Route S29, S61, and S71. Route S29 provides service between the Walt Whitman Mall and Babylon. Route S61 provides service between Port Jefferson and Patchogue. Route S71 provides service between Stony Brook, Farmingdale, and Mastic. In the east/west direction, there has been an increase in ridership for the S58 and S66 routes, both of which provide service to Riverhead. Examination of more recent data (2011-2013), shows that there are five additional exceptions to the general trend of ridership decline on the Suffolk County Transit system on the following routes—S23, S31, S41, S71, and S94—which have experienced ridership gains since 2011. North-south routes that have experienced increases include Route S23, S31, S41, and S71. The only east-west route that has experienced an increase is Route S94. Route S23 provides service from the Babylon LIRR station, through Wyandanch, and to the Walt Whitman Mall. Route S31 provides service from Merrick Road in Copiague to Melville and ending at the Five Corners in Wyandanch. Route S41 provides service from Bay Shore to the Northport VA Medical Center. Route S94 provides service from Montauk Hamlet to Montauk Point Lighthouse only during July and August.

3.1.4. CURRENT STATE OF EXISTING INFRASTRUCTURE AND FACILITIES

Suffolk County installed uniform bus system signage in 2007; indicating bus stop locations was a huge step forward for the system. Many bus stops do not have shelters but progress is being made in this regard as funding is available. Some towns have contracted with private companies to build and maintain shelters. To date, display advertisements have been successful in generating public revenue (for certain towns) on a limited basis. Suffolk County is planning on partnering with the Town of Brookhaven later in 2014 on a 50/50 revenue sharing program for display advertisements on Suffolk County owned roads.

3.1.5. NEEDS AND DEFICIENCIES

3.1.5.1. *Gaps in Routes and Shifting Demands*

Ridecheck Survey Data from 2008 documents bus stop usage for the Suffolk County Bus System. The bus stops with both the greatest weekday and Saturday usage included Smith Haven Mall, Babylon Railroad Station, Walt Whitman Mall, Brentwood Road, and South Shore Mall. In most cases, bus routes with the highest ridership have bus stops with the most usage. It is interesting to note, however, that the destination with the greatest usage, the Smith Haven Mall, is not serviced by any of the high ridership routes discussed above.

A recent BRT Feasibility Study, prepared for Suffolk County and completed in May 2014, has examined the potential for a BRT system in Suffolk County. A BRT system uses buses in dedicated lanes to quickly move passengers to destinations. The Study has determined that “BRT is well suited to connect Suffolk County’s educational, commercial, residential, recreational and transportation assets...”. Three preferred corridors were determined to be viable:

1. The NY Route 110 (Amityville-Huntington) corridor
2. The Sagtikos Parkway (Deer Park-Kings Park) corridor
3. The County Road 97/Nicolls Road (Patchogue-Stony Brook) corridor

The BRT Feasibility Study also outlines next steps for implementation through federal matching funds, available for BRT planning, design and construction.

3.1.5.2. *Level of Service Issues*

A 2008 report, the “Comprehensive Bus Route Analysis and Service Development for Suffolk County Transit Public Bus System” prepared for the Department of Public Works Transportation Division, was reviewed and a series of service proposals were put forth to address service issues. Highlights of these service proposals include:

- No change to the frequency of service.
- Increasing the span of service through extended evening scheduling along select bus routes.
- Providing Sunday service along the following bus routes—S1, S33, S40, S41, S54, S58, S66, S92, 10C, and 3D, as well as SCAT (Suffolk County Accessible Transportation Services).
- Improvement to transit facilities at hub locations, such as passenger waiting shelters.

3.1.5.3. *Intermodal Connectivity*

Bus / Rail Connections

There is good connectivity between bus and rail service in the County and almost all LIRR stations have at least one bus connection. Many stations have two or more bus route options. Railroad Stations with four or more bus route connections include Ronkonkoma, Babylon, Brentwood, Patchogue, Bay Shore, Port Jefferson, Mastic-Shirley, and Riverhead.

Two exceptions to the overall good bus-rail connectivity are Huntington Station and Cold Spring Harbor Station. Huntington Station is estimated to be the second-most heavily used LIRR station in Suffolk County, but has limited bus route options. The station is serviced by one County bus route—the S1—and one HART bus route—the H9. Cold Spring Harbor Station has neither County nor HART bus connections and is also one of the more heavily used LIRR stations in the County. Although close to the County border, this station also does not have Nassau County Inter-County Express (NICE) bus service.

While the framework for good bus and rail connectivity is in place, the actual use of intermodal systems for travel is more nuanced. Well used bus routes connect to heavily used railroad stations in some cases but not in others, implying that there is a substantial degree of bus travel independent of rail travel.

Babylon, Central Islip, Amityville, Brentwood, and Patchogue are all busy railroad stations that connect to heavily used bus routes. It is likely that there are transfers between bus and rail occurring at these locations.

At the other end of the spectrum, Ronkonkoma, the most heavily used station based on a 2006 LIRR survey, is not serviced by any of the five most heavily used bus routes. Deer Park, Lindenhurst, Wyandanch, and Northport are also heavily used railroad stations without corresponding high bus use. People are most likely driving to these stations.

Bus / Ferry Connections

Monthly passenger statistics for the numerous bus routes along the south shore are fairly consistent year round, pointing to no correlation between seasonal ferry operations and bus use. Ridership was reviewed for the S20, S23, S27, S29, S40, S42, S54, S57, S59, S63, S61, and S66 bus routes. The S69 services the Port Jefferson Ferry Dock. Ferry service is year round for both vehicles and passengers traveling to Bridgeport, CT. In 2012 this route had the least ridership within the bus system and intermodal connectivity is likely to be minimal.

The S92 services the Orient Point Ferry Dock. Ferry service is year round for both vehicles and passengers. At the terminal in New London, CT, passengers can connect to the new Multi-Modal Transportation Center for Amtrak and local commuter rail service. The S92 is the second most used route in the bus system with 417,977 passengers. With both passenger volume and excellent intermodal connectivity in Connecticut it is probable that some commuters choose to travel to the dock via bus.

Bus / Airport Connections

Republic Airport is not serviced by Suffolk County Transit. The NICE N70 bus stops over a mile away from Republic Airport at Conklin Street. Macarthur Airport is accessible via the S57 bus with hourly bus service Monday through Saturday. The airport is also serviced by two private bus companies, 7 Bus and Hampton Jitney.

Frances Gabreski Airport is accessible via the S90 bus with extremely limited service. The bus schedule indicates one morning bus westbound from Riverhead and one afternoon bus eastbound to Riverhead, Monday through Saturday.

3.2. PASSENGER RAIL SERVICE – LONG ISLAND RAIL ROAD

3.2.1. OVERVIEW

The LIRR still forms the basis for growth in the Suffolk County region, and indeed it was the presence of these stops in the first half of the 20th century that catalyzed the development of its collection of mixed-use town and village centers. The LIRR is the busiest commuter railroad system in North America, carrying an average of 287,000 passengers each weekday on 741 daily trains. Chartered on April 24, 1834, it is also the oldest railroad still operating under its original name. The LIRR is managed by the New York Metropolitan Transportation Authority (MTA), and served over 81.7 million customers in 2012. There are presently 41 LIRR stations located in Suffolk County.

3.2.2. THE LIRR'S ROLE IN SUFFOLK COUNTY'S ECONOMY

The following statistics outlined in the 2013 Long Island Index Special Analysis—*How the Long Island Rail Road Could Shape the Next Economy* demonstrate the critical role that the LIRR serves in supporting the economy of Suffolk County: One out of every four dollars of income earned by Long Island residents is brought home from jobs in New York City. In 2011, this constituted 14 percent of income earned by Suffolk residents. More than 11 percent of employed Suffolk County residents commute to New York City for work, and a third of them take the LIRR.

Over the last 30 years, the LIRR has focused on system improvements, new train cars, and repairs to tracks, stations, and rail yards. Yet despite the growth and significant changes in Suffolk County's economy, the reach and capacity of the LIRR remains what it was when the system was originally established in 1910. Unlike the other commuter rail systems in the New York Metropolitan region that have had increased ridership as a result of new service, the LIRR ridership has remained relatively stagnant. From 1990 to 2011, ridership on Metro-North increased by 42 percent, and NJ Transit ridership increased by 84 percent. In comparison, LIRR ridership increased by 12 percent. Twenty years ago, the LIRR had the largest ridership of the three commuter rail systems. As of 2013, both Metro-North and NJ Transit ridership volumes have increased to match the ridership of the LIRR.

Historically, the LIRR has been at the core of a rail-oriented transportation network which connected growing Long Island communities to jobs. Over 100 years ago, an 18-mile electric trolley line, the Cross Island Trolley (operating in what is now Route 110) provided a north-south connection for Suffolk County residents. Just as it did then, new housing and business follows the introduction of improved transportation access.

Improved rail access continues to be an impetus for economic growth; promoting sustainable growth principles.

3.2.3. RIDERSHIP DATA

In the era before Long Island residents' main transportation mode was their privately owned vehicle, LIRR ridership reached record highs in 1949. More recently, ridership declined significantly following the recession of 2008. Significant service cut backs were enacted, including reductions in scheduled service along several branches from half-hourly service to hourly service.

As indicated by LIRR management, 2006 represents the most reliable ridership data currently available. Updated statistics are scheduled for distribution in the third quarter of 2014.

The following data from MTA's website provide a comparison of the LIRR's previous Origin and Destination study performed in 1998. Total ridership on the LIRR—eastbound and westbound combined—increased by 7.8 percent from 267,182 customers in 1998 to 288,078 in 2006. Some of the key findings from the study are:

- Westbound midday, off-peak ridership increased 72 percent, by 14,157 customers, in 2006—representing the LIRR's fastest growing market segment. At this time of day, the LIRR experienced a 10 percent growth—an increase of 6,000 customers—in travel that is recreational or social in nature.

- Total Morning Reverse Peak ridership increased 76 percent to 12,917 riders in 2006 (based on arrivals at destination stations) compared with 7,350 customers in 1998. The LIRR's Main Line Corridor Improvement Project—with the planned addition of a third track between Floral Park and Hicksville—is designed, in part, to meet the steadily growing demands of reverse peak ridership.
- Ridership increased on all diesel territory branches during the Morning Peak period representing a reversal from the 1998 Origin and Destination study's findings. This shift is closely tied to the replacement of the LIRR's diesel fleet with modern, comfortable bi-level coaches and the introduction of one-seat rides from diesel stations through dual-mode locomotive technology

Drawing from the 2006 Origins and Destination Survey, **Table A-3** highlights the stations with the busiest weekday passenger counts:

**TABLE A-3
HIGH-VOLUME LIRR STATIONS IN SUFFOLK COUNTY**

LIRR STATION	WEEKDAY PASSENGER VOLUME
Ronkonkoma	17,278
Huntington	11,113
Babylon	6,586
Deer Park	5,417
Cold Spring Harbor	4,166
Lindenhurst	3,583
Central Islip	3,574
Wyandanch	3,517
Amityville	3,085
Brentwood	2,750
Copaigue	2,661
Northport	2,593
Patchogue	2,327
Kings Park	1,876
Port Jefferson	1,793
Bay Shore	1,622
Smithtown	1,608
Stony Brook	1,448
Greenlawn	1,100
Sayville	1,086
Source: http://thelirrtoday.blogspot.com/p/2006-origin-destination-survey.html	

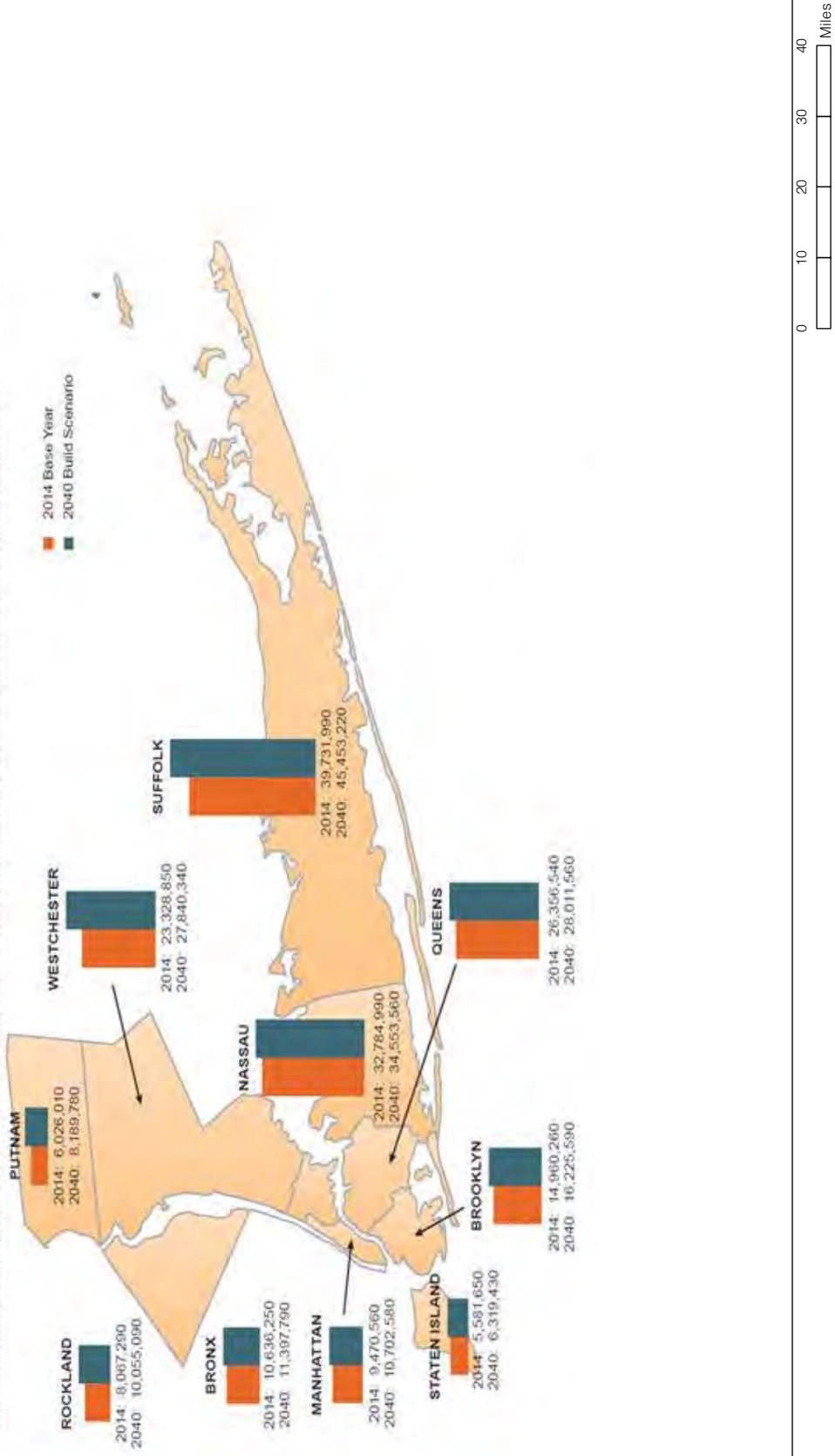
3.2.4. ISSUES TO BE ADDRESSED

Significant improvements to LIRR service are needed to address the following issues:

- Critical need to reduce highway traffic congestion
 - Identify potential for improved LIRR service to provide acceptable alternatives for Suffolk County residents to reduce reliance on private automobiles and therefore reduce congestion on highways.
- Addressing the issue of a lack of north-south corridors throughout Suffolk County and the issues that it creates for Suffolk County residents.
- Addressing the lack of Connectivity between the three branches of the LIRR
- Changes in the economy and economic base of Suffolk County (for example, Long Island's greatly diminished defense-oriented manufacturing base),
- Changes in work travel patterns including
 - Reverse commute from Manhattan
 - Commute within Long Island
 - How best to provide alternate mass transit modes for Suffolk County residents to provide access to major institutions land/or major employers like Stony Brook University, Brookhaven Laboratories, and new developments like Heartland at the Pilgrim State site, as well as the new Cannon Headquarters?
- Changing demographics including an increasingly larger percentage of the population aged 65 or over
- Changing residential and commercial development trends
- Improving transportation alternatives to encourage future development
 - What improvements can be made to rail infrastructure intermodal connectivity to support and encourage additional sustainable development in Suffolk County?
 - What improvements can be made or what issues need to be addressed in LIRR service to promote the revitalization of downtowns?
 - What improvements can be made to the transportation infrastructure to promote development of TOD's?
- Changing ridership patterns that have occurred over the past 40 years.

As illustrated in **Figure A-2**, by 2040 Suffolk County residents are projected to travel nearly 11 million more miles than residents of Nassau County.

Figure 5: NYMTC Planning Area Daily Vehicle Miles Traveled by County. Note: 2040 Build Scenario – scenario where the impacts of future (2040) socio-economic & demographic forecasts and fiscally-constrained transportation projects are considered in the modeling process.



3.3. LIRR FREIGHT

The LIRR system plays a critical role in the viability and economic success of freight operations into and out of Suffolk County. In 1998, the LIRR contracted its freight franchise to New York & Atlantic Railway, now contracted to oversee freight operations for the next 20 years.

A discussion on Freight Facility Conditions and Deficiencies is included in Section 3.5 and includes information regarding the following:

- Changes in Freight Operations/Demands
 - Changing needs for material/supplies/goods
 - Increase in rail freight villages
- Reduction in Truck Traffic
 - Improvement in rail freight operations/capacity
 - Development of rail freight distribution centers

3.3.1. CURRENT TRANSIT INVESTMENTS BY MTA/LIRR

As discussed in the previous section, although the LIRR's reach and capacity has remained much as it was when it was first connected to Manhattan's Pennsylvania Station in 1910, the LIRR's current Capital Program now includes major improvements to provide new capacity on its network: East Side Access and Double Track. Each of these mega-construction programs will bring both immediate and long-term benefits to the residents of Suffolk County:

- East Side Access—providing direct access to Grand Central Terminal (GCT) and improving access to Manhattan's East Side, increasing peak-hour service, and reverse-commute service.

Numerous studies have been commissioned to identify the wide range of benefits which have been projected due to the introduction of LIRR service into GCT. These studies range from increased home values in areas adjacent to LIRR stations with improved access to GCT, as well as the impact of decreased travel time on Suffolk County residents' potential decisions to purchase larger homes by relocating further east, i.e. further out on Long Island.



(Note: At the present time, no additional LIRR capacity is proposed at the new Moynihan Station; additional capacity will be provided for Amtrak service and therefore, some additional capacity will be available at Penn Station.)

LIRR Management indicated that there has not been adequate public outreach to Suffolk County residents to educate them about the potential positive impacts of the East Side Access program on their particular communities. On a larger scale, each Long Island town can assess the wide ranging benefits to their residents, the impact on their local economies, and development patterns. Issues to be analyzed might include:

- How can each town maximize the benefits of the improved service provided by East Side Access? In what ways can this improved access improve their local economies? In what ways would commuting patterns change?
- Double Track: Work has already begun on the LIRR's plan for second electrified track for the 18 miles between Farmingdale and Ronkonkoma to reduce overcrowding, enable reverse commuting, support mixed-use developments on Main Line. Construction is scheduled to begin by 2014 and to be completed in 2018 (Phase 1 and 2: \$137.2M).

The Ronkonkoma Double Track program includes plans to build a new LIRR Republic Station (East Farmingdale). Republic Airport Station was closed in the late 1980's due to the decrease in usage by Fairchild Republic employees. The proposed reopening of the station could potentially support smart growth development in the areas immediately adjacent to the station. BRT connectors to be provided in the future would serve the entire Route 110 Corridor. Double track service would help encourage housing, and commercial/retail development. The LIRR proposal includes the creation of a hub station, which would include the construction of structured parking.

3.3.2. DOUBLE TRACK PROGRAM

The Main Line corridor was electrified in 1987. The increased use of electric service brings with it the potential for more frequent service into Manhattan. With inter-island traffic—more trains will be in the system; and therefore the number of trains going into Manhattan increases.

First year ridership on the Main Line electrified system exceeded all forecasts and the following years brought changes in both settlement patterns and land use in the surrounding areas. Stations were relocated out of the established downtown areas in order to provide adequate surface parking. These new train station locations have created the potential for the development of a new downtown; providing opportunities for the development of transit-oriented developments in

easy walking distance to improved rail access. Expanded parking facilities have been added all along the corridor to meet the rise in ridership.

Ronkonkoma is the largest line station in the system; utilized by passengers from both the North and South Shores due to the frequency and speed of service into New York City. The Ronkonkoma Station had originally been planned to have two tracks but funding issues limited the construction to a single electrified track.

3.3.3. ANTICIPATED SERVICE IMPROVEMENTS DUE TO DOUBLE TRACK

The Ronkonkoma Branch of the Main Line Corridor extends nearly 70 miles from Hicksville to Greenport; however, only the 5 miles between Hicksville and Farmingdale are provided with a double-track service. Service reliability will increase significantly with the introduction of double track service. Both east and west bound service will be provided at half hour intervals. Provision of double-track service will also improve connectivity; a very important issue to LIRR customers.

3.3.3.1. *Route 110 Corridor Re: Impact of Double Track*

Current statistics indicate that approximately 20 percent of the population of Suffolk County works along the 110 Corridor. The improvements associated with Double Track will have significant impact; with forecasts that predict that ridership will increase by 17 percent. To address this projected increase in ridership, the LIRR is exploring additional parking opportunities. Real time information regarding parking availability will be provided online. Ideas including jitney service and ridesharing are being explored to provide access to remote parking facilities.

3.3.3.2. *Improved Access to MacArthur Airport*

The LIRR has determined that the 30-minute interval in scheduled train service is the ‘tipping point’ in a passenger’s decision to use mass transit rather than private cars. More frequent rail connection to the airport can provide greater convenience for travelers, and provide an alternative means of access to this currently underutilized facility. This level of rail service might also provide an added incentive for low-cost air carriers to consider providing service from Long Island’s only commercial aviation facility.

3.3.3.3. *Double Track Resiliency Impact*

The Main Line was the first LIRR line opened after Super Storm Sandy. As this train line is not located in a flood zone, it opened nearly one week before any of the other lines were back in service. Restored train service was further delayed along the South Shore due to LIPA power lines downed by the storm. Based on these experiences, the LIRR is re-examining design criteria in light of lessons learned from the most recent super storms. LIRR should have sufficient

capacity in its redundancy built into its operational systems, such as diesels—diesels are not dependent upon third rail continuous electric power, and can run when electric power is out.

At the present time, the LIRR has not planned any additional special resiliency efforts for Suffolk County. Instead, its energy is more focused on the west end of Long Island.

In addition, LIRR should have redundancy in terms of cargo capacity hauled by diesel. New York Atlantic provides quick response because they used large diesel engines, not electric engines. It is interesting to note that New York & Atlantic Railway received significant recognition and awards for their quick response and ability to operate after Super Storm Sandy. Unlike surface transportation throughout Long Island, this freight rail operation demonstrated the importance of rail in providing critical supplies to the residents of both Nassau and Suffolk Counties.

3.3.4. ADDITIONAL LIRR CAPITAL IMPROVEMENTS TO BE LOCATED IN SUFFOLK COUNTY

Additional improvements identified in the latest LIRR Capital Program located in Suffolk County include the following:

- Main Line Parking Facility development
- Mid Suffolk Storage Yard (\$76.6M)

Huntington is the only branch of the LIRR which does not have a dedicated train yard (the Huntington to Smithtown zone). To date, the LIRR's efforts to identify an appropriate site for this facility have met with strong community opposition in numerous Suffolk towns. The site currently being developed as the Avalon Bay Transit Oriented Development now occupies the site which had been considered by the LIRR for use as a linear rail yard.

Funding for a mid-Suffolk County yard location has already been included in the LIRR Capital Program. Studies are currently underway to identify appropriate locations for such a yard, including sites in Ronkonkoma as well as along the South Shore. In 2013, LIRR issued a "Request for Proposals" for the design of the Ronkonkoma yard, which would result in an expansion, improvements and reconfigurations that would approximately double its size.

3.3.5. LOOKING TO THE FUTURE OF POST EAST SIDE ACCESS ERA

Prior to the electrification of the Main Line, the LIRR had analyzed and compared the costs and benefits of electrification of the tracks to Port Jefferson as well as along the Main Line to Ronkonkoma. It was determined that electrification of the tracks to Port Jefferson would not significantly reduce travel time because of the existing hilly and curvy terrain along this corridor. The Main Line to Ronkonkoma was selected for electrification, and included the following features:

- Proposed to utilize dual mode locomotives, which can operate in either diesel or electric service depending upon the territory.
- Single-seat ride to Penn Station; can go directly into Penn Station
- Bi-level trains; very comfortable coaches

There are two significant drawbacks to this program:

- The sole supplier of this type of hybrid train system has gone out of business.
- The height of these hybrid cars prevents them from entering Grand Central Terminal because of the limited vertical clearance at the 63rd Street Tunnel.

LIRR passengers can take a hybrid train at Huntington to travel via electric train service to either Grand Central Station or Penn Station. The LIRR is looking to encourage its customers to transfer in stations east of Jamaica Station.

3.3.6. LIRR IMPROVEMENTS ENCOURAGING TRANSIT ORIENTED DEVELOPMENT

3.3.6.1. *Wyandanch Rising*

Wyandanch Rising, a TOD centered on its LIRR station, is already under construction. The provision of adequate parking continues to be the critical planning issue for the LIRR. Due to a lack of viable alternate modes of transportation, LIRR users require adequate parking facilities in and around their local train stations. The development of Wyandanch Rising required land swap between the Town of Babylon and the LIRR in order to provide adequate area for parking adjacent to the station. This is an excellent example of the important synergy between the LIRR and the town working together to address the best interests of their constituencies. TODs continue to be developed along the Main Line corridor.

3.3.6.2. *Ronkonkoma Hub*

As described on the Town of Brookhaven's website, "The Ronkonkoma Hub plan has been prepared to facilitate the redevelopment of the Ronkonkoma Hub area as a Transit-Oriented Development (TOD) area featuring a mix of higher-density residential development, commercial, hospitality, institutional, office, and retail uses, conference, entertainment and exhibition venues, and public-designated outdoor spaces. The development is designed to both complement and benefit from the presence of the Ronkonkoma LIRR Station and its associated commuter passenger volumes."

A revised supplemental EIS has been submitted for this proposed development. There are property challenges involving land swaps with townships on either side of the proposed development.

3.3.6.3. *Deer Park / Heartland Development*

The proposed Heartland Development, a \$4 billion mixed-use plan, to be located on the former Pilgrim State Institution site in Brentwood. Heartland will result in Long Island's first "smart growth" community including 9,300 housing rental units, a million square foot "life-style" center, 3 million square feet of office space, a state-of-the-art hotel and convention center, indoor and outdoor civic space, and an aquarium. A shuttle service has been proposed to provide residents with an alternate means of transportation to and from the nearby train station.

A previous proposal for a large-scale freight facility at the same site was not successful due to community concerns regarding the traffic and noise associated with freight facilities.

3.3.7. *LOOKING TO THE FUTURE / BEYOND THE CAPITAL PROGRAM*

The following represents several of the planning issues the LIRR is currently investigating:

3.3.7.1. *Addressing the Needs of East End Second Home Owners*

Historically, LIRR Service to the Hamptons and the North Fork has been extremely limited during high season, and is all but non-existent off-season. The LIRR has been investigating various initiatives designed to improve frequency of service during the summer months, as well as providing rail access for an increasing number of second home owners who are commuting to and from the East End throughout the year. One initiative under consideration by LIRR is the development of "scoot" train service along the North and South Fork branch lines to provide more frequent service to these areas at a lower cost than the regular, larger LIRR trains.

Earlier this year, seasonal 'Cannonball' service was instituted from Penn Station to the Hamptons. Service to Greenport (formerly only seasonal service) was also extended through Thanksgiving.

3.3.7.2. *Improving service on the Main Line Corridor:*

- Identifying the potential demand for electrification in the communities around Yaphank and further east
- Identifying the requirement and cost benefit of extending double tracking

3.3.8. *POTENTIAL SMALLER-SCALE IMPROVEMENTS AT LIRR STATIONS WHICH WOULD ENCOURAGE ALTERNATIVE TRANSPORTATION TO STATIONS*

3.3.8.1. *Encouraging Bicycle Usage*

- Bike Storage at LIRR stations—Best in places where safe bike routes have already been provided. The LIRR has provided lockers at certain stations but this has been determined

to be too difficult to administer, and maintenance issues have discouraged use by LIRR passengers.

3.3.8.2. *Encouraging Use of Alternative fuel vehicles*

- Electric Charging stations in LIRR parking lots—It is significant to note that the LIRR only owns and operates 5 percent of the station parking facilities. The provision of electric charging stations to encourage electric car usage would require a collaborative effort with the individual towns.

3.3.8.3. *Encouraging Use of Off-Site Parking*

Safety would be improved by providing enhanced pedestrian access to remote parking facilities (i.e., safe sidewalks with better lighting). These upgrades would encourage the use of parking areas within walking distance of LIRR stations.

3.3.8.4. *Encouraging Alternative Energy Sources at LIRR facilities*

- Suffolk County has a pilot business venture program with a solar panel manufacturer for installation in LIRR parking lots.

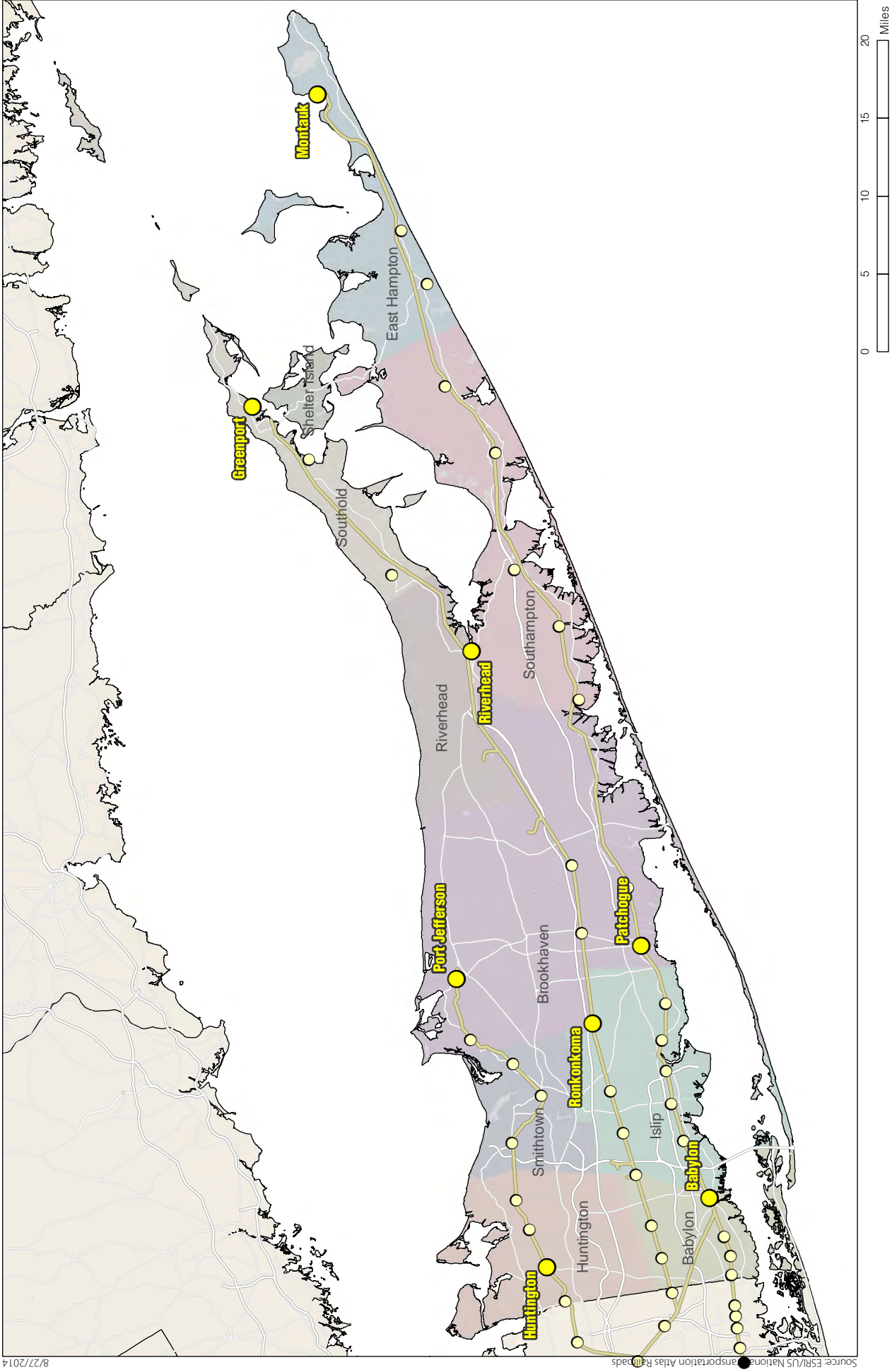
3.3.8.5. *Encourage Park and Ride Facilities at LIRR Stations*

- Providing Park and Ride facilities and 'Zip Car' type arrangements at or near LIRR stations would promote a car-free Suffolk County resident/tourist mode shift for users going to and from mass transit facilities.

3.3.9. *CURRENT STATE OF EXISTING LIRR FACILITIES AND OPERATIONS*

The following section provides the inventory and analysis of select key LIRR stations along each of the three branch services to Suffolk County: the Port Jefferson Branch, the Main Line Branch, and the Montauk Branch.

The following criteria were identified in order to establish a representative sampling of stations, as well as to identify those stations where significant economic development is either already occurring or is in the planning stages. Eight LIRR stations were selected for analysis: Huntington, Port Jefferson, Ronkonkoma, Riverhead, Greenport, Babylon, Patchogue, and Montauk (see **Figure A-3** and **Table A-4**).



LIRR Stations Selected for In Depth Analysis
Figure A-3

TABLE A-4
EXISTING LIRR FACILITIES AND OPERATIONS

EVALUATION CRITERIA:	STATIONS:
North Shore Station	Huntington, Greenport, Port Jefferson
Main Line Station	Ronkonkoma, Riverhead, Greenport
South Shore Station	Babylon, Patchogue,
High Passenger Volumes	Huntington, Ronkonkoma
Proximity to high density towns	Huntington, Babylon
Terminal stations	Port Jefferson, Montauk, Greenport, Huntington, Babylon
Proximity to major educational institutions; recreational attractions	Montauk, Port Jefferson
Proximity to existing/ proposed major residential developments/ TOD	Port Jefferson, Patchogue, Ronkonkoma, Huntington
Proximity to County/state seats of government	Riverhead
Proximity to Airports/Ferry Terminals	Ronkonkoma, Patchogue, Port Jefferson, Montauk

3.3.9.1. *Inventory*

Site investigations were performed at each of the stations identified above. Data and findings were provided to document the following:

- General location
- LIRR train line
- Destination served
- Distance to closest downtown
- Station proper

Station Proper—Assessment of a State of Good Repair

- Passenger waiting area
- Platforms
- Canopy protection
- Accessibility

Vehicular Parking—Assessment of capacity, fee structure, levels of use, expansion potential

- Surface parking
- Structured parking
- Remote parking

Intermodal Connectivity—Site provisions for the following:

- Bus stops

- Taxi dispatch
- Bicycle storage
- Car rental
- Connections to ferry services
- Connections to airport services

Adjacent Neighborhood – Composition of Immediate Neighborhood

- Predominant land use
- Proximity to downtown area
- Proximity to undeveloped sites
- Proximity to new development

For each of the stations examined in detail, land use figures have been provided. The land use figures identify types of development using the following color overlays:

- Grey/Green – Residential Development
- Yellow – Commercial Development
- Red – Industrial, Manufacturing Development
- Blue – Rail Station and Associated Parking

3.4. STATION ANALYSES

3.4.1. PORT JEFFERSON BRANCH: HUNTINGTON STATION

3.4.1.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: New York Avenue and Broadway, Huntington Station, NY (see **Figure A-4**)
- Fare Zone: 9
- Ridership: 11,113 (2006)
- Service Levels: 19 eastbound trains - 40 west bound trains /day
- Station parking: 5,040 spaces

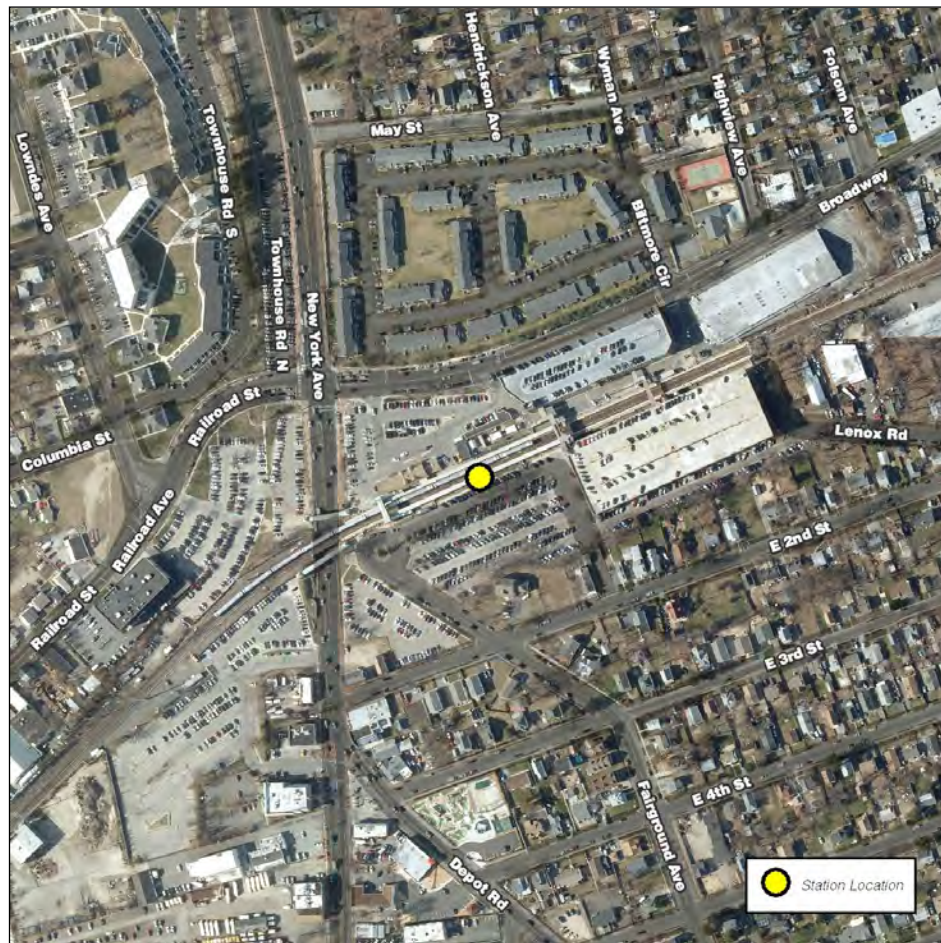


Figure A-4: Aerial View – Huntington Station

3.4.1.2. *Current State of Existing Infrastructure and Facilities*

Context

The neighborhoods north and south of the station are primarily residential. There is retail and commercial development along the north-south oriented New York Avenue (see **Figure A-5**). Some industrial development is found alongside the railroad right-of-way.

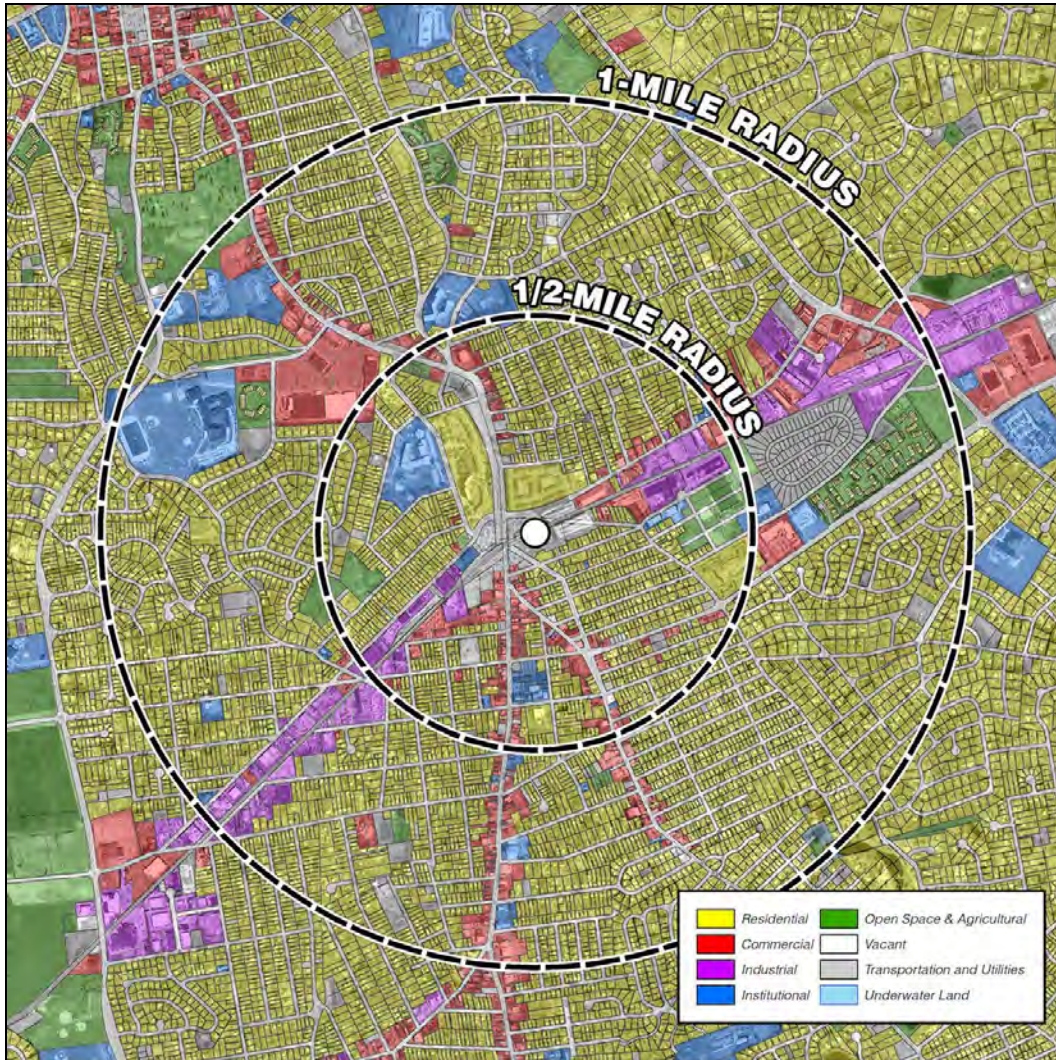


Figure A-5: Land Use and Catchment Area – Huntington Station

History

The Huntington Station on the Port Jefferson Branch of the LIRR opened in 1868. It is located 1.5 miles south of the Village of Huntington. The station served as the junction between the

LIRR and the Huntington-Amityville trolley until the 1920s. Huntington remains the eastern terminus to the electrified portion of the line.

The current station head house was built in 1909; at the same time the New York Avenue at-grade crossing was eliminated. In 1970, the Port Jefferson Branch was electrified and high level platforms added. The station remains a transfer point for passengers switching to diesel trains traveling east to Port Jefferson.

The first parking structure was added in the 1980s. The next decade saw additional improvements including a second parking garage north of the station, ADA accessible ramps, and pedestrian bridge crossovers over the tracks and New York Avenue.

Existing Conditions

The at-grade Huntington Station is served by a single head house north of the tracks that includes an indoor waiting area, concession, and a ticket office. The two side platforms have been raised and modified to accommodate electric and dual-level trains preventing it from being directly accessible from the indoor waiting area. ADA accessibility is provided via an exterior ramp accessed from the eastern portico of the head house. Accessibility to the



Source: www.portraitofalostneighborhood.org/huntsta-history.html

eastbound platform is achieved directly from a ramp adjacent to the south parking lot or alternately by using the elevators adjacent to and in conjunction with the pedestrian overpasses. The platforms are sheltered by half platform-length canopies.

Access to the head house and westbound platform is achieved from the north parking lot. A single bicycle rack is located between the station head house and the westbound platform; commuters currently secure their bikes onto an existing fence.

Surface parking is provided both adjacent to north side of the station proper and south of the tracks. Observed during morning peak, both lots are 100 percent full. There are two structured parking lots in the vicinity of the station, one north and one south of the tracks, each about 95 percent full. There is also remote surface parking, one north and one south of the site. Only the remote lot south of the station had available parking. All parking is metered or by permit.

3.4.1.3. *Intermodal Connectivity – Huntington Station*

Passengers change trains here for eastbound off-peak service to Port Jefferson. Connections are provided to the S1 and H9 buses across the north station parking lot where there is a shelter on New York Avenue (see **Figure A-6**). There is a taxi dispatch office east of the station head house and a bicycle rack is located adjacent to the station head house.

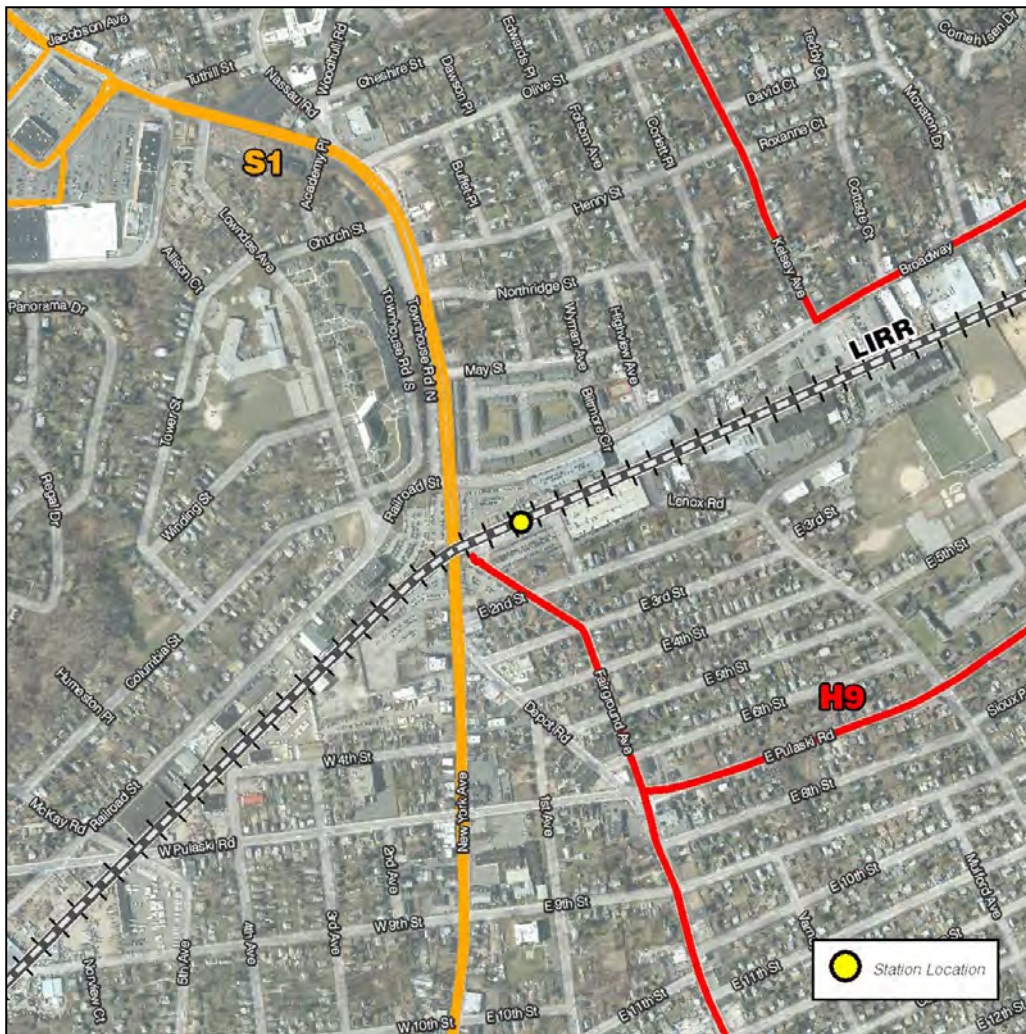


Figure A-6: Connectivity to Infrastructure—Huntington Station

3.4.1.4. Needs and Deficiencies – Huntington Station

**EXISTING CONDITIONS SURVEY—
HUNTINGTON STATION**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	2
Bicycle Racks	1	Proximity - Commercial	2
Bus Stops	1	Proximity - Downtown	1
Canopies	2	Proximity – Industrial	2
Connection - Airport	0	Proximity - Residential	3
Connection - Ferry	0	Structured Parking	3
Curb Frontage	0	Surface Parking	1
Drop-off Area	2	Taxi Stands	2
Head House	3	Waiting Area	2
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			



- Second-heaviest use station
- Access to a limited number of bus routes
- Bicycle racks fully utilized
- Structured parking is conveniently located though full by morning peak use
- Surface parking at 95 percent capacity during AM peak
- Station approximately 1.5 miles from downtown, i.e., not within walking distance
- Avalon Development TOD within station catchment area
- No vacant development sites are apparent within station catchment area

3.4.1.5. North-South Connections – Huntington Station

Huntington Train station is located on New York State Route 110, a heavily traveled north-south arterial on Long Island which runs roughly parallel to the border between Nassau and Suffolk Counties. It is served primarily by the S1 bus along the entire length to Amityville, but also partially by the S31 (see **Figure A-7**).

The corridor connects the Walt Whitman Mall, Melville Mall, Republic Airport, SUNY Farmingdale and the Amityville train station. A BRT or other rapid transit system, linked to development nodes throughout the Route 110 corridor and to the MTA-LIRR, will attract choice transit users and young professionals who have demonstrated a desire and preference for mass transit and less auto-dependent lifestyles.

3.4.1.6. Identified Improvement Proposals: Short Term and Long Term

Currently, improvements to the 110 roadway are being implemented between the Long Island Expressway and the Northern Parkway. The shortage of available parking at the station should be addressed by either providing additional parking lots or parking/structures.

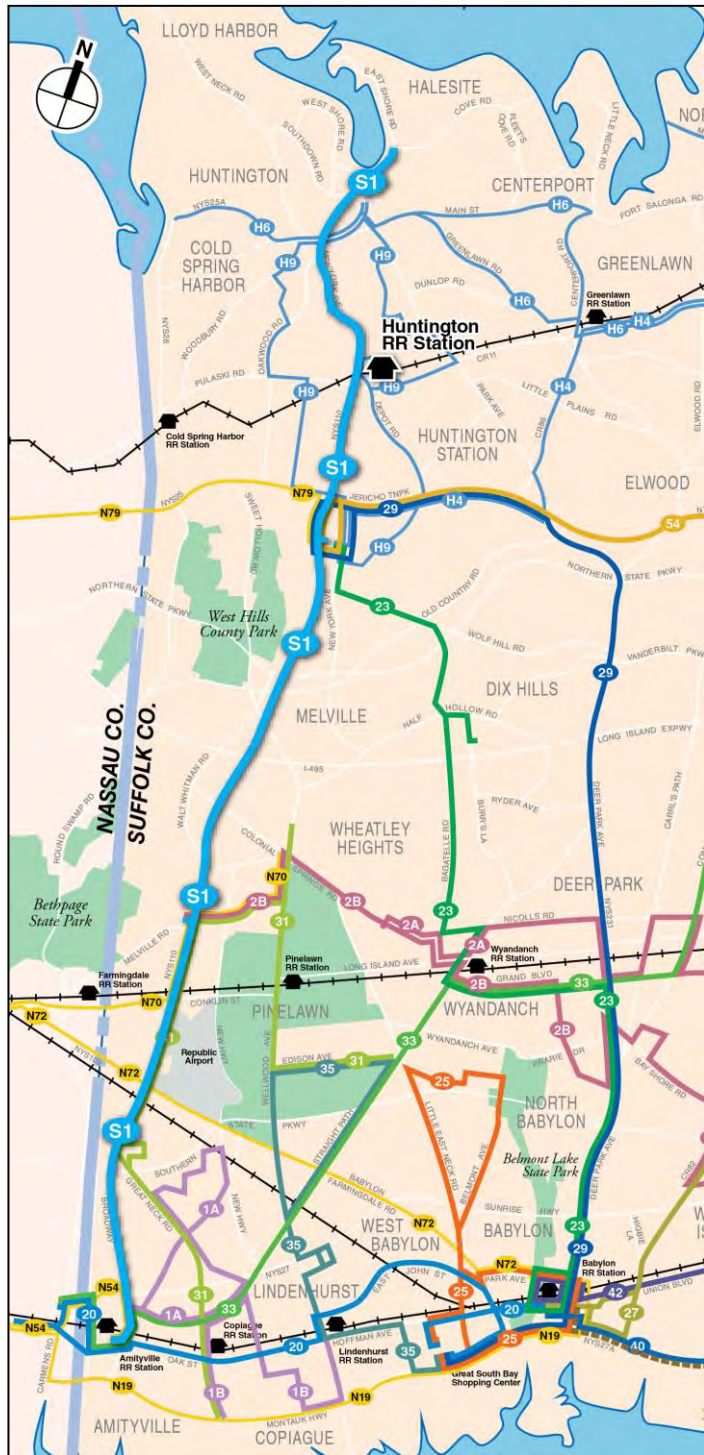


Figure A-7: North-South Connections – Huntington Station
 Source: Suffolk County Transit

3.4.1.7. *Summary Comments / Observations – Huntington Station*

As one of the busiest stations on the LIRR, the Huntington Station is a prime location for TOD assessment. Already underway is the Avalon Huntington Station development, and though quite developed with restrictions on available open lots, the community is well served and potentially viable for new development.

Looking at the station's catchment area helps to determine the viability of pedestrian access to the station limits from downtown areas and residential communities (see **Figure A-5**). These evaluations are made looking at a radius of ½-mile and 1-mile to determine whether residents will explore alternative means of reaching the station, be it on foot, on a bicycle, or other alternatives. The goal is to create an environment that is positive enough to induce residents to get to the station without relying on their private car.

Equally important is the role that a station can play in the economic viability of a community, as a driver for increased commercial/retail development, and/or as an impetus for additional residential development within its area of influence:

Zone of influence – ½-mile radius

The area scribed by the half-mile radius of Huntington station is predominantly residential (60 percent). The remaining area appears to be equally divided between retail/commercial and light-industrial use. There is an existing school that is located within this zone.

Zone of influence – 1-mile radius

The broader reach of the one-mile radius from the station encapsulates an even greater percentage of the residential community (80 percent). Though a large percentage of this community is within range of the station, walking distances become prohibitive for most. Alternative means, such as bicycles, come into consideration assuming that a safe and pleasant journey can be assured.

Economic destination centers within this region include: the Home Depot and Walgreen's (1 mile), the Walt Whitman Mall (2 miles), and the Melville Mall (4 miles), from the station. Most lie within the Route 110 corridor and are accessible, by bus, from the station limits.

Downtown

Downtown Huntington is approximately 2 miles from the Huntington Station. It remains a commercially viable and economically vibrant retail/commercial corridor. Little synergy appears to exist between Downtown and the train station, with each performing relatively successfully on their own.

3.4.2. PORT JEFFERSON BRANCH: PORT JEFFERSON STATION

3.4.2.1. Current Level of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: NY 112 (Main Street) and Oakland Avenue (see **Figure A-8**)
- Fare Zone: 10
- Ridership: 1,793 (2006)
- Service Levels: 19 westbound trains / day
- Station parking: 135 spaces



Figure A-8: Aerial View – Port Jefferson Station

3.4.2.2. *Current State of Existing Infrastructure and Facilities*

Context

The Port Jefferson Station is located approximately 1.5 miles from downtown. Main Street provides primary access between the station and downtown and is commercially developed (see **Figure A-9**). Single-family homes are located south of the station. A new townhouse development is located northeast of the site. A commercial office development and a hospital are located a few blocks to the north.

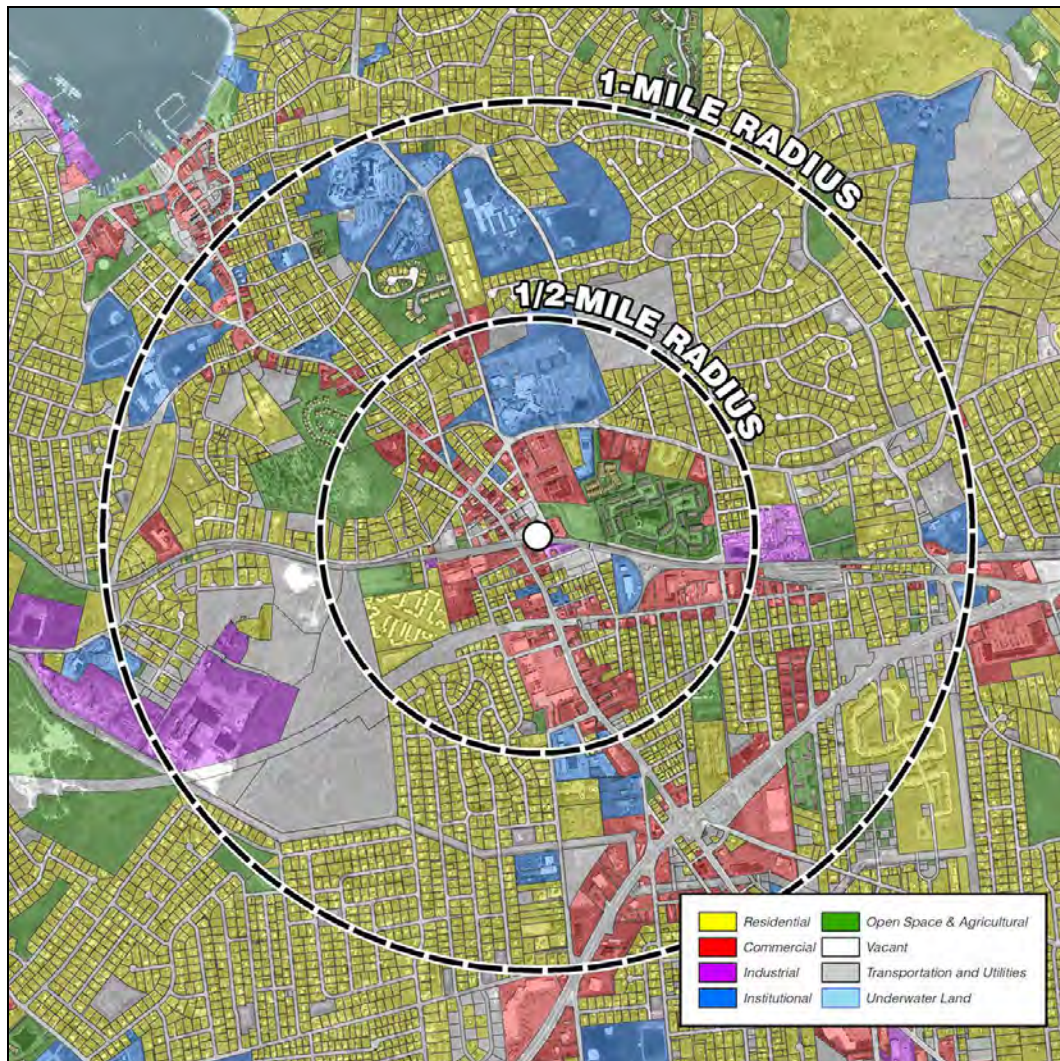


Figure A-9: Land Use and Catchment Area – Port Jefferson Station

History

The current Port Jefferson Station, which is the third, opened in 1903 and was designed by noted architect Stanford White. The station was remodeled in 1968 but restored to its original 1903 design in 2001.



Source: www.portjeff.com

Existing Conditions

The Port Jefferson Station is the terminus of the Port Jefferson Branch of the LIRR. Located on Route 25A, the station is composed of a restored head house that accommodates an agent-operated ticket booth, restrooms, and a waiting area. It is served by a single 10-car high-level platform to the north of the tracks. The remaining three tracks are used for train storage. All service is diesel-only and most off-peak trains are shuttles requiring a transfer to an electric train at Huntington, Hicksville, or Jamaica.



A pedestrian bridge to the east end of the platform provides connection with the parking areas to the station's south. This is the only free lot not requiring a resident or non-resident permit. During AM peak hours, this lot was observed to be 25 percent occupied, while the lot directly

adjacent to the tracks and head house to the north was at capacity. No structured parking was noted in the immediate vicinity of the station.

3.4.2.3. *Intermodal Connectivity – Port Jefferson Station*

The Port Jefferson Station provides connections to the Suffolk County Transit buses (see **Figure A-10**). Also accessible are Village of Port Jefferson’s own local jitney buses. Suffolk County Transit buses stop on Route 25A adjacent to the ferry parking lot, but no curbside bus shelter is available. The S61 Bus provides a link between the Port Jefferson LIRR Station and the Port Jefferson-Bridgeport ferry terminal, the harbor, and town center. The harbor is 1.5 miles to the north. No taxi dispatcher booth was seen, though dedicated spaces for taxis were noted. Bike racks are present and were fully utilized.

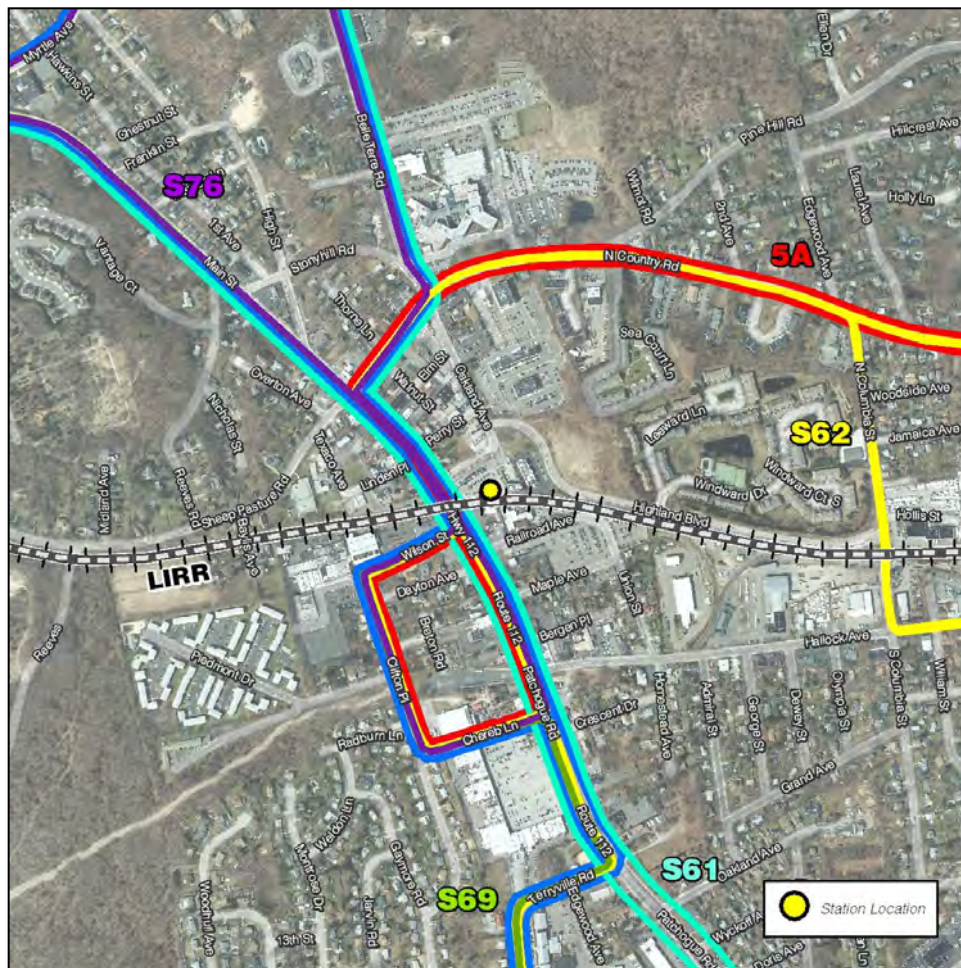
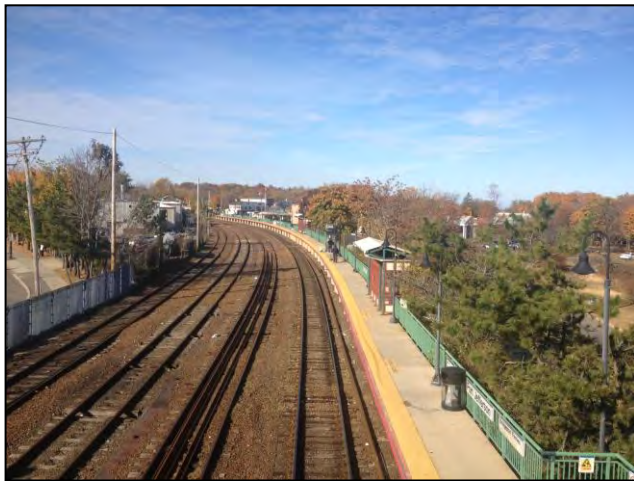


Figure A-10: Connectivity to Infrastructure – Port Jefferson Station

3.4.2.4. Needs and Deficiencies – Port Jefferson Station

**EXISTING CONDITIONS SURVEY—
PORT JEFFERSON STATION**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	1	Platforms	2
Bicycle Racks	1	Proximity - Commercial	3
Bus Stops	2	Proximity - Downtown	1
Canopies	1	Proximity – Industrial	2
Connection - Airport	0	Proximity - Residential	2
Connection - Ferry	1	Structured Parking	0
Curb Frontage	0	Surface Parking	2
Drop-off Area	1	Taxi Stands	1
Head House	3	Waiting Area	2
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			



- Access to numerous bus routes
- Suffolk County: 5A, S60, S61, S69 and S76
- Port Jefferson jitney buses
- S61 bus connection from Port Jefferson to Bridgeport Ferry Terminal
- Surface parking at 100 percent capacity at adjacent lot to station proper

- Surface parking south of station at 45 percent capacity (AM peak hours)
- Bicycle racks at full capacity
- Downtown within 1 mile of station
- Terminus to Port Jefferson Branch

3.4.2.5. North-South Connections – Port Jefferson Station

North-south connectivity from the Port Jefferson Station is achieved along Route 25A to the village center and along Route 112 south to Patchogue. Four bus routes connect the station with the Port Jefferson village center and the harbor (see **Figure A-11**). Three of those lines

continue to Stony Brook University (S60, S69, and S76). Two go south to Coram (S60 and S61) and one goes to Patchogue (S61). The S62 and S69 bus routes connect to the Smith Haven Mall. A proposed Nicolls Road BRT line would connect Stony Brook University with the Ronkonkoma Hub and the Village of Patchogue.

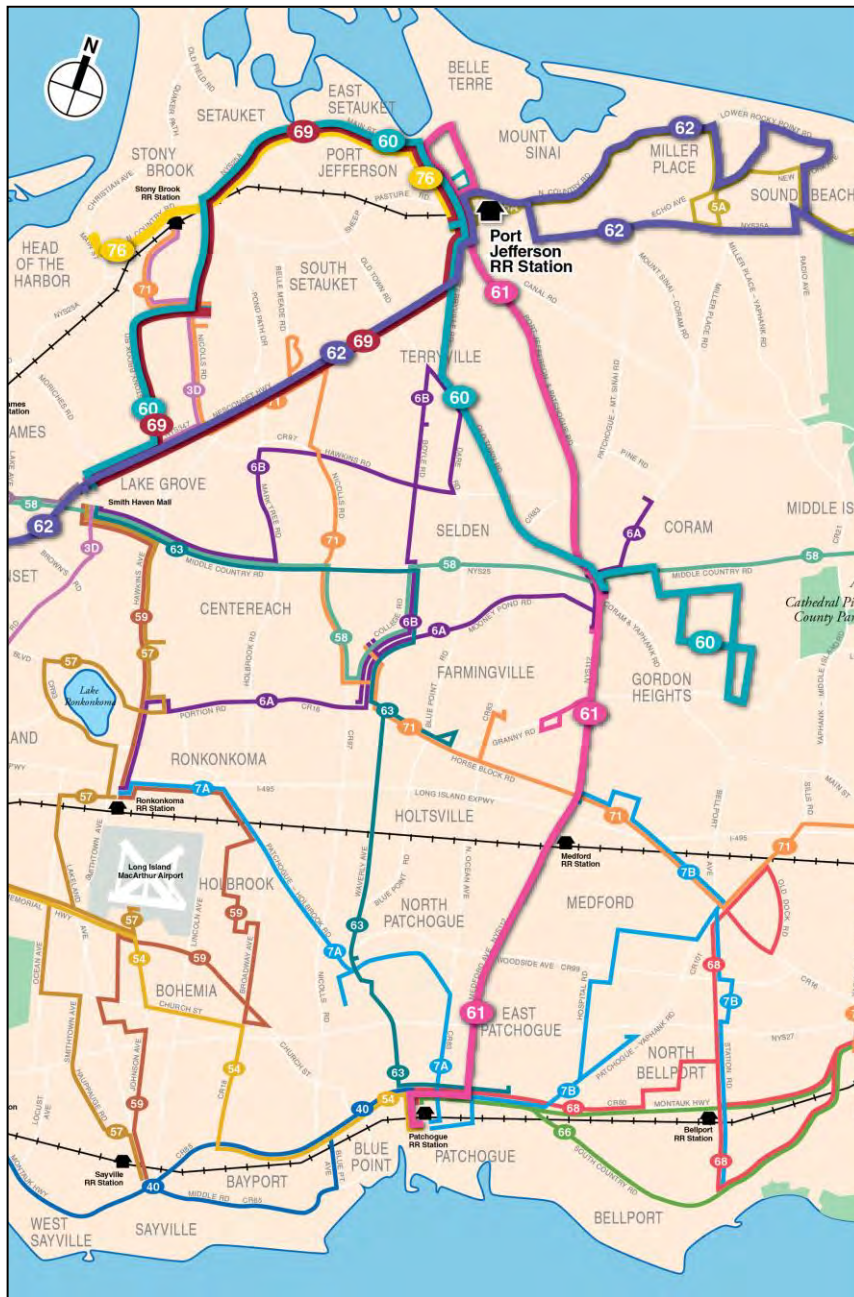


Figure A-11: North-South Connections – Port Jefferson Station

Source: Suffolk County Transit

3.4.2.6. *Identified Improvement Proposals: Short Term and Long Term*

A short-term enhancement to commuter use would be the provision of a bus shelter adjacent to the station on Route 25A. Additional bike racks at the station would also be an improvement. Long-term improvements could include a scheduled bus shuttle service to the Port Jefferson village harbor as well as the Ferry Terminal.

3.4.2.7. *Summary Comments / Observations – Port Jefferson Station*

Zone of influence – ½-mile radius

The Port Jefferson station is well-situated within this predominantly residential neighborhood. Within the ½-mile radius, 60 percent of the catchment area is defined by residential development (see **Figure A-9**). There are also current plans in place for TOD development. Noticable patches of green space define this inner ring composed of single-family homes and multi-level dwellings. Walking to the station is possible, given the numerous sidewalk options and the well-landscaped setting.

Commercial development represents about 30 percent of this area's use with industrial the remaining 10 percent. Office buildings and the J T Mather Hospital are also located within the ½-mile radius.

Zone of influence – 1-mile radius

The one-mile radius from the station defines an even greater residential community. Over 70 percent of its land use is dedicated to housing. Commercial and industrial developments represent the remaining and relatively evenly distributed land uses, which include the St. Charles Hospital. A significant parcel of land remains undeveloped.

Intermodal connections exist to downtown and the Ferry Terminal, about 1.25 miles from the station limits. Bus routes run along the Route 25A/112 corridor connecting these centers though their lack of frequent service is a deterrent to more regular use. Dedicated taxicabs park strategically at the station and add another layer of intermodal connectivity for the residents. Cycle paths could provide an additional mode of connection, given the proximity of these points of interest to one another.

There are no major malls within the vicinity of the station or downtown, allowing downtown Port Jefferson to remain a vibrant commercial district.

Downtown

Downtown Port Jefferson is just over a mile from the LIRR station facilitating synergy between these two destination centers. The LIRR station and the ferry terminal to the north of downtown are interconnected by Route 25A/112. There appears to be a healthy relationship between these transportation centers and the surrounding residential community.

3.4.3. RONKONKOMA BRANCH: RONKONKOMA STATION

3.4.3.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- New York Ave & Broadway, Huntington Station, NY (see **Figure A-12**)
- Fare Zone: 9
- Ridership: 17,278 (2006)
- Service Levels: 3 eastbound – 31 westbound trains/day
- Station parking: 6,100 spaces

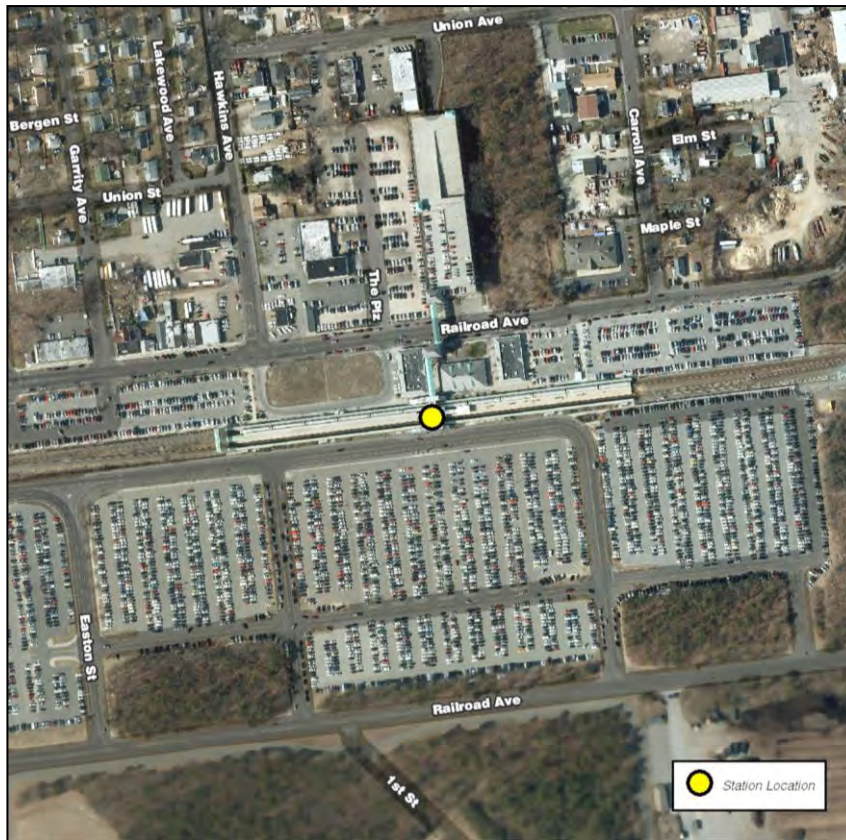


Figure A-12: Aerial View – Ronkonkoma Station

3.4.3.2. *Current State of Existing Infrastructure and Facilities*

Context

Predominantly single-family homes define the neighborhood north of the station (see **Figure A-13**). MacArthur Regional Airport lies to the south. Retail is located immediately north of the station. Large areas of open surface parking surround the station, and the village center of Lake Ronkonkoma lies approximately one mile north of the station. The station is 2 blocks from the LIE. The station is somewhat far from the commercial development in Ronkonkoma and the development south of MacArthur Airport.



Figure A-13: Land Use and Catchment Area – Ronkonkoma Station

History

Ronkonkoma Station was built in 1883 as a replacement for the circa 1843 Lakeland Station. It is on the Main Line/Greenport/Ronkonkoma Branch of the LIRR acting as the eastern terminus of the Ronkonkoma Branch and the western terminus of the Greenport Branch.

The line was electrified from Hicksville to Ronkonkoma in 1987. The current station facility, built in 1997, features a small, indoor waiting area with ticket agents and restrooms, retail, and a 1,000-car parking garage.



Source: www.trainsarefun.com/lirr/baggage/lirrbaggage.htm

Existing Conditions

The Ronkonkoma Station is presently the busiest station in Suffolk County. Rebuilt in 1987, the station has 3 high-level platforms accommodating 12-car trains, with the center island platform



used by passengers transferring for diesel train service to Greenport. Platforms are ADA accessible and connected by elevators to the cross-over bridges—one at the west end of the platform and the other at platform center. Free parking is available in the lots adjacent to the tracks to the north and south. A fee-based public parking structure exists to the north of the station.

3.4.3.3. *Intermodal Connectivity – Ronkonkoma Station*

Connecting buses use the loop roadway adjacent to the north side platform (see **Figure A-14**). The following bus routes use the station: S57, S59, 7A, and 6A. The S57 bus serves MacArthur Airport. The Airport can also be reached via the Colonial Shuttle bus, which stops adjacent to the parking garage.



Figure A-14: Connectivity to Infrastructure – Ronkonkoma Station

3.4.3.4. Needs and Deficiencies – Ronkonkoma Station

**EXISTING CONDITIONS SURVEY—
RONKONKOMA STATION**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	3
Bicycle Racks	2	Proximity - Commercial	1
Bus Stops	3	Proximity - Downtown	1
Canopies	3	Proximity – Industrial	0
Connection - Airport	3	Proximity - Residential	2
Connection - Ferry	0	Structured Parking	1
Curb Frontage	1	Surface Parking	1
Drop-off Area	3	Taxi Stands	3
Head House	3	Waiting Area	1
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			



- Busiest station in Suffolk County
- Not served by any of the five busiest bus routes
- Served by Suffolk County routes: S57, S59, 7A, and 6A
- Adjacent to MacArthur Airport
- Connection to Airport via Shuttle and S57 bus
- Airport terminal not well located for intermodal transfers with rail service

- Surface parking at 95 percent capacity during AM peak

3.4.3.5. North-South Connections – Ronkonkoma Station

The S57 bus connects the station to MacArthur Airport (see **Figure A-15**). Two bus routes—S57 and S59—continue south and connect to Sayville. The S54 bus route connects the station south to Bayport, and the S7A bus route connects the station to Patchogue. The S57 and S59 bus routes connect the Smith Haven Mall in Lake Grove to the north.

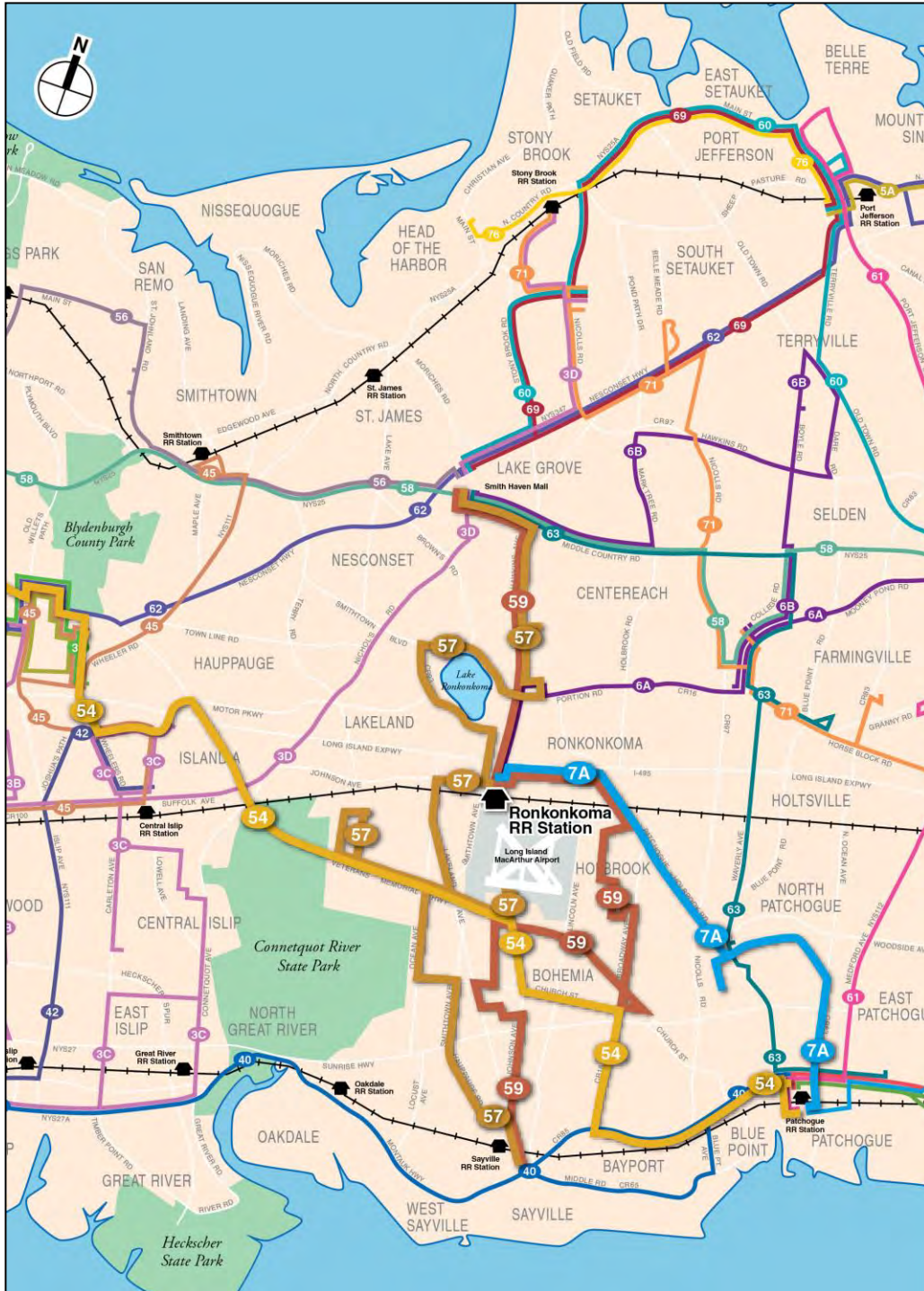


Figure A-15: North-South Connections – Ronkonkoma Station

Source: Suffolk County Transit

3.4.3.6. *Identified Improvement Proposals: Short Term and Long Term*

In the near term, plans for the station include double tracking the line to Farmingdale which would allow for reverse commuting service, as well as more flexible schedules. This is a significant enhancement of services, in that it will increase frequency, reduce waiting times at the stations for arriving trains, and may precipitate the Ronkonkoma station becoming a new commercial hub and residential center.

Long-term strategic planning has included the study for a light rail connection from the Ronkonkoma Station to the airport terminal building, as well as the feasibility of locating a new terminal to the north of the airport, adjacent to the LIRR station. This would allow for a direct rail-air transfer. A proposed Nicolls Road BRT line would connect the Ronkonkoma Hub with Stony Brook University to the north and the Village of Patchogue to the south.

3.4.3.7. *Summary Comments / Observations – Ronkonkoma Station*

The station neighborhood is a prime location for TOD. The area immediately adjacent to the station is composed mostly of surface parking which is at 98 percent capacity. Although multiple bus routes stop at the station, the predominant means of travelling to the station remains the private automobile.

Additional parking structures as part of a larger redevelopment plan will help alleviate parking congestion. Opportunities also exist to build multi-story residential uses over surface parking. Retail and commercial office space could also be built over surface parking. Reasonable travel times to/from NYC (70 to 90 minutes) and a central Suffolk County location, have contributed to make this a heavily used train boarding location for area residents. The planned double track of the line west to Farmingdale will likely increase ridership further and reduce travel time and delays.

Its central Suffolk County location makes this a good commercial development location serving local residents and those living in more eastern parts of Suffolk, with both improved rail and bus service to points east. There are few commercial/retail services beyond what is in, or immediately adjacent to the station building. The proximity to MacArthur Airport presents opportunities to create efficient train/airport shuttle service.

Zone of influence – ½-mile radius

The ½-mile zone around the Ronkonkoma station is influenced primarily by the airport and its operations (50 percent). Residential use defines 40 percent of the remaining land use while a small commercial area accounts for the rest (see **Figure A-13**).

Access to the station is gained via the The Long Island Expressway that passes through this zone and is just north of the station and airport proper. Most of the residential community within the ½-mile radius resides south of the LIE. Pedestrian access to the station can be achieved with relative ease, attainable by the sidewalks and crosswalks currently in place. Further, bus connections are available at the station, as are a shuttle and taxis.

Zone of influence – 1-mile radius

Residential land use increases to 60 percent as the radius extends to the one-mile limit from the station center. Small commercial zones are captured within this catchment, although a well-defined town center is lacking.

The Long Island Expressway bifurcates this northern residential community from the Ronkonkoma Station, limiting pedestrian access to three cross-points. Cycle access to the station could be achieved provided that a safe and positive environment is available.

Downtown

Downtown Ronkonkoma is ill-defined. Several centers providing police and fire department stations lie to the west, as do commercial strips to the north that could be seen as town centers. To the north is Lake Ronkonkoma, a well-established residential community and a destination point for those using the LIRR. The station is connected to Lake Ronkonkoma via Hawkins Avenue, itself defined by a commercial strip.

3.4.4. RONKONKOMA BRANCH: RIVERHEAD STATION

3.4.4.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: Osborne Avenue & Railroad Street (see **Figure A-16**)
- Fare Zone: 14
- Ridership: 52 (2006)
- Service Levels: 2 eastbound – 3 westbound train / day
- Station parking: 250 spaces



Figure A-16: Aerial View – Riverhead Station

3.4.4.2. *Current State of Existing Infrastructure and Facilities*

Context

Residential neighborhoods are found to north of the station (see **Figure A-17**). The Suffolk County Court is located immediately south of the station. Several adjacent parking lots serve the court buildings. Professional offices occupy former single-family homes. Two blocks south is Main Street.

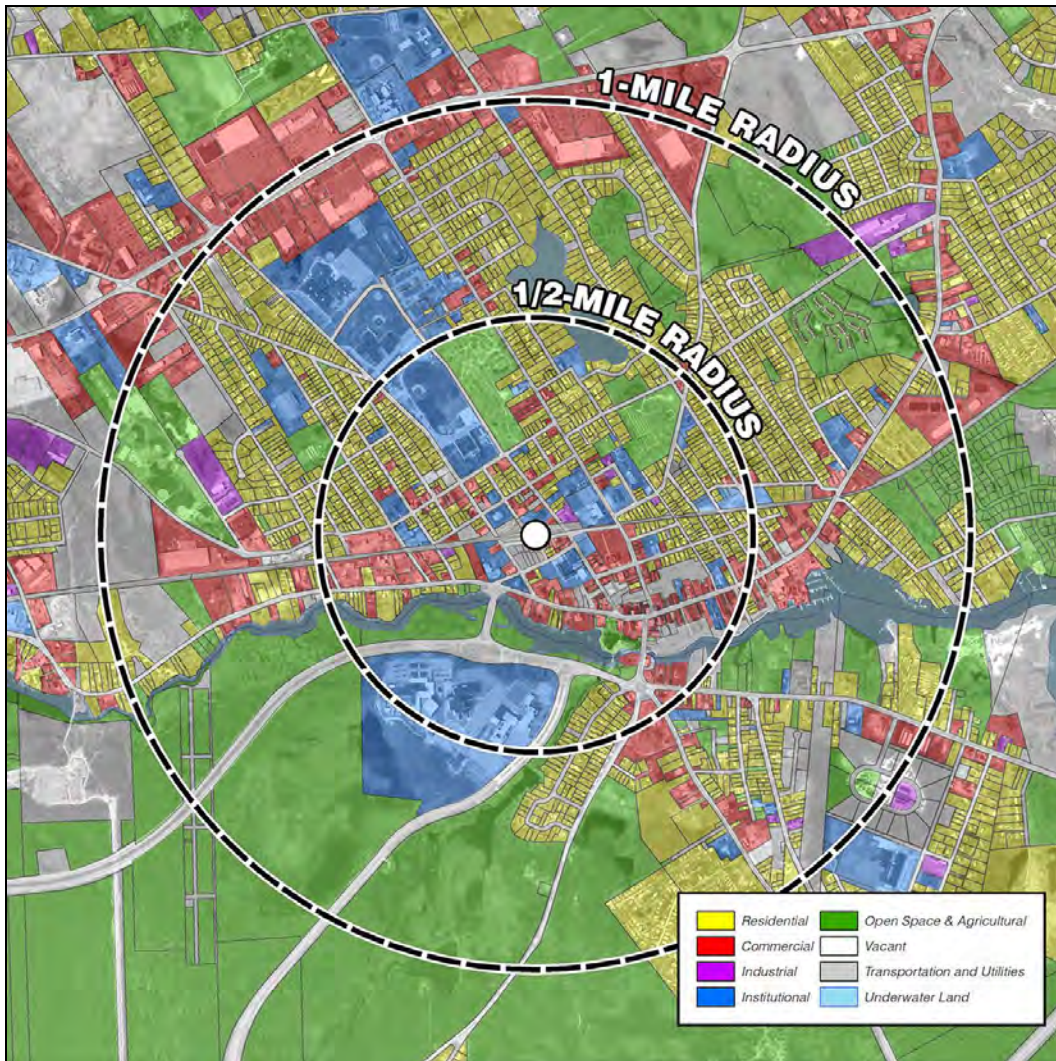


Figure A-17: Land Use and Catchment Area – Riverhead Station

History

The Riverhead Station, opened in 1845, is on the Main Line/Greenport Branch of the LIRR. The current station head house was built in 1910. During the 1890s and early-20th century additional operations and maintenance structures were built, and a water tower, turntable, and pump house occupied the site. Today the site is also the location of the Railroad Museum of Long Island.

Existing Conditions

The Riverhead Station is located on Osborne Avenue and Railroad Street in Riverhead, NY, north of Route 25A and near the Suffolk County Court. It is located two blocks north of Riverhead's Main Street.



Source: www.lirrhistory.com/aug2000/rvhdold.JPG

The station is served by a single 1.5-car-length high-level platform and is ADA-compliant. The platform ramp is accessed from the eastern head house portico. A customer shelter is provided alongside the platform. No other weather protection is offered along the platform. Additional shelter is located under the open station porticos on either side of the head house. The station building, which is owned by the Town of Riverhead, is closed to the public. The surface parking lot south of the station was observed to be at less than 15 percent capacity.



3.4.4.3. Intermodal Connectivity – Riverhead Station

Although train service to Riverhead is limited to just a few trains a day, the following buses make frequent stops at the train station (see **Figure A-18**). The S58, S62, S90, S92, and 8A local buses stop in front of the station head house. The open station porticos are used as sheltered waiting areas. Taxis queue curbside adjacent to the station platform to meet incoming trains. The bicycle rack is used to capacity and additional bikes were observed to be secured to station fencing.

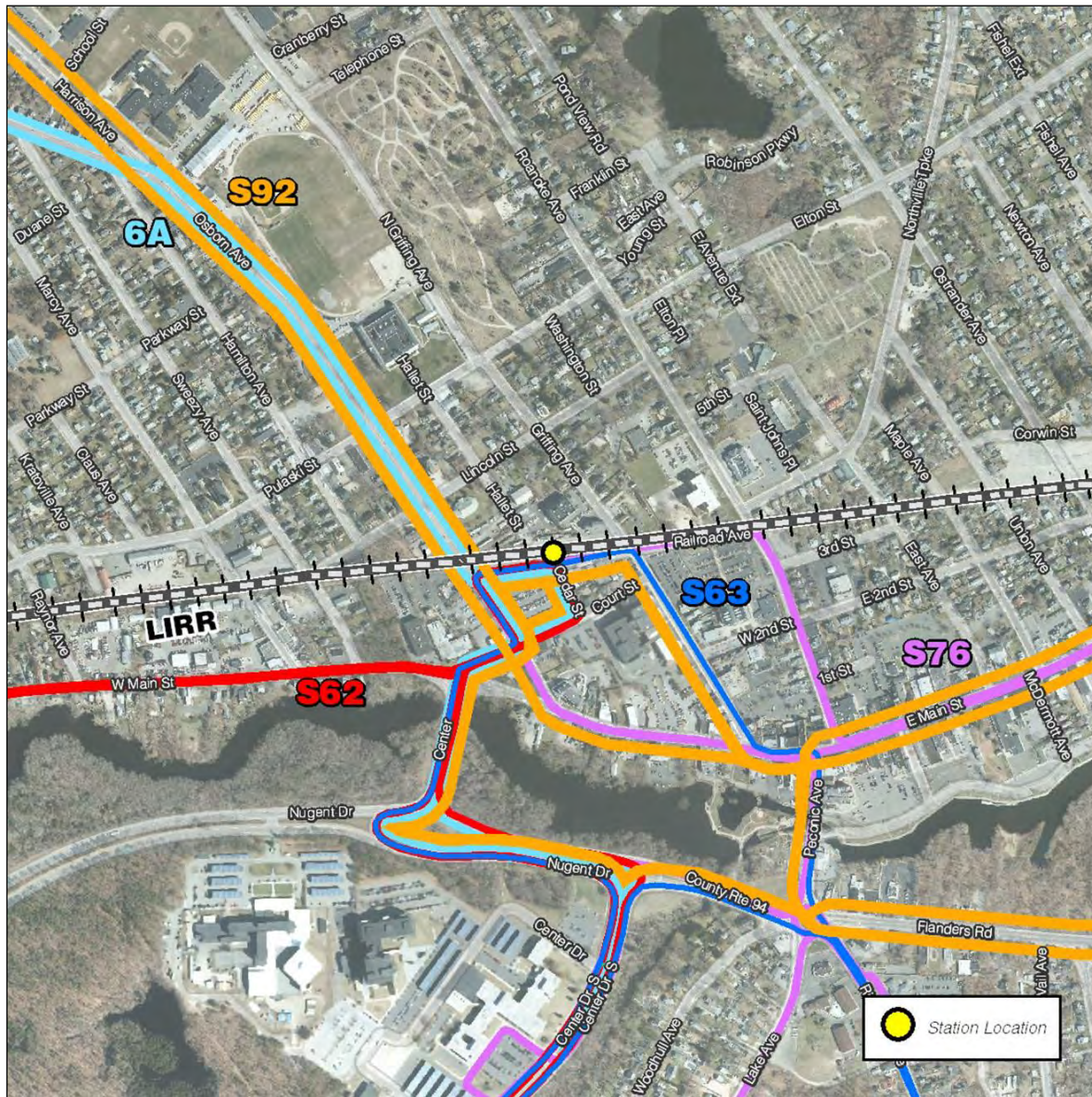


Figure A-18: Connectivity to Infrastructure – Riverhead Station

3.4.4.4. Needs and Deficiencies – Riverhead Station

EXISTING CONDITIONS SURVEY—RIVERHEAD STATION

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	2
Bicycle Racks	1	Proximity - Commercial	3
Bus Stops	3	Proximity - Downtown	3
Canopies	2	Proximity – Industrial	1
Connection - Airport	0	Proximity - Residential	2
Connection - Ferry	0	Structured Parking	0
Curb Frontage	3	Surface Parking	3
Drop-off Area	2	Taxi Stands	1
Head House	1	Waiting Area	1
Key:			
0 – Not Applicable		2 – Average	
1 – Below Average		3 – Above Average	

- Historic train station head house no longer open to the public or used for railroad operations, and no indoor waiting areas, toilets, or ticket sales
- Limited rail service, long travel times to Ronkonkoma and New York
- Ample surface parking
- Bicycle racks present but filled to capacity
- Bus hub of Eastern Suffolk County, 4 routes served, S92 (heavily traveled route) stops here, service to Orient and Montauk



- No taxi dispatch; taxis queue for arriving trains
- Close proximity to village center, county offices, and court building (1 to 2 blocks)
- Residential area is north of station proper

3.4.4.5. North-South Connections – Riverhead Station

Riverhead functions as the bus route hub for the eastern end of Suffolk County (see **Figure A-19**). The S92 bus route is the primary line that serves both the North Fork and South Fork. The S90 bus route also connects the station to the South Fork and Gabreski Airport.



Figure A-19: North-South Connections – Riverhead Station
 Source: Suffolk County Transit

3.4.4.6. *Identified Improvement Proposals: Short Term and Long Term*

While rail service is limited to a few trains per day, bus service remains relatively frequent. Re-opening the station’s waiting room, in conjunction with the potential leasing of a portion of the station to a retail tenant, would provide a better level of service for passengers while also creating a more secure and active environment.

3.4.4.7. *Summary Comments / Observations – Riverhead Station*

Zone of influence - ½-mile radius

Riverhead lies at the base of the forks and is an active and desirable year-round hamlet. Predominantly residential, the area is defined by agriculture/vineyards to the north and the Pine Barrens preserve to its south (see **Figure A-17**). The Riverhead Station is within walking distance of downtown, defined by commercial/retail development along Route 25. The Suffolk County Court is centrally located between the station and downtown, within walking distance of the LIRR station.

The Riverhead Station is supported by ample surface parking that appears to be underutilized. A three-train daily service is currently provided to its residents. Located at the north edge of the river, just south of Main Street, is a pedestrian park accessed via Peconic Avenue. The concentration of retail and other amenities makes the downtown easily accessible and desirable.

Zone of influence – 1-mile radius

The one-mile catchment radius extends to just south of Old Country Road (County Road 58), a significant east/west arterial road that is commercially developed, though more car-centric in destination than Route 25. Within its limits is an office park, a school, and newly constructed and anticipated TOD mixed-use developments. Gabreski Airport is approximately 5 miles out of the Riverhead downtown region.

Downtown

Downtown Riverhead presents a vibrant retail and commercial district that is well utilized and inviting to its residents. The station, given its proximity to downtown, offers convenient access to the town center, its establishments, and civic services. The synergy between these two important elements has avoided the more typical conflict that arises when a train station is removed from its town center, contributing to the health and viability of the downtown region as a destination for both economic and entertainment use.

The Town of Riverhead is supported by parks, a marina, and its bucolic setting and waterfront venues. It is within reach of a shopping mall, office park, and Gabreski Airport.

3.4.5. RONKONKOMA BRANCH: GREENPORT STATION

3.4.5.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: Wiggins Street and Fourth Street (see **Figure A-20**)
- Fare Zone: 14
- Ridership: 5 (2006)
- Service Levels: 2 westbound trains / day (seasonal)
- Station parking: 80 spaces



Figure A-20: Aerial View – Greenport Station

3.4.5.2. *Current State of Existing Infrastructure and Facilities*

Context

The LIRR station and ferry terminal are located on the harbor near the center of Greenport Village (see **Figure A-21**). The area is a mix of commercial/retail, residential, and waterfront activity (docks and marinas). A dock is located immediately adjacent to the station head house. This dock is owned by Suffolk County, and leased to the Village of Greenport. The entire Village center and harbor is easily walkable, being only a few blocks away.

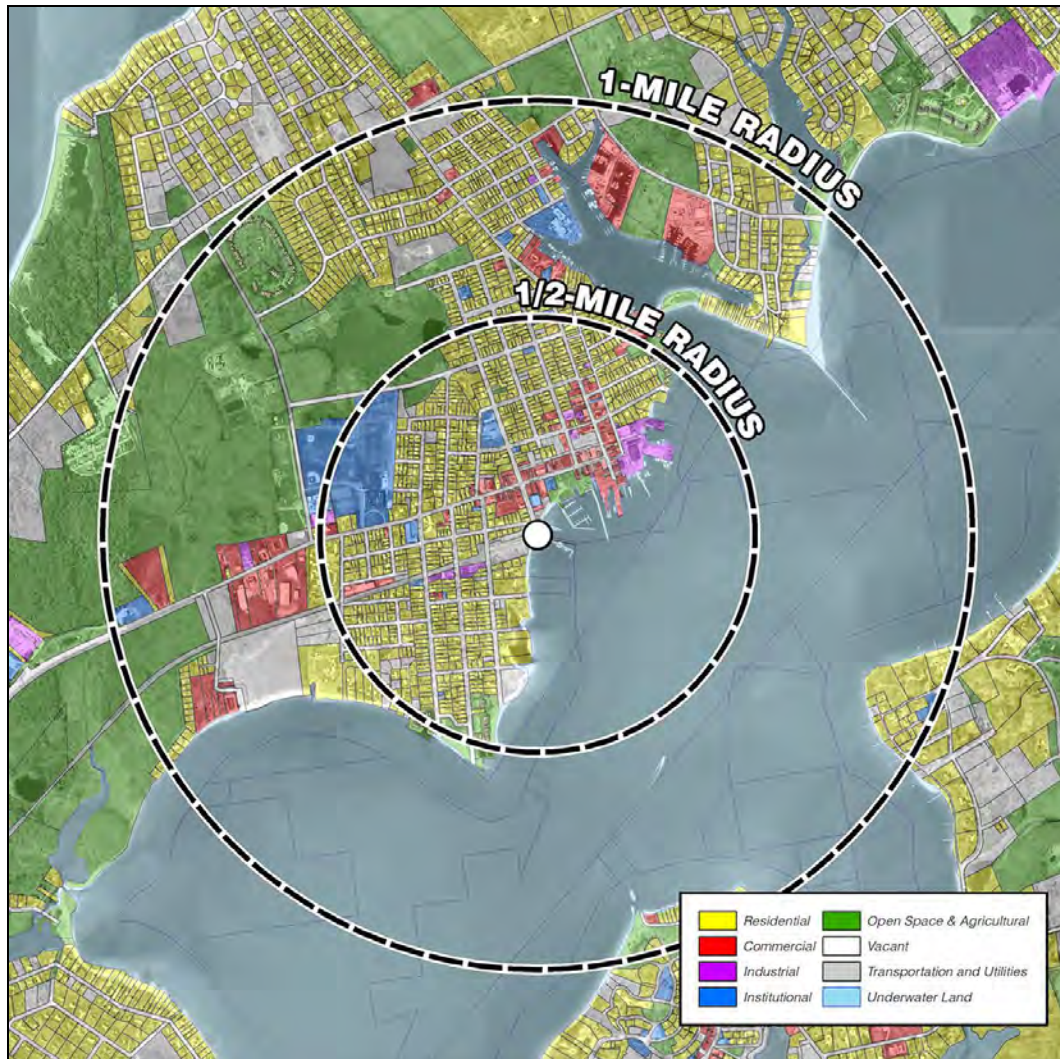


Figure A-21: Land Use and Catchment Area – Greenport Station

History

Greenport station was originally built in 1844 as the east end terminal of the Main Line. Arriving trains would meet steamships headed to New London, CT. The dock was immediately adjacent to the station. The North Ferry began service to Shelter Island in 1868. The current station head house was built around 1892 and is listed on the National Register of Historic Places. The station complex at one time included a working turntable and a train shed. In 2001, a 1.5-car high-level platform was built to accommodate bi-level coaches.



Existing Conditions

The current original head house is currently the home of the east end maritime museum. It is no longer used for railroad passenger operations. Tickets are purchased through a ticket vending machine. The former freight house is used today as the eastern annex of the railroad museum. The island station platform is



ADA-compliant and has a full-length canopy. Two unrestricted free parking lots flank the station to the north and south. There appears to be no capacity shortages. The vehicle and passenger ferry terminal to Shelter Island is immediately adjacent to the station head house. The ferry terminal building contains restrooms and a ferry ticket office.

3.4.5.3. *Intermodal Connectivity – Greenport Station*

The station offers excellent connections to other modes of transport. The Shelter Island ferry terminal/dock is immediately east of the station. The bus shelter is just south of the platform where passengers can get the S92 bus with connecting service to the 10A, 10B, 10C and 10D buses to the Hamptons and Sag Harbor (see **Figure A-22**). Passengers can also connect to the privately operated Hampton Jitney North Fork Line to the Orient Point ferry terminal. No bicycle racks are present but bike lockers are immediately adjacent to the bus shelter. There is no taxi dispatch, but taxis do queue here.



Figure A-22: Connectivity to Infrastructure – Greenport Station

3.4.5.4. Needs and Deficiencies – Greenport Station

EXISTING CONDITIONS SURVEY—GREENPORT STATION

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	0
Bicycle Racks	1	Proximity - Commercial	2
Bus Stops	1	Proximity - Downtown	1
Canopies	2	Proximity – Industrial	2
Connection - Airport	0	Proximity - Residential	3
Connection - Ferry	3	Structured Parking	3
Curb Frontage	0	Surface Parking	1
Drop-off Area	2	Taxi Stands	2
Head House	1	Waiting Area	1
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			

- Private bus connection to ferry services to Connecticut
- Direct connection with ferry services to Shelter Island
- Historic train station head house no longer used for railroad operations and no indoor waiting areas, toilets or ticket sales
- Limited rail service, long travel times to Ronkonkoma and New York
- Adequate surface parking
- Bicycle lockers present, no open bicycle racks observed
- S92 (heavily traveled route) stops here, service to Orient and Riverhead
- No taxi dispatch
- Close proximity to village center, town docks and marinas



3.4.5.5. North-South Connections – Greenport Station

Greenport’s singular location gives it easy access to points north and south of town (see **Figure A-23**). Residents have quick access to ferry services that will take them to Connecticut or to the



Figure A-23: North-South Connections – Greenport Station

Source: Suffolk County Transit

South Fork via Shelter Island. Although Shelter Island is linked to Greenport by the North Ferry and to Sag Harbor and the South Fork by the South Ferry, there is no mass transit connection on the island between the two ferry services. North, and within easy access of Greenport, is County Road 48, a major vehicular artery running the length of the North Shore.

Recent attempts at providing ferry operations between Greenport and Sag Harbor proved to be non-sustainable. Historically, ferry connections to New London, CT, were made from the LIRR Dock in Greenport, adjacent to the train station. It would appear that the added travel distance compromised the viability of this route, though having a direct connection to downtown could be an economic asset for Greenport.

3.4.5.6. Identified Improvement Proposals: Short Term and Long Term

A short-term enhancement would be the provision of bike racks at the station. While rail service is limited to a few trains per day, bus service remains relatively frequent. Provision of a station waiting room would provide a better level of service for passengers and would create a more secure and active environment.

3.4.5.7. Summary Comments / Observations – Greenport Station

The close locations of intermodal connections to the village center make Greenport a prime location for commercial/residential development. Lengthy land travel times (via Riverhead) to the south fork make ferry travel a more attractive and direct alternative, especially if it could be enhanced with a vehicle link from Orient to South Shore points.

Zone of influence – ½-mile radius

Greenport's strategic location gives it a high level of connectivity to a series of intermodal services: the LIRR, ferries for access both to Eastern Connecticut (via Orient Point) and the South Fork (via the Shelter Island ferries), as well as a bus connection (S92), and connections to the Hampton Jitney (see **Figure A-21**). The town center straddles Route 25, a major thoroughfare servicing Suffolk County, linking Greenport with other townships. This connectivity makes the town a more accessible and desirable destination for both year-round residents as well as seasonal visitors.

The ½-mile radius defines an area that is half residential/commercial in use with the remaining consigned to open waters. The residential district is within easy walking distance of downtown, a link that should be encouraged with safe and desirable paths of travel.

Zone of influence – 1-mile radius

Widening the catchment to the one-mile radius encapsulates a significantly larger percentage of residential use as well as notable areas of undeveloped land. This residential zone could be serviced with cycle paths should they be warranted.

Downtown

Downtown Greenport presents a vibrant and desirable commercial district. In addition to the positive intermodal connections previously described, the center supports a wide range of restaurants, retail stores, public open spaces, waterfront access points, active piers, marinas, bed and breakfasts, and entertainment venues. This diversity in services can enliven and spur economic growth.

3.4.6. MONTAUK BRANCH: BABYLON STATION

3.4.6.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Railroad Avenue west of Deer Park Avenue, Babylon, NY Fare Zone 9 (see **Figure A-24**)
- Ridership: 6,586 (2006)
- Service Levels: 23 eastbound – 68 westbound trains / day
- Station parking: Approximately 865



**Figure A-24: Aerial View
– Babylon Station**

3.4.6.2. *Current State of Existing Infrastructure and Facilities*

Context

The station resides predominantly in a residential community with commercial development two blocks to the south (see **Figure A-25**). New multi-family development can be found two blocks north on the corner of Park and Carl Avenues.

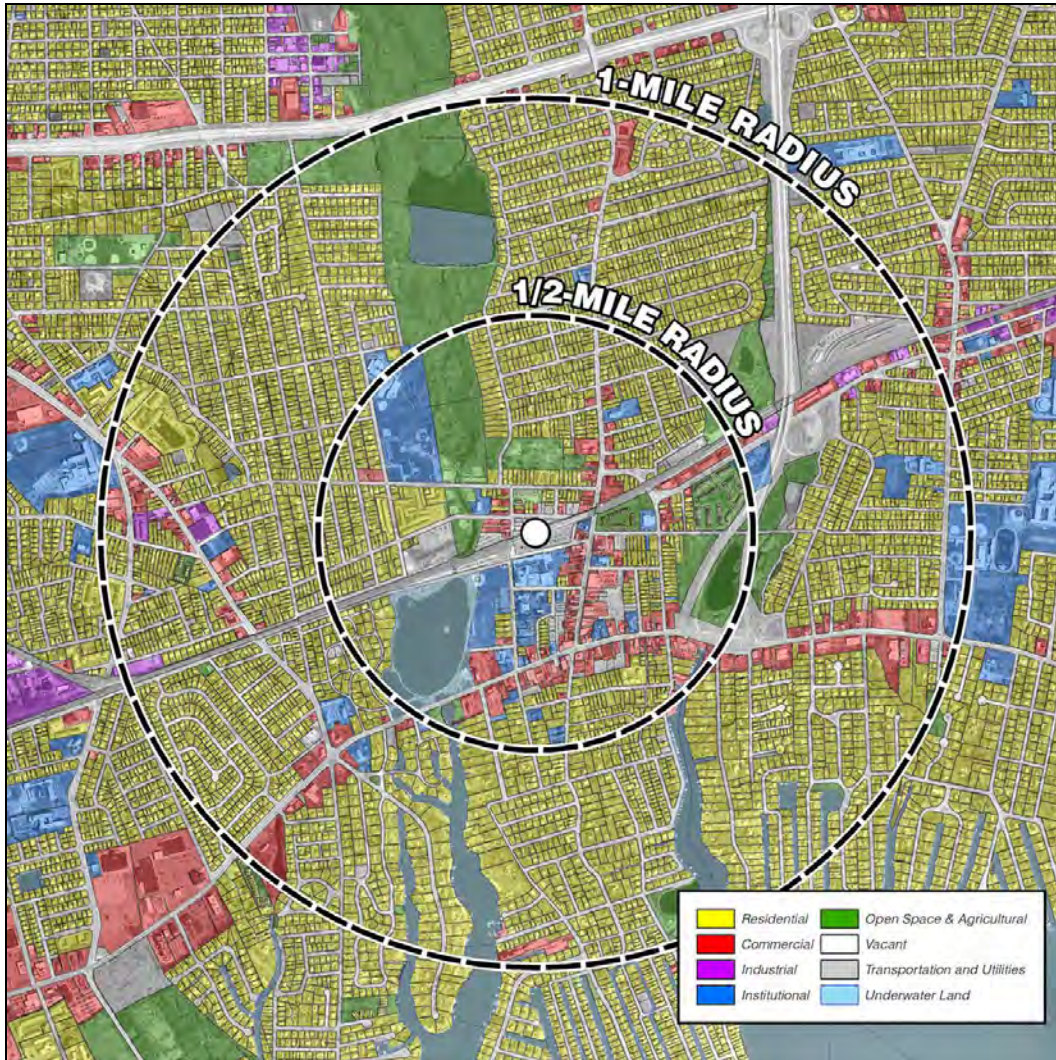


Figure A-25: Land Use and Catchment Area – Babylon Station

History

The Babylon Station originally opened in 1867. The Central Railroad of Long Island had once planned an extension to the Great South Bay and Fire Island, but it was never built. The second depot opened in 1881 but was demolished in 1963 as part of the grade elimination project that

was underway along the entire Babylon Branch. The new, elevated station opened in 1964 and is the terminus of the electrification of the line that took place in 1987.



Source: www.bing.com/images/search?q=babylon+station+ny+historic+photos

3.4.6.3. Existing Conditions

The elevated station accommodates two island platforms serving three tracks. The platforms are partially protected by canopies and are ADA accessible. There are also enclosed platform waiting areas. The station has a large on-grade head house that contains a staffed agent ticket office, a waiting area, and bathrooms. Each platform is accessed by an elevator, a single escalator, and a stair. Small concessions are located under the elevated portion of the station.



3.4.6.4. Intermodal Connectivity – Babylon Station

The station is accessed by North Carl Avenue to the west and Deer Park Avenue to the east. It is surrounded by surface parking to the north and south of the elevated tracks and under the viaduct. As an intermodal hub, the station offers bus connections to the N19, N72, S20, S23, S25, S27, S29, S40, S42, and S47 along Railroad Avenue, although the S47 Route operates only during the summer from the Monday after Father’s Day through Labor Day (see **Figure A-26**). There is also a taxi dispatch stand and provisions for bicycle racks.

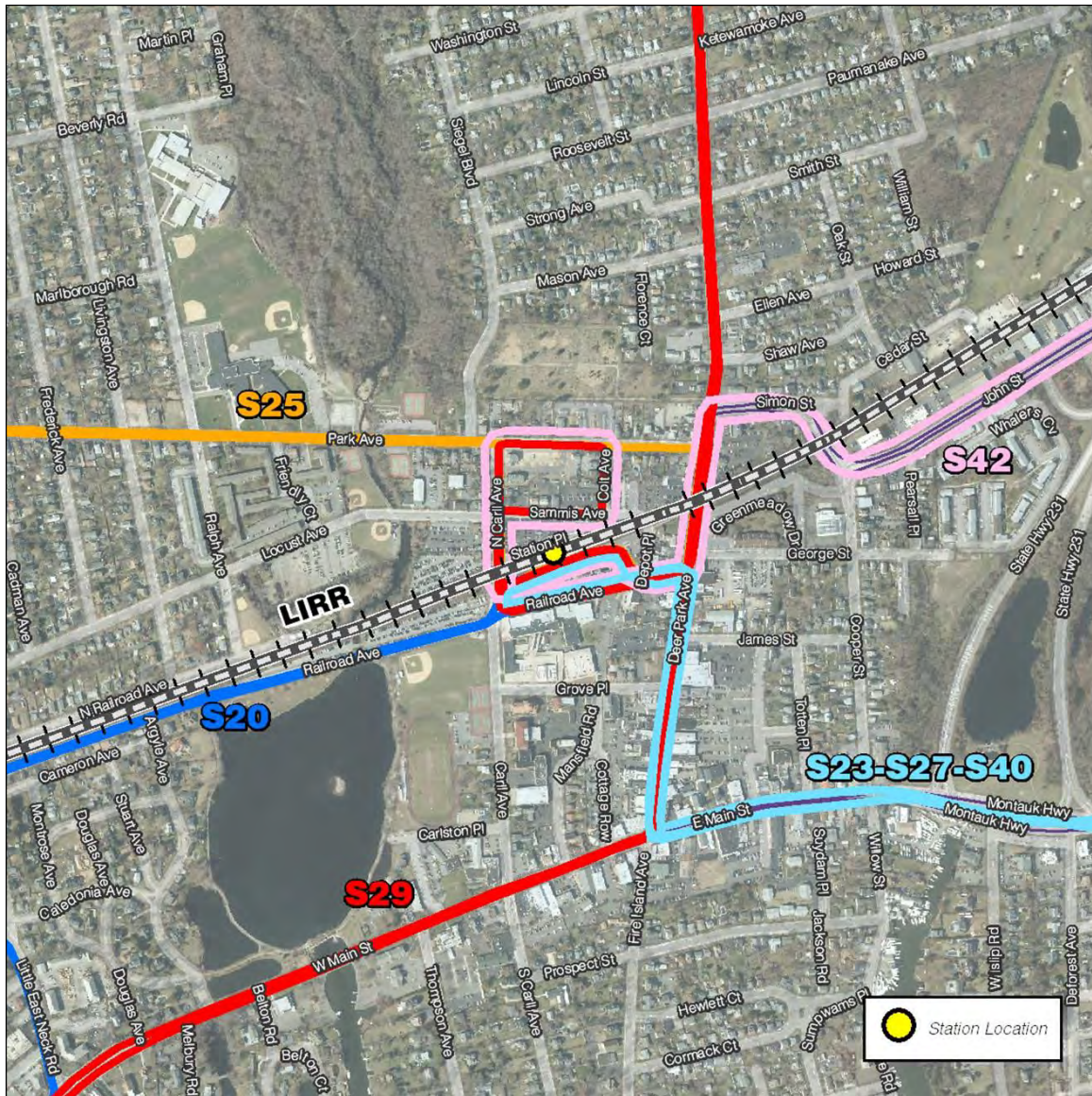


Figure A-26: Connectivity to Infrastructure – Babylon Station

3.4.6.5. Needs and Deficiencies – Babylon Station

EXISTING CONDITIONS SURVEY—BABYLON STATION

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	2
Bicycle Racks	1	Proximity - Commercial	2
Bus Stops	2	Proximity - Downtown	3
Canopies	2	Proximity – Industrial	0
Connection - Airport	0	Proximity - Residential	2
Connection - Ferry	0	Structured Parking	0
Curb Frontage	2	Surface Parking	3
Drop-off Area	2	Taxi Stands	2
Head House	3	Waiting Area	3

Key:
 0 – Not Applicable 2 – Average
 1 – Below Average 3 – Above Average



- Good intermodal connections between the LIRR and multiple bus routes
- 10 different bus routes service this station, including the heavily used S40 Bus to Patchogue
- The surface parking is at full capacity by the AM peak periods
- New residential development noted north of the station proper
- There are private vehicle drop-off locations adjacent to the station waiting area, but they must be accessed through the car parking lots and share bus travel lanes on the south side of the station
- Taxi dispatch office present, adjacent to waiting room
- One block from downtown Main Street and commercial development

3.4.6.6. North-South Connections – Babylon Station

Two bus routes, the S29 and S23, connect the station to the Walt Whitman Mall via Deer Park and Wyandanch, respectively (see **Figure A-27**). The S25 bus route connects the station to North Babylon, while the S27 bus route connects the station to Edgewood, then to Hauppauge via Routes 82 and 100 and Washington Avenue.

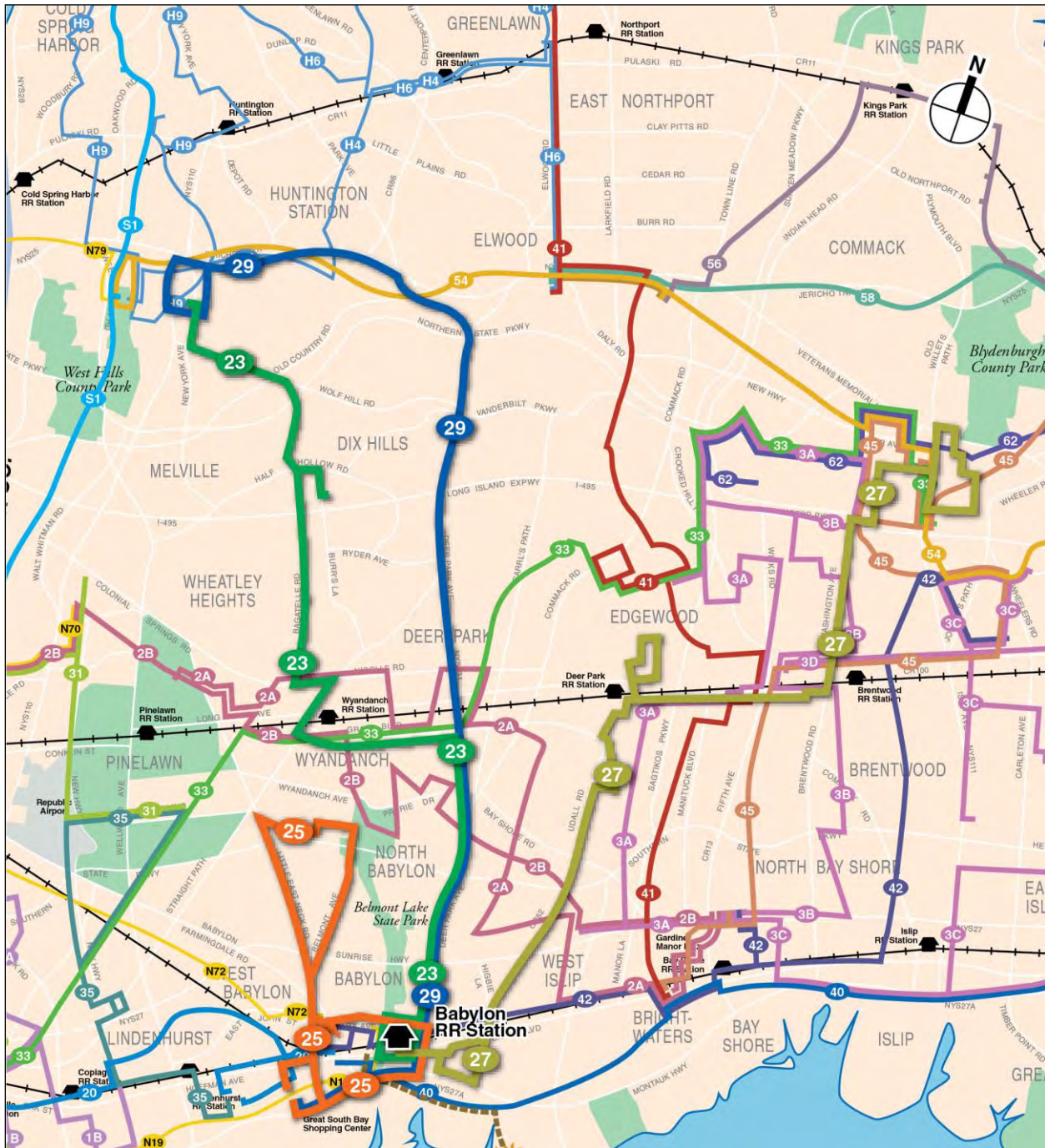


Figure A-27: North-South Connections – Babylon Station

Source: Suffolk County Transit

3.4.6.7. *Identified Improvement Proposals: Short Term and Long Term*

A short-term enhancement would be the provision of bike racks at the station. A long-term improvement could include additional parking for commuters.

3.4.6.8. *Summary Comments / Observations – Babylon Station*

Although a significant amount of vacant land was not identified, the station and environment can support higher-density housing development.

Zone of influence - ½-mile radius

This LIRR station is the terminus to the electrified line and is within ¼-mile of downtown Babylon (see **Figure A-25**). Permit parking is provided adjacent to the station but is frequently at capacity. A seasonal shuttle bus from the station provides service to Robert Moses State Park within acceptable travel distance of downtown Babylon. The Sunrise Highway is to the north of the station and Route 27A to its south. Route 27A, a major west – east thoroughfare, defines the downtown commercial zone and is within walking distance of the LIRR station.

The area located within the ½-mile radius is predominantly residential (85 percent), with commercial (15 percent) and industrial (5 percent) supporting the remaining land use. Residential housing is composed of single-family homes with several attached multi-family dwellings under development. The Babylon High School is immediately south of the station providing easy access. This residential district serves a bedroom community, with several additional new developments currently underway. Residents have boat access from private docks to Babylon Cove.

Zone of influence - 1-mile radius

The one-mile radius from the station proper just touches upon the Sunrise Highway and continues to define a large residential presence, as well as a significant amount of open land. This area includes Argyle Lake, Southards Pond, and other open lands, providing residents with walking trails, bridle paths, and recreational venues. Its proximity and easy access to the South Shore make it a desirable destination for both residents and weekenders.

Downtown

Downtown has evolved around Route 27A and is within easy access of the Babylon LIRR station. It is well-defined and has a vibrant commercial zone. Wide sidewalks facilitate walking and browsing and are landscaped to present a pleasant and inviting environment. Ample crosswalks provide safe crossing and utilization of the downtown concessions. Marina-related development has evolved along the bay and creek shorelines.

3.4.7. MONTAUK BRANCH: PATCHOGUE STATION

3.4.7.1. Current Level of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: Division Street & South Ocean Avenue, Patchogue NY (see **Figure A-28**)
- Fare Zone 10
- Ridership: 2,327 (2006)
- Service Levels: 19 eastbound – 24 westbound / day
- Station Parking: 301 spaces



Figure A-28: Aerial View – Patchogue Station

3.4.7.2. *Current State of Existing Infrastructure and Facilities*

Context

The Patchogue Station is located off Division Street in a predominantly residential area (see **Figure A-29**). Vehicular access to the station is gained by South Ocean Ave and West Avenue onto Division Street. The station is within a short distance of downtown Patchogue. There is an active residential development to the north, and significant residential development is underway on Main Street two blocks north.

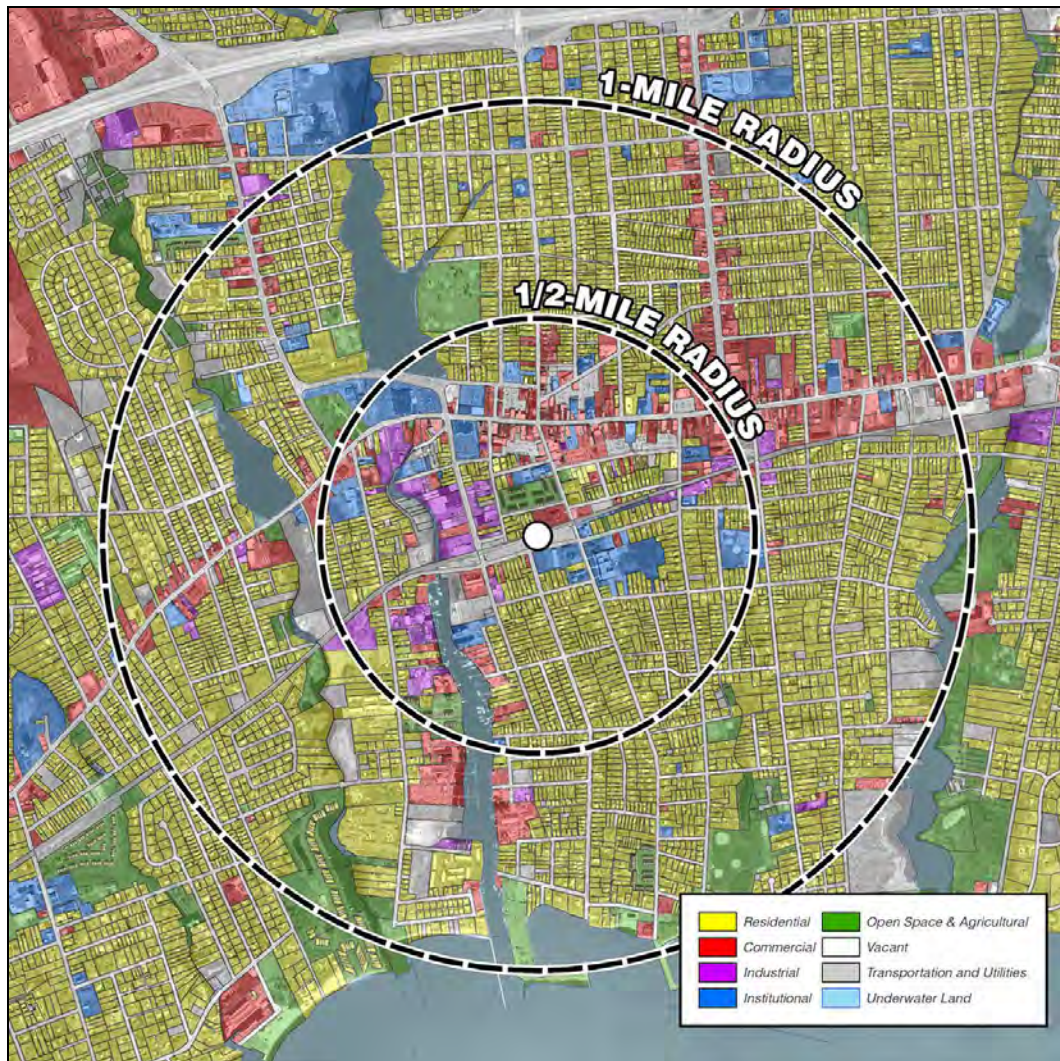


Figure A-29: Land Use and Catchment Area – Patchogue Station

History

The Patchogue Station opened in 1869 and is on the Montauk Branch of the LIRR. Between 1869 and 1879, the Patchogue Station was the east end of the South Side Railroad of Long Island. It had multiple spurs—one of which was between River Avenue and West Avenue—for the textile plant that now serves as the Patchogue Campus of Briarcliffe College. As part of the 1963 reconstruction, Railroad Avenue was terminated at Sephton Street, along the north side of the tracks, and the baggage and express house was torn down for additional parking. High-level platforms were added in 1997 to accommodate bi-level trains.



Source: <http://trainsarefun.com/lirr/patchogue/photos/patchdepot.jpg>

Existing Conditions

The current on-grade Patchogue Station is served by a single head house, built in 1963 and located south of the tracks. It includes an indoor waiting area, bathrooms, and a part-time ticket office. The single side platform has been raised and modified to accommodate bi-level trains. Access onto the platform is gained via a ramp and stairs located in a zone between the head house and platform. The platform proper is protected by a full-length canopy.



Surface parking is provided along the length of the south side of the station proper with additional surface parking provided to the north. Observed during mid-day peak, the lot

appears to be 40 percent vacant. There is no structured parking in the vicinity of the station. A marina basin is located southwest of the site.

3.4.7.3. *Intermodal Connectivity – Patchogue Station*

The Patchogue Station offers connections to the Suffolk County Transit buses (see **Figure A-30**). A bus stop shelter is located south of the parking lot on Division Street. Also accessible are the local jitney and bus routes.

The station provides connection to ferries to Davis Park and Watch Hill on Fire Island. The Fire Island National Seashore Watch Hill Ferry Terminal is half a block southwest of the station parking lot on West Avenue. The Davis Park Ferry Terminal is located further south of the station in the Town of Brookhaven Sandspit Park. No taxi dispatch is present, but several dedicated taxi parking spaces were observed.

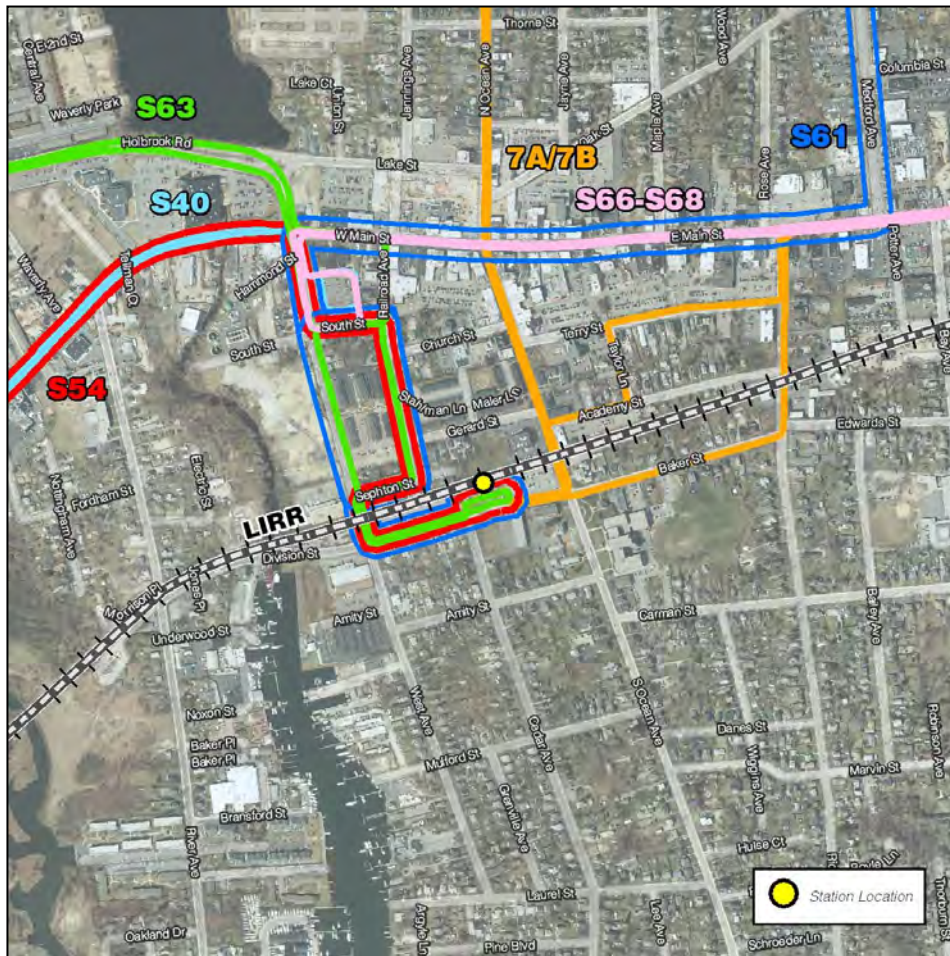


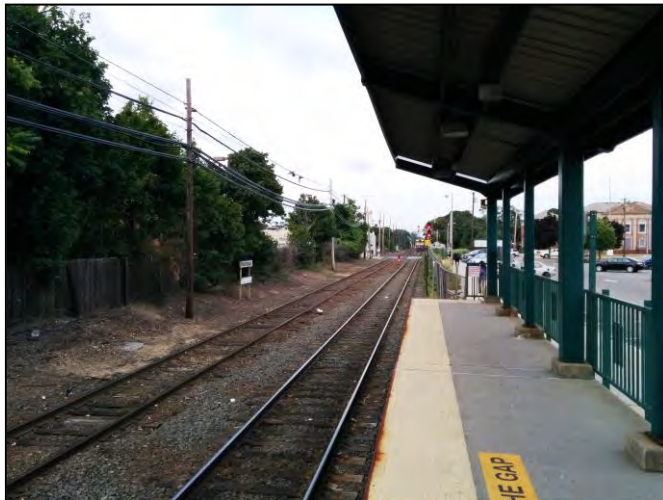
Figure A-30: Connectivity to Infrastructure – Patchogue Station

3.4.7.4. Needs and Deficiencies – Patchogue Station

**EXISTING CONDITIONS SURVEY—
PATCHOGUE STATION**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	3
Bicycle Racks	0	Proximity - Commercial	3
Bus Stops	2	Proximity - Downtown	2
Canopies	3	Proximity – Industrial	1
Connection - Airport	1	Proximity - Residential	3
Connection - Ferry	3	Structured Parking	0
Curb Frontage	2	Surface Parking	3
Drop-off Area	3	Taxi Stands	0
Head House	2	Waiting Area	2
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			

- Offers transfers to multiple bus routes
- Routes: S40, S54, S61, S63, S66, S68, 7A, and 7B
- Surface parking at 60 percent capacity
- Station is within walking distance of downtown
- Residential TODs within walking distance
- Half-block walk to the Fire Island National Seashore Watch Hill Ferry Terminal



3.4.7.5. North-South Connections – Patchogue Station

North-south connectivity from the Patchogue Station is achieved primarily along Route 112 to Port Jefferson via S61 (see **Figure A-31**). The 7A bus route connects the station to the Ronkonkoma Station, and the S63 bus route connects the station to Smith Haven Mall in Lake Grove.

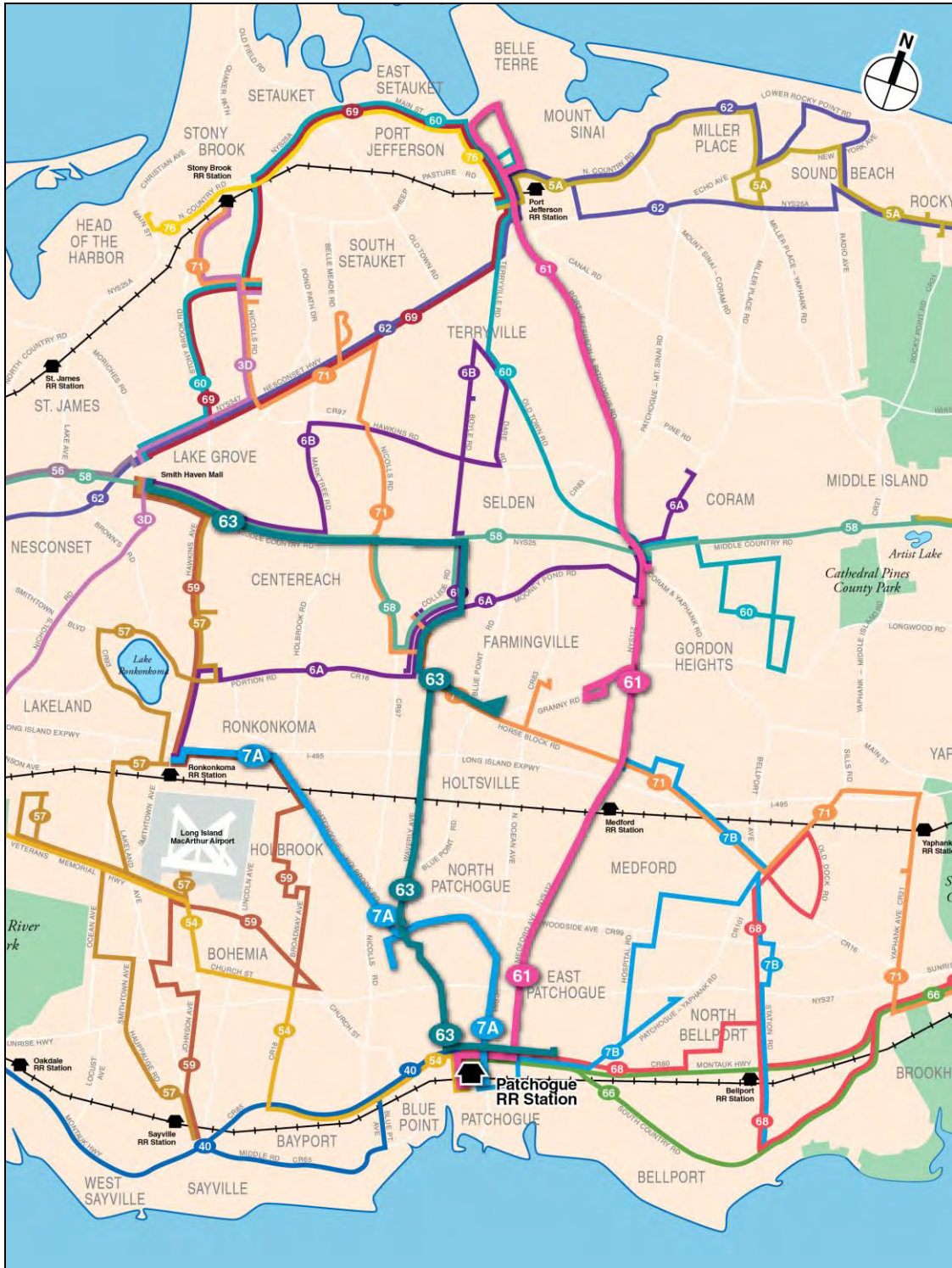


Figure A-31: North-South Connections – Patchogue Station

Source: Suffolk County Transit

3.4.7.6. *Identified Improvement Proposals: Short Term and Long Term*

A short-term enhancement could be the addition of bike racks at the station. A long-term improvement could include the provision of direct shuttle service to MacArthur Airport.

3.4.7.7. *Summary Comments / Observations – Patchogue Station*

In addition to the high-density residential development under development on Main Street, an additional potential TOD site is located on the water at the west end of Mulford street, two blocks south of the station.

Zone of influence - ½-mile radius

The at-grade train station is within a ½-mile of downtown and serves a large residential community (see **Figure A-29**). The area between the station and Main Street (Montauk Highway) is composed of commercial development and multi-family residences, with single-family homes just south between the station limits and the Patchogue Bay.

The convenient intermodal connections available between the ferry terminal, Route 85 (that goes through the downtown region), and the LIRR station could encourage residents to avail themselves of these alternative modes of transportation as they are within walking distance of each other.

Zone of influence – 1-mile radius

The one-mile radius from the station defines an area that spans from Patchogue Bay to its south, to the Sunrise Turnpike to its north. Montauk Highway, the commercial heart of the town, is on centerline with the area described.

The area contained within this circumference is predominantly comprised of single-family homes, many of which originated as summer homes before being converted to year round use. Their supporting network of small residential roads and limited traffic make them conducive to bicycle travel, especially if dedicate cycle paths can be introduced.

Downtown

As with many towns along the South Shore, the downtown area has developed along the primary access road. Downtown Patchogue retains an active and positive character that gives impetus towards a sustainable and healthy economy that draws people to want to live nearby. As a result, many new developments have arisen in near proximity of the downtown, with TOD encouraged.

3.4.8. MONTAUK BRANCH: MONTAUK STATION

3.4.8.1. Current Levels of Operations and Service

Long Island Rail Road

- Field Observation: November 2013
- Address: Edgemere Street & Fort Pond Road, Montauk, NY (see **Figure A-32**)
- Fare Zone: 14
- Ridership: 23 (2006)
- Service Levels: 7 eastbound arriving trains - 5 west bound departing trains /day
- Station parking: 80+ spaces, no restrictions



Figure A-32: Aerial View – Montauk Station

3.4.8.2. Current State of Existing Infrastructure and Facilities

Context

The center of Montauk Hamlet is located 1 mile south of the train station. The commercial area of Montauk harbor is located 1.5 miles to the northeast (see **Figure A-33**). The remaining land is primarily residential. Some industrial development is found immediately west of the station.

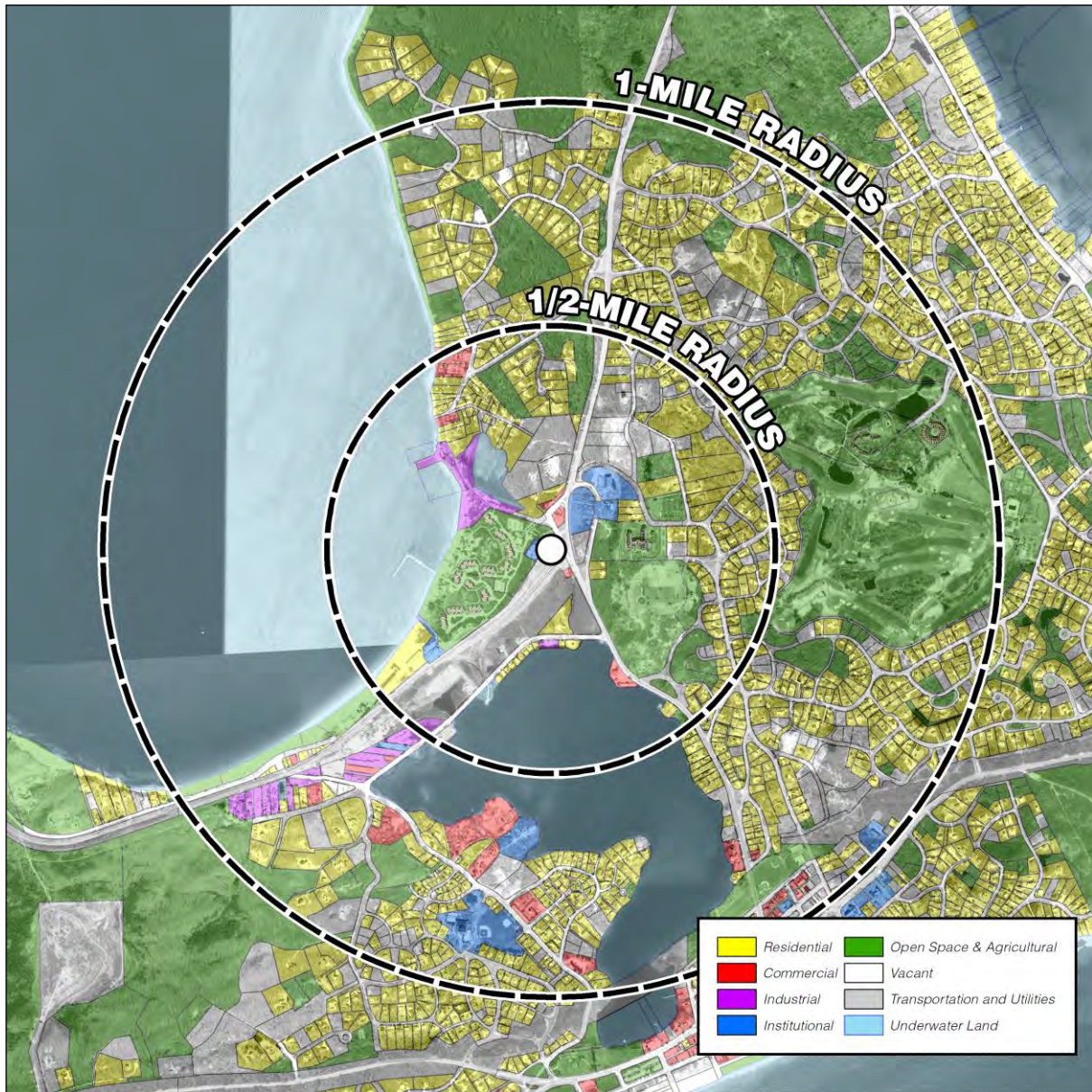


Figure A-33: Land Use and Catchment Area – Montauk Station

History

The station was originally built in 1895 when it was the east end terminal of what was then the Brooklyn and Montauk Railway. It is located one mile north of the seaside hamlet of Montauk. The current station was relocated/built in 1927. The six-car-high island platform was added in 2001 to accommodate bi-level trains and provide ADA accessibility.



Existing Conditions

Montauk is the east end terminus of the LIRR Montauk branch and is a stub end station. The at-grade Montauk Station has a head house east of the tracks that is no longer used as an indoor passenger waiting room. Instead, the space is leased to an art gallery. There is a ticket vending machine under the west facing portico. There are seven tracks, five of which are used for train storage. Only two tracks are used for



passenger service. A narrow center island platform is located between the two northernmost tracks. It is a high-level ADA accessible platform to accommodate dual-level trains. ADA accessibility is provided via an exterior ramp. The platform is located over 500 feet west of the head house. The platforms are sheltered by half-platform-length canopies, but there is no canopy over the long walkway from the parking area to the platform.



no canopy over the long walkway from the parking area to the platform.

Surface parking is provided adjacent to the north side of the station proper and tracks. All parking is unrestricted. The lot was observed mid-day in the off-season to be 10% full.

3.4.8.3. *Intermodal Connectivity – Montauk Station*

Montauk is the east end terminus of the LIRR Montauk branch (see **Figure A-34**). Connections are provided to the S10C bus route. Taxis can be found here, but there is no taxi dispatch. No bicycle racks were noted, nor were any bikes seen. The Montauk to Block Island passenger ferry (seasonal only) can be accessed from the harbor area to the northeast, but requires a connecting bus or taxi.



Figure A-34: Connectivity to Infrastructure – Montauk Station

3.4.8.4. Needs and Deficiencies – Montauk Station

EXISTING CONDITIONS SURVEY—MONTAUK STATION

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	3	Platforms	0
Bicycle Racks	0	Proximity - Commercial	1
Bus Stops	1	Proximity - Downtown	1
Canopies	1	Proximity – Industrial	3
Connection - Airport	1	Proximity - Residential	3
Connection - Ferry	0	Structured Parking	0
Curb Frontage	0	Surface Parking	3
Drop-off Area	1	Taxi Stands	0
Head House	0	Waiting Area	1
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			

- Limited rail service, long travel times west to Babylon and New York
- Limited number of bus routes
- No indoor waiting area
- Narrow platform
- No bicycle racks
- Station is approximately one mile from hamlet center, so not centrally located to destination points
- Station is approximately 1.75 miles from Montauk harbor area
- Most passengers require additional connections to reach final destination, such as buses or taxis



3.4.8.5. North-South Connections – Montauk Station

Montauk Train station is located adjacent to Fort Pond Bay, a deep water harbor, and one mile north of the Montauk highway (see **Figure A-35**). The potential exists to provide ferry service from this location.

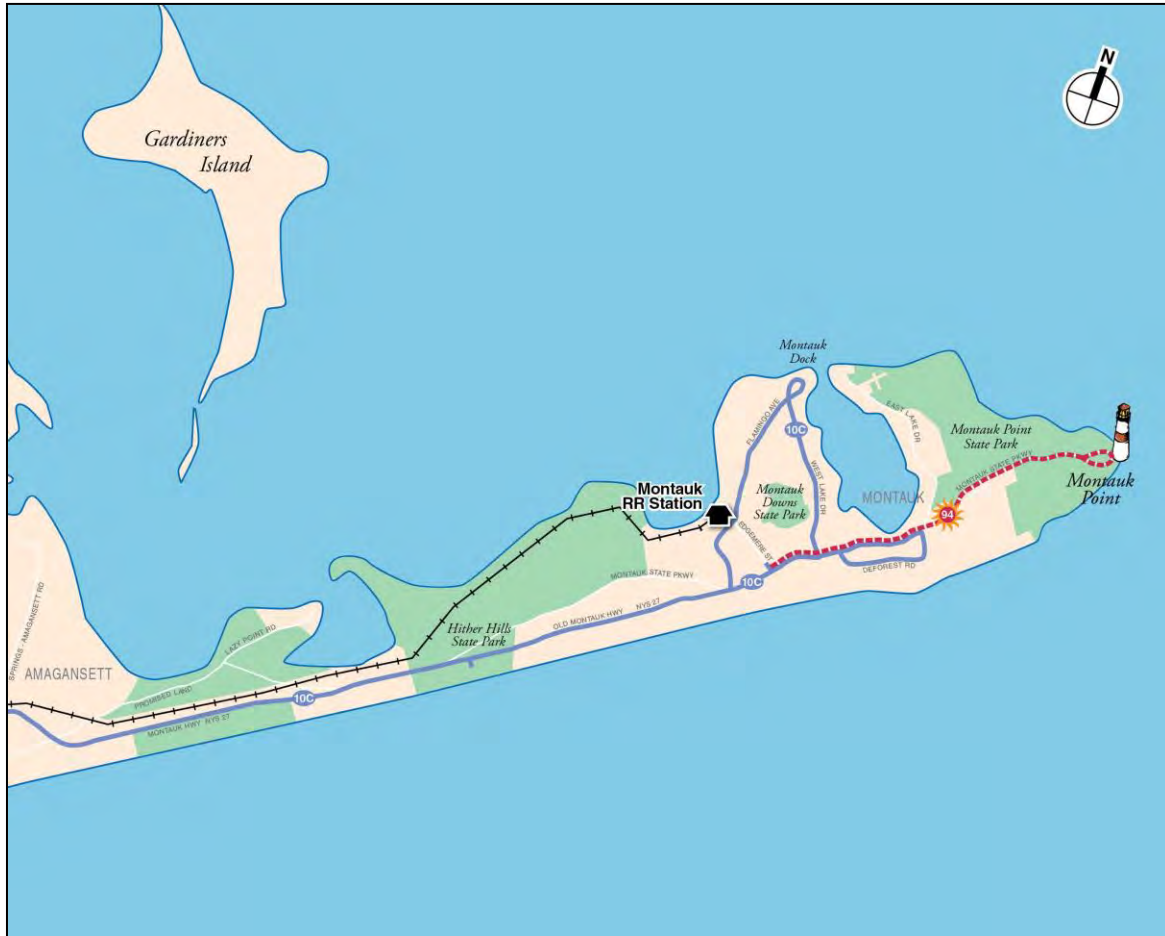


Figure A-35: North-South Connections – Montauk Station

Source: Suffolk County Transit

3.4.8.6. Identified Improvement Proposals: Short Term / Long Term

A short-term enhancement would be the provision of bike racks at the station. Providing an indoor waiting area or walkway canopy would provide some weather protection. The train platform also is located a long distance from the head house and ticket vending machine. Increasing bus service to the station could be a long-term improvement.

3.4.8.7. Summary Comments / Observations – Montauk Station

Less of a bedroom community and more of a resort, Montauk is a seasonal destination that is heavily used during the summer months, particularly on weekends. Few services exist immediately adjacent to the station and little synergy exists between the center of Montauk Hamlet and the commercial district at the harbor. The Montauk Manor Hotel is the only facility that is easily walkable from the train station.

Zone of influence – ½-mile radius

The area located within the ½-mile radius of Montauk Station is predominantly residential (65 percent), although there is a large hotel, the Montauk Manor Hotel, just east of the station (see **Figure A-33**). The remaining area appears to be 10 percent industrial adjacent to the LIRR right-of-way and 25 percent open water.

Zone of influence – 1-mile radius

The broader reach of the one-mile radius from the station encapsulates an even greater percentage of the residential community (80 percent). Though a large percentage of this community is within range of the station, walking distances become prohibitive for most. As a resort destination, many passengers arrive with luggage and require a taxi to reach their final destination. The S10C Bus is the only connecting transit option.

The northern edge of the Montauk Hamlet center is within the one-mile catchment area. The harbor area is located 1.75 miles northeast of the station.

3.4.9. MTA 20-YEAR CAPITAL NEEDS ASSESSMENT

The 20-year needs assessment provides a strategic roadmap for the 2015–2034 capital investments period. It supports ongoing efforts to achieve and sustain a “State of Good Repair” in the various MTA systems and is the precursor to the 2015–2019 Capital Plan for each of its agencies. The 20-year needs assessment addresses specific and important considerations and challenges:

- Core Needs Assessment—MTA agencies examine each asset based on location, age, condition, performance, safety and reliability. Assets include buses, commuter fleet, subway cars, shops/yards/depots, road bridges and tunnels, and 2,078 miles of track. These assets require cyclical investments: acquire or build, operate and maintain, renew or replace.

Major investment categories include: signals and communications (19 percent), bus and rail rolling stock (18 percent), track and structures (15 percent), and stations (12 percent). Emerging priorities include: customer information, new fare payment, and resiliency.

- Constraints – It is important to determine the operational capacity of a system to be able to schedule work and maintain service. Funding limitations will also affect the availability of MTA resources to support project delivery.
- Key 2015–2034 Core Needs—The MTA has dedicated \$105.7 Billion (\$105B) towards the 20-year capital program. Of that, the LIRR will receive \$13.4B (13 percent)

distributed across major programs including: tracks (25 percent), rolling stock (17 percent), stations (15 percent), power (14 percent), communications/signals (11 percent), line structures. (8 percent), shops/yards (4 percent), and miscellaneous (6 percent).

The present 2010–2014 Plan (\$2.314B) has 50 percent of its allocations still uncommitted. Current projections allocate \$621.1 Million (\$621.1M) to East Side Access, Jamaica Capacity Improvement (\$301.7M), and its core infrastructure program committed to \$1.04B including stations, track, signals, communications, power, shops and yards.

Suffolk County is to benefit from the inclusion of the Main Line Double Track project (Phases 1 and 2), the Parking Facility at Wyandanch, and the Mid-Suffolk Storage Yard program.

- Main Line Double Track project—the entire Main Line Double Track project will consist of construction of 13 miles of a second track between Farmingdale and Ronkonkoma. The project consists of two phases:
 - Phase 1 (\$137.2M): Central Islip to Ronkonkoma: Five to seven miles of the double track from Ronkonkoma to just west of Central Islip.
 - Phase 2: Farmingdale to Central Islip: To include new station platforms, retaining walls, underground utilities, and track bed preparation.
- Parking Facility at Wyandanch—Vertical parking structure encompassing grade-level parking plus 4 levels of parking for approximately 900 spaces with future capacity to expand to 1,500 spaces.
- Mid Suffolk Yard (\$76.6M)—Construction of a new electric train storage yard along the Main Line, on the Ronkonkoma Branch.

The long anticipated completion of the Main Line Double Track project and the parking facility in Wyandanch are indicators that there is demand for commuter growth and associated economic growth. These will have significant influence on the growth and economy of Suffolk County.

3.5. FERRY TERMINAL FACILITIES

3.5.1. OVERVIEW

Ferry service between Long Island and Connecticut is available from two ferry terminal sites located in Suffolk County, one in Port Jefferson and other in Orient Point. The Bridgeport-Port Jefferson Ferry travels between Port Jefferson, NY and CT; and the Cross Sound Ferry travels between Orient Point, NY and New London, CT.

High-speed ferry service is also available between Orient Point and New London. A new summer passenger ferry between eastern Suffolk County's North and South Forks (Greenport to Sag Harbor) began operations in June 2012. Other Long Island ferries connect Shelter Island with Greenport and North Haven and (seasonally) Montauk with Block Island, RI, New London, CT, and Martha's Vineyard. An additional ferry serves Fishers Island from New London, CT, and a number of seasonal ferries serve the Fire Island communities. Some of the ferries that cross Long Island Sound carry automobiles, trucks and buses, and passengers.

3.5.2. CURRENT STATE OF EXISTING INFRASTRUCTURE/FACILITIES

Improvements in Ferry Terminal Facilities

- Patchogue – New terminal completed in April 2010 (providing ferries to Fire Island)
- Bay Shore Terminal – Improvements proposed
- Ocean Beach Terminal on Fire Island – To be replaced

3.5.3. CURRENT LEVEL OF OPERATIONS AND SERVICE

3.5.3.1. *Current routes served / ridership data (year round)*

- Port Jefferson – Ferry Terminal (year-round service)
- Orient Point – Ferry Terminal (year-round service)

3.5.3.2. *Current routes served / ridership data (seasonal)*

- Montauk - Montauk Viking (seasonal service)

3.6. FERRY TERMINAL FACILITIES ANALYSIS

The ferry terminal facilities identified in **Table A-5** were selected for site investigation and further analysis:

**TABLE A-5
FERRY OPERATORS – VITAL STATISTICS AS OF DECEMBER 31, 2012**

Transport type	Route miles	Routes	landings	Fixed Route Fleet size	Average Weekday unlinked trips	Geographic Reach
Port Jefferson- Bridgeport Ferry	15	1	2	3	800,000 Annual	Suffolk; Bridgeport CT
Orient Point- New London Ferry	NA	1	2	9	NA	Suffolk; New London CT
Fishers Island Ferry	NA	1	2	NA	NA	Suffolk; New London CT
Shelter Island- North Ferry	NA	1	2	NA	NA	Suffolk
Shelter Island-South Ferry	NA	1	2	NA	NA	Suffolk

Source: NYMTC Plan 2040 Regional Transportation Plan –Sept 4, 2013

3.6.1. BRIDGEPORT AND PORT JEFFERSON STEAMBOAT COMPANY: PORT JEFFERSON TERMINAL

3.6.1.1. Current Level of Operations and Service

Port Jefferson Ferry Terminal

- Field Observation: November 2013
- Address: 102 W Broadway, Port Jefferson, NY (see **Figure A-36**)
- Year Round Passenger and vehicle service to Bridgeport, CT
- Ridership: 1,750 (Daily 2004)
- Station parking: Adjacent Municipal Lots



Figure A-36: Aerial View – Port Jefferson Ferry Terminal

3.6.1.2. Current State of Existing Infrastructure and Facilities

Context

The ferry terminal is centrally located to downtown Port Jefferson, itself on Main Street/Route 25A, the primary commercial thoroughfare in town (see **Figure A-37**). The town Marina is located immediately adjacent to the terminal as are hotels.

The area is predominantly commercial/retail. Numerous metered municipal parking lots can be found behind the shops and restaurants that run along Main Street. Residential neighborhoods surround this downtown district. The entire village center and harbor are easily walkable.

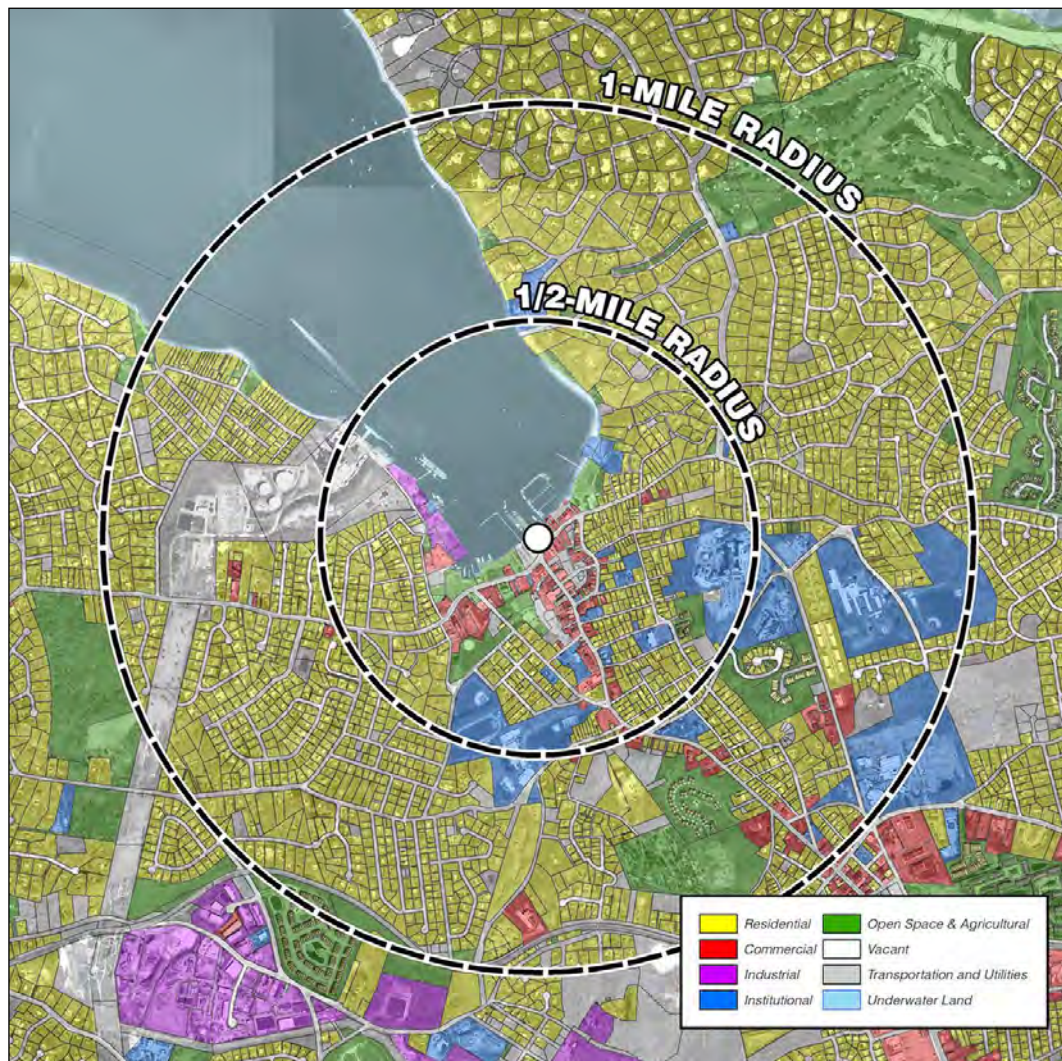


Figure A-37: Land Use and Catchment Area—Port Jefferson Ferry Terminal

History

Ferry service between Port Jefferson, NY and Bridgeport, CT started in 1872. The Bridgeport and Port Jefferson Steamboat Company began operations in 1883. Year-round service began in 1983.



Source: www.portjeff.com

Existing Conditions

The Port Jefferson Ferry Terminal is the Long Island Terminal for the Bridgeport - Port Jefferson Steamboat Company. The current Ferry Terminal building is a two-story structure located at the water's edge in the center of Port Jefferson Village. It includes an indoor waiting area with tables and chairs, vending machines, ATM, bathrooms and a ticket office. There is ample queuing for vehicles awaiting the next ferry departure. No on-site vehicle parking is provided for passengers. Cars must be parked in adjacent municipal lots.



Current daily rates are \$5.00 for residents, \$20.00 for non-residents. Additional metered municipal lots are located behind the shops on both sides of Main street/Route 25A.

3.6.1.3. *Intermodal Connectivity – Port Jefferson Ferry Terminal*

The following buses stop across the ferry terminal along Route 25A: S60, S61, and the S69 (see **Figure A-38**). There are no shelters provided for waiting passengers. The S61 connects to the Port Jefferson LIRR station, 1.4 miles north while the S60, S69, and S76 go to Stony Brook University a few miles west. No bicycle racks are provided.

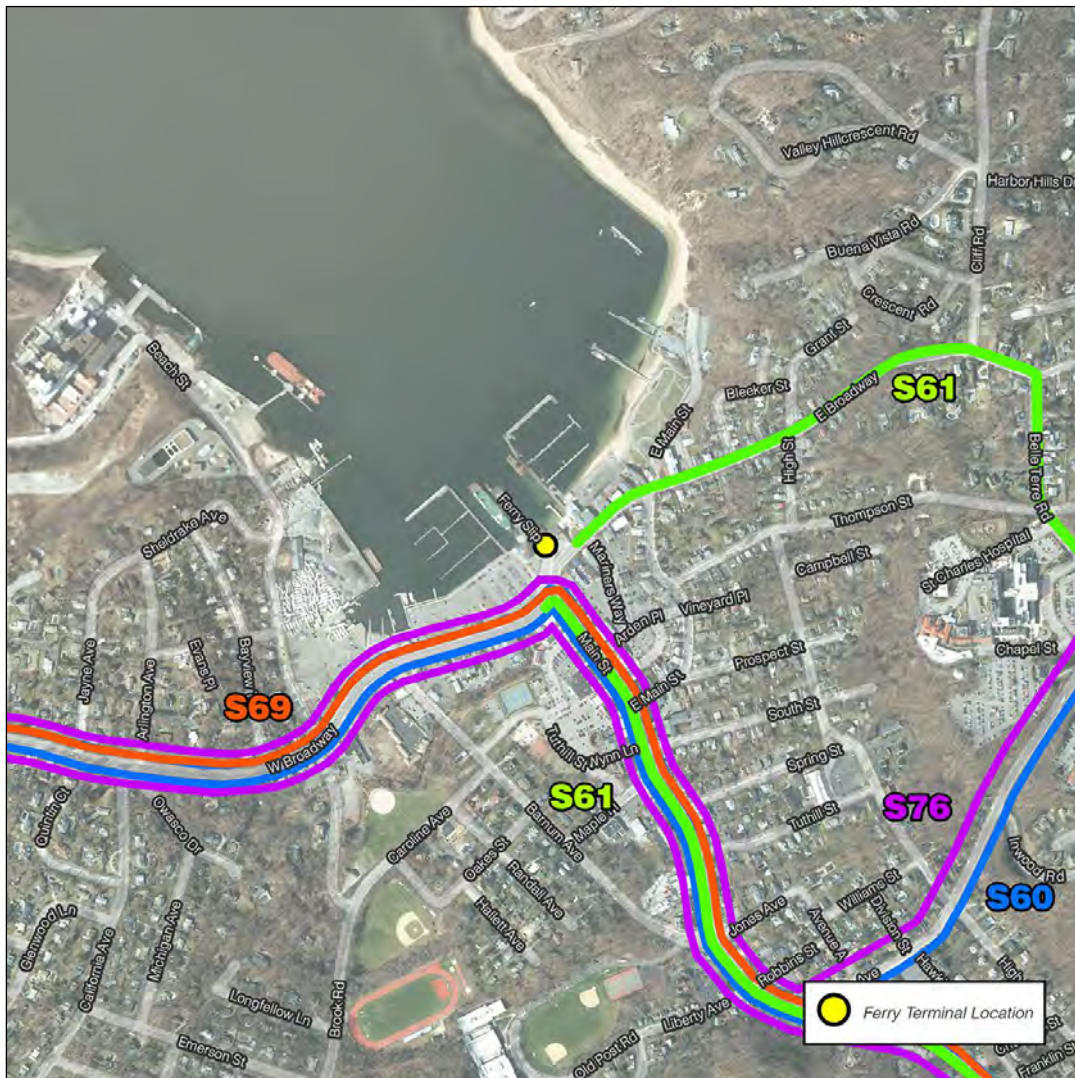


Figure A-38: Connectivity to Infrastructure – Port Jefferson Ferry Terminal

3.6.1.4. Needs and Deficiencies – Port Jefferson Ferry Terminal

**EXISTING CONDITIONS SURVEY –
PORT JEFFERSON FERRY TERMINAL**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	2	Head house	3
Bicycle Racks	0	Proximity - Commercial	3
Bus Stops	2	Proximity - Downtown	3
Canopies	0	Proximity – Industrial	1
Connection - Airport	0	Proximity - Residential	2
Connection - Train	1	Structured Parking	0
Curb Frontage	1	Surface Parking	1
Drop-off Area	1	Taxi Stands	1
Gangways	2	Waiting Area	2

Key:
 0 – Not Applicable 2 – Average
 1 – Below Average 3 – Above Average



- Access to numerous bus routes in Suffolk County: 5A, S60, S61, S69, and S76
- S61 bus connects Port Jefferson with the LIRR Station
- Surface parking at 100 percent capacity
- No bicycle racks provided
- Terminal in center of town
- Southern LI Terminal for Bridgeport-Port Jefferson Ferry
- No gangway canopies or weather protection for pedestrians

3.6.1.5. *North-South Connections – Port Jefferson Ferry Terminal*

North-south connectivity from the Port Jefferson Ferry Terminal is achieved along Route 25A from the village center and to the train station (see **Figure A-39**). Vehicles travel along Route 112 south to Patchogue. Three bus routes connect the Port Jefferson harbor/village center with points south, including the S60, S61, and S69. Two of those lines (S60 and S69) continue to Stony Brook University. Two go south to Coram (S60 and S61) and one to Patchogue (S61), while the other (S69) continues southwest to the Smith Haven Mall. A Proposed Nicolls Road BRT line would connect Stony Brook University with the Ronkonkoma Hub and the Village of Patchogue.

3.6.1.6. *Identified Improvement Proposals: Short Term and Long Term*

A short-term enhancement to commuter use would be the provision of a bus shelter adjacent to the ferry Terminal on Route 25A. Providing bike racks at the terminal would encourage smart growth principles to be applied and engage residents with downtown.

As a long-term consideration, a bus shuttle to the Port Jefferson station could be evaluated. This would improve connectivity and convenience as well as provide residents with the option to take the shuttle service in lieu of driving their cars. The adjacency of the train station to



Figure A-39: North-South Connections – Port Jefferson Ferry Terminal

Source: Suffolk County Transit

the ferry terminal in Bridgeport makes through connections to Newport and Boston most convenient. Better connections from Long Island's rail system to the ferry terminal would better enhance north south connections to New England.

3.6.1.7. *Summary Comments / Observations – Port Jefferson Ferry Terminal*

Zone of influence – ½-mile radius

The Port Jefferson Ferry Terminal is well placed within this mixed residential/commercial neighborhood (see **Figure A-37**). Within the ½-mile radius catchment, 40 percent of the area is residential, 40 percent commercial and the remaining 20 percent is dedicated to industrial and waterfront related activities. Walking to the terminal is an option given the numerous sidewalks and the presence of a well defined retail center acting as a destination.

Zone of influence – 1-mile radius

The one-mile radius scribes an even greater residential community. Over 70 percent of the area is dedicated to housing. Commercial and industrial developments represent the remaining land use. Within this catchment one can find the St. Charles and the Mather Hospitals.

Intermodal connections exists to the Port Jefferson train station, about 1.25 miles from the ferry terminal. Bus routes run along the Route 25A/112 connecting these centers. The level of service is infrequent discouraging more regular use. Taxis park at the terminal add another layer of intermodal connectivity for the residents. Cycle paths could support additional connectivity between these destination points given their proximity.

Downtown

Downtown Port Jefferson is within walking distance of the ferry terminal thus benefitting from the influx of ferry riders looking to engage with the variety of commercial venues offered. This commercial center remains relevant and vibrant given its ease of access by multiple transportation services, as well as a lack of immediate competition from big box retail centers. There appears to be a healthy relationship between these various components and the surrounding residential community.

3.6.2. *ORIENT POINT FERRY TERMINAL*

3.6.2.1. *Current Level of Operations and Service*

Orient Point Ferry Terminal

- Field Observation: November 2013 / August 2014
- Address: 41270 Main Road Orient, NY (see **Figure A-40**)

- Year Round Passenger and vehicle service to New London, CT
- Ridership: Not Available
- Station parking: Adjacent unpaved lot



Figure A-40: Aerial View – Orient Point Ferry Terminal

3.6.2.2. *Current State of Existing Infrastructure and Facilities*

Context

The Orient Point Ferry Terminal is located on Route 25A at the eastern end of Long Island's North Fork. The region is sparsely populated, consisting of residential homes, mostly seasonal, as well as a county park, a small marina, and two restaurants (see **Figure A-41**). Route 25A is the sole access road to the Terminal. The Terminal is located three miles east of the hamlet of Orient and nine miles east of the town center of Greenport.



Figure A-41: Land Use and Catchment Area – Orient Point Ferry Terminal

History

Steamship service between the North Fork and Connecticut began in 1844 and ran from the LIRR terminal in Greenport to a terminal in Stonington, CT, where a train would await to board passengers destined to go to Boston and other points in New England.

Today, Cross Sound Ferry operates a year round service from Orient Point, NY, to New London, CT, for passengers and vehicles. They also offer a high-speed ferry services between these two points.

Existing Conditions



The Orient Point Ferry Terminal is the New York terminus for the New London-Orient Point Cross Sound Ferry. The terminal provides indoor seating, restrooms and a ticket office and appears to be ADA accessible. The terminal itself is a fair distance from the ferry slips and offers no weather protection for pedestrians making the travel.

Parking is provided on a gravel lot adjacent to the terminal. There is limited parking during peak season travel times; the lot is often filled to capacity resulting in cars parked on the shoulder of Route 25A. The area for vehicle queuing is paved and is adequate to handle the number of cars waiting to board the ferry.

3.6.2.3. *Intermodal Connectivity – Orient Point Ferry Terminal*

The Orient Point Terminal provides connections to the Suffolk County Transit bus S92 and the privately operated Hampton Jitney (see **Figure A-42**). Taxis can occasionally be found here, but there is no taxi dispatch.

Access to the LIRR station in Greenport requires a nine mile bus or taxi ride. The Connecticut Terminal in New London has adjacent access to an Amtrak station, allowing access to points in New England.



Figure A-42: Connectivity to Infrastructure - Orient Point Ferry Terminal

Source: Suffolk County Transit

3.6.2.4. Needs and Deficiencies – Orient Point Ferry Terminal

**EXISTING CONDITIONS SURVEY –
ORIENT POINT FERRY TERMINAL**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	2	Head house	3
Bicycle Racks	0	Proximity - Commercial	1
Bus Stops	2	Proximity - Downtown	0
Canopies	0	Proximity – Industrial	1
Connection - Airport	0	Proximity - Residential	2
Connection - Train	1	Structured Parking	0
Curb Frontage	1	Surface Parking	2
Drop-off Area	1	Taxi Stands	0
Gangways	2	Waiting Area	2
Key: 0 – Not Applicable 2 – Average 1 – Below Average 3 – Above Average			



- Access to Suffolk County bus route S92 and Hampton Jitney
- S92 bus connection from Greenport – LIRR Station
- Surface parking is at a low elevation adjacent to sea water
- Parking is inadequate during peak season
- No bicycle racks present
- Terminal in a remote location
- No gangway canopies or weather protection for pedestrians
- No concession services on site for passengers
- No taxi dispatch
- No bus canopy / shelter

3.6.2.5. North-South Connections – Orient Point Ferry Terminal

North-south and west connectivity from the Orient Point Ferry Terminal is achieved along Route 25A. Route 25A is the only road access to the terminal (see **Figure A-43**). The Orient Point Terminal provides connections to the Suffolk County Transit bus route S92 and the Hampton Jitney. The ferry terminal in New London is adjacent to Interstate Route 95.

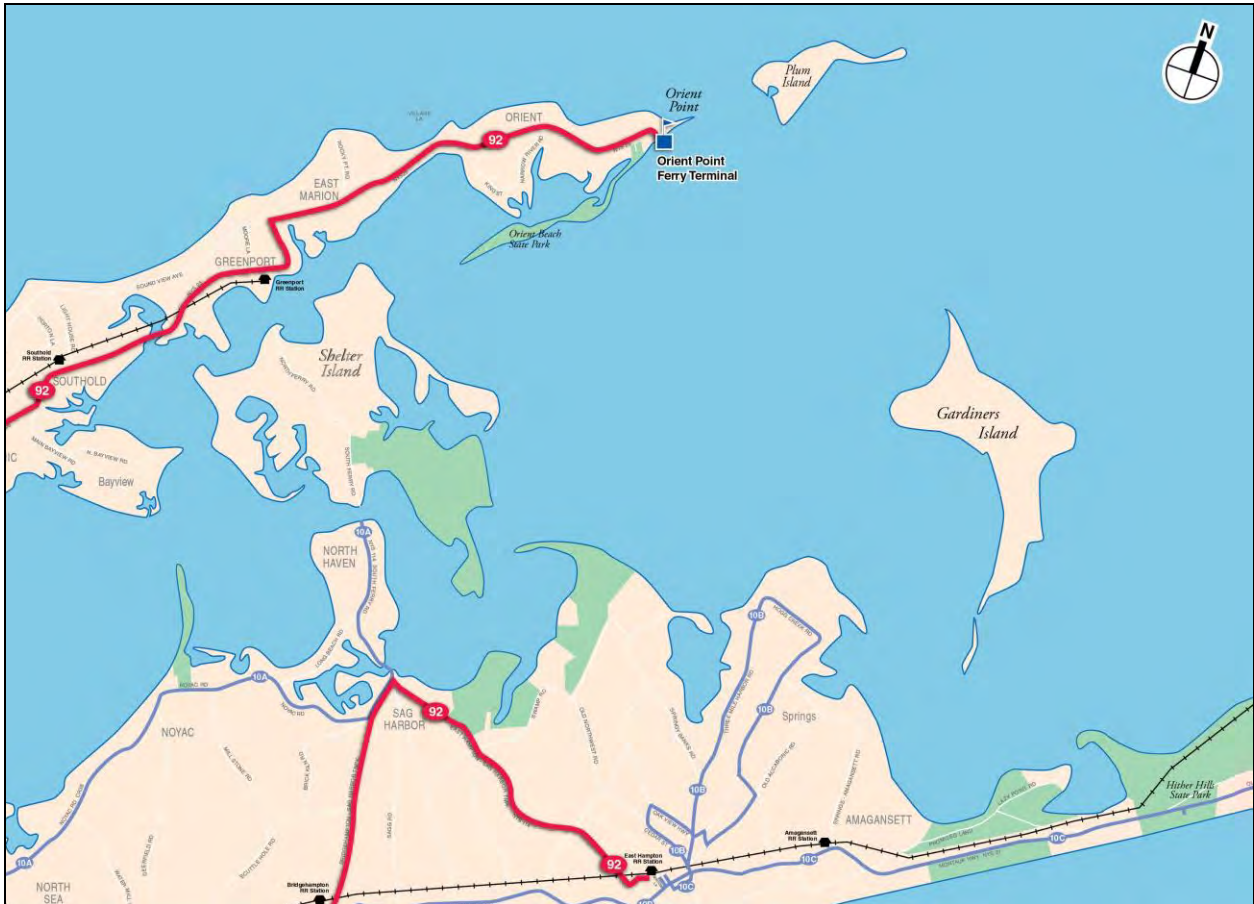


Figure A-43: North-South Connections – Orient Point Ferry Terminal

Source: Suffolk County Transit

3.6.2.6. Identified Improvement Proposals: Short Term and Long Term

A short-term enhancement of the commuter experience would be to provide a bus shelter adjacent to the ferry. Another short-term enhancement would be the provision of bike racks at the station.

Long-term improvements may include scheduled bus shuttle services to the Greenport station. The adjacency of the train station to the ferry terminal in New London makes through

connections to Newport and Boston convenient. Better connections from the LIRR station to the ferry terminal would improve north-south connectivity, as well as access to New England.

3.6.2.7. Summary Comments / Observations – Orient Point Ferry Terminal

Zone of influence – ½-mile radius

This catchment area is defined by single-family homes, two seasonal restaurants, county parks, and a small boat marina (see **Figure A-41**). Other than the seasonal restaurants, there appears to be little connection between the terminal and adjacent land uses.

Zone of influence – 1-mile radius

Given the geography of the region, the area located beyond the half-mile radius is predominately open sea.

Downtown

The Orient Point Ferry Terminal is over 3 miles from downtown Orient and almost 10 miles from Greenport. As such, the terminal has little influence on either commercial center.

3.6.3. MONTAUK VIKING FERRY

3.6.3.1. Current Level of Operations and Service

Montauk Ferry Terminal

- Field Observation: August 2014
- Address: 462 West Lake Drive, Montauk, NY (see **Figure A-44**)
- Seasonal passenger service to New London, CT; Block Island, RI; and Martha's Vineyard, MA
- Ridership: Not Available
- Station parking: Adjacent Surface Lot



**Figure A-44: Aerial View –
Montauk Viking Ferry Terminal**

3.6.3.2. *Current State of Existing Infrastructure and Facilities*

Context

The Montauk Viking Ferry is located on Route 77 (West Lake Drive). Facilities include the Viking Fleet office building, a parking lot, and dock. There is a small covered waiting area for passengers on the east side of the building facing the dock. The Ferry is located on the north shore of Lake Montauk. The area immediately surrounding the dock is primarily commercial (see **Figure A-45**).



Figure A-45: Land Use and Catchment Area – Montauk Viking Ferry Terminal

Existing Conditions

The Montauk Viking Ferry offers limited service to Block Island, RI from the end of May to the beginning of June. Daily service to Block Island begins in mid-June and ends in mid-September. Limited service is available in the fall from the end of September to mid-October.



The terminal building is a two-story structure located on the water's edge on the north end of Montauk Harbor located on Lake Montauk. The building contains a ticket booth and an outdoor covered waiting area facing the water. There is vehicle parking provided for passengers across the street from the terminal building. Daily parking passes are available and cost \$10.00 per day.

3.6.3.3. *Intermodal Connectivity – Montauk Viking Ferry Terminal*

The Montauk Ferry dock is easily accessible from Route 27 by automobile or by bus from the Hampton Jitney, a private bus service. The dock also is serviced by bus route 10C (see **Figure A-46**).

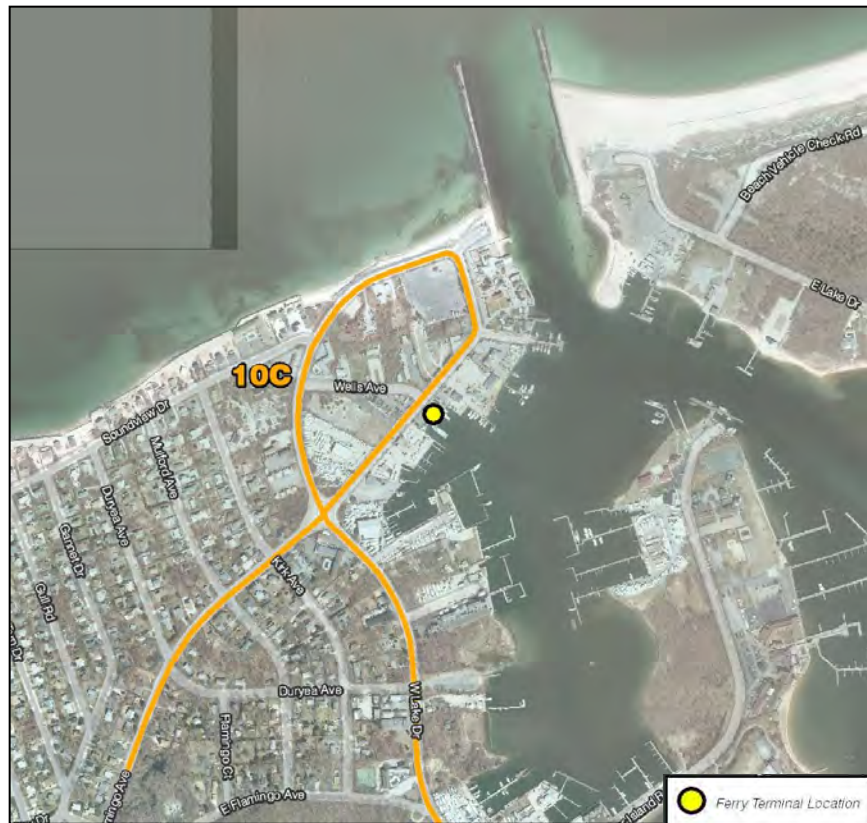


Figure A-46: Connectivity to Infrastructure – Montauk Viking Ferry Terminal

3.6.3.4. Needs and Deficiencies – Montauk Viking Ferry Terminal

**EXISTING CONDITIONS SURVEY –
MONTAUK VIKING FERRY TERMINAL**

CATEGORY	RATING	CATEGORY	RATING
ADA Accessibility	2	Head house	0
Bicycle Racks	0	Proximity - Commercial	2
Bus Stops	1	Proximity - Downtown	2
Canopies	2	Proximity – Industrial	2
Connection - Airport	0	Proximity - Residential	3
Connection - Train	1	Structured Parking	0
Curb Frontage	2	Surface Parking	2
Drop-off Area	2	Taxi Stands	0
Gangways	2	Waiting Area	2

Key:
 0 – Not Applicable 2 – Average
 1 – Below Average 3 – Above Average

- Access to Suffolk County bus route 10C and Hampton Jitney
- No bicycle racks present
- No bus canopy/shelter

3.6.3.5. North-South Connections – Montauk Viking Ferry Terminal

North-south and west connectivity from the Montauk Viking Ferry Terminal is achieved along Routes 49 and 77. Route 77 is the only road access to the terminal. The Suffolk County Transit bus route 10C and the Hampton Jitney provide connections to the Montauk Viking Ferry Terminal.



Figure A-47: North-South Connections – Montauk Viking Ferry Terminal

3.6.3.6. *Identified Improvement Proposals: Short Term and Long Term*

A short-term enhancement of the commuter experience would be to provide a bus shelter and bike racks adjacent to the ferry terminal building.

Long-term improvements may include better connections from the Montauk LIRR station to the ferry terminal building and would improve north-south connectivity.

3.6.3.7. *Summary Comments / Observations – Montauk Viking Ferry*

Ferry service from Montauk Point is important to regional tourism, providing connections to island vacation destinations. In addition, the ferries from this location offer recreational fishing and whale watching trips, as well as private charters.

Zone of influence – ½-mile radius

This catchment area contains primarily commercial uses such as restaurants, a bank, an inn, and charter boat businesses adjacent to the ferry terminal, as well as residential uses further from the dock and some beach areas north of the dock (see **Figure A-45**).

Zone of influence – 1-mile radius

The area located in the one-mile radius contains primarily residential and open spaces uses, including beaches, vegetated areas southwest of the ferry terminal, and Montauk Point State Park east of the ferry terminal.

3.7. AIRPORT FACILITY CONDITIONS AND DEFICIENCIES (COMMERCIAL/GENERAL AVIATION)

3.7.1. OVERVIEW

Suffolk County's aviation needs are served by 15 airport facilities ranging from the grass strip equipped Bayport Aerodrome to Islip's MacArthur Airport handling over 2 million passengers annually. The 15 airports operating in Suffolk County are shown in **Table A-6** and mapped on **Figure A-48**. Table A-6 also identifies the type and volume of operations that occur at each airport (commercial/general aviation/air taxi/military), as well as providing information on the number of runways at each facility. MacArthur is the only airport in Nassau or Suffolk County with regularly scheduled commercial flights.



Figure A-48: Regional Airports Serving Suffolk County

**TABLE A-6
AIRPORT OPERATIONS (EXCLUDES FIELDS AND HELIPORTS)**

CITY	FACILITY NAME	OPERATIONS COMMERCIAL	OPERATIONS AIR TAXI	OPERATIONS GA LOCAL	OPERATIONS GA ITINERANT	OPERATIONS MILITARY	RUNWAYS
Bayport	Bayport Aerodrome			10,000	250		
Calverton	Calverton Executive Airpark						1
East Hampton	East Hampton		15,110	6,000	10,452	50	
East Moriches	Lufker			2,000	500		
East Moriches	Spadaro			6,000	100		
Farmingdale	Republic	129	9,595	91,620	107,007	341	2
Fishers Island	Elizabeth Field		1,100	500	500	25	
Mattituck	Mattituck		200	8,000	4,000		
Montauk	Montauk		5,000	18,763	6,598		
New York	Long Island MacArthur	11,318	5,622	68,807	51,325	3,160	3
Orient	Rose Field						
Riverhead	Talmage Field						
Shelter Island	Westmoreland						
Shirley	Brookhaven			49,000	11,000	100	
Westhampton	Francis S. Gabreski			40,059	204,489	13,197	3

Source: Federal Aviation Administration Airport Facilities Data and Airport Emergency Plan

The more active general aviation airports in Suffolk County include Brookhaven Airport, Francis S. Gabreski Airport, Montauk Airport, and Republic Airport. Because there are no general aviation facilities located in Nassau County, Republic Airport serves the GA client base of Nassau, the five boroughs, and portions of Suffolk County. Republic’s location is a major factor in the over 90,000 GA operations indicated above.

3.7.1.1. Current Levels of Operations and Deficiencies (Commercial/General Aviation)

Three facilities were selected for site investigations and further analysis based on the following criteria:

- Republic Airport: Largest catchment area including Suffolk County, Nassau County, and New York City’s five Boroughs; largest annual general aviation operations
- MacArthur Airport: Suffolk County’s only commercial airport
- Gabreski Airport: The only airport owned and operated by Suffolk County; serving as a general aviation facility, as well as home to the Air National Guard’s 106th Rescue Wing

Existing Facilities

The following sections indicate the results of the inventory and data collection efforts which identified the following:

- General Level of annual operations including trends over the past five years
 - General Aviation versus Commercial Aviation
 - General Location
- Adjacent Properties Usage
 - General State of Facilities: Passenger Terminals; Support Facilities; Surface Parking; Structured Parking (if applicable)
 - Connectivity/Access issues
 - Access to alternative transportation/mass transit options
- Proximity and access to Rail Stations, Public / Private Bus stops, and Taxi Service
 - Identified Capital Improvement Programs: Short Term and Long Term
 - Interface with Local Community

Identifying Requirements for Improved Intermodal Connectivity

Existing methods of intermodal connectivity were identified for each of the three airport facilities analyzed. Although customer surveys were not available, the airport directors interviewed during this process indicated that private automobiles were the predominant means by which their customers travel to and from the airport facilities. This is due to a lack of reliable transit options, as well as Suffolk County residents' general dependence upon their private cars.

The ground transportation needs of commercial versus general aviation airport user groups can differ significantly. A Southwest airlines passenger, initially attracted by low airfares, might be inclined to utilize the LIRR to travel to and from the airport, avoiding the potential delays inherent on Long Island's congested highways. In contrast, a Cannon corporate manager traveling beyond the metropolitan area for an overnight business trip would opt for private or rental car usage. Given the current level of service provided, neither the public bus nor commuter train would provide the ease, reliability, or speed required by busy, corporate travelers.

Typically, a general aviation airport's customer base is made up of either corporate business travelers with time constraints and business accounts or private/partial jet owners representing a very affluent user group. Neither of these user groups is inclined to choose mass transit

3.7. AIRPORT FACILITY CONDITIONS AND DEFICIENCIES (COMMERCIAL/GENERAL AVIATION)

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Fishers Island	Elizabeth Field		1,100	500	500	25	
Mattituck	Mattituck		200	8,000	4,000		
Montauk	Montauk		5,000	18,763	6,598		
New York	Long Island MacArthur	11,318	5,622	68,807	51,325	3,160	3
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Riverhead	Talmage Field						
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Typically, a general aviation airport's customer base is made up of either corporate business travelers with time constraints and business accounts or private/partial jet owners representing a very affluent user group. Neither of these user groups is inclined to choose mass transit

options such as public bus service or commuter rail lines for their connections either to or from the airport.

Heliports

Southampton Heliport in Suffolk County is one of two metropolitan area heliports outside of New York City with 400 flights during the 2009-2010 year. Private heliport use in Suffolk County includes the Cablevision facility.

3.7.2. TERMINAL FACILITIES: MACARTHUR AIRPORT

3.7.2.1. Overview

The Town of Islip owns and operates Long Island MacArthur Airport, which is a public airport located in Ronkonkoma, Town of Islip, Suffolk County, 50 miles east of New York City (see **Figure A-48 in Section 3.7.1.**). More than 5,000 people fly via MacArthur Airport each day, making it one of the top 90 public airports in the United States.

Located between Montauk Point 67 miles (108 km) to the east and Manhattan 50 miles (71 km) to the west, MacArthur Airport serves primarily the three million residents of Nassau and Suffolk counties. In addition, the airport serves travellers from the Greater New York Metropolitan Area and around the nation who want a more convenient alternative to the congestion at John F. Kennedy International Airport (JFK) and LaGuardia Airport (LGA)—both located in Queens. The Federal Aviation Administration (FAA) designated MacArthur Airport an Official Metro Airport in early 2011, meaning it is now grouped with LaGuardia, JFK, and Newark in travel and informational searches for New York airports, providing better exposure to the traveling public. MacArthur Airport, which does not share the congested air space of the city-centric airports, also has an exceptional record of on-time performance. During 2009, for instance, 83.6 percent of flights arrived on time and 85.6 percent of flights departed on time.

MacArthur Airport is approximately 1 mile south of the Ronkonkoma Branch of the LIRR and has a dedicated shuttle to connect the airport to the rail line. MacArthur Airport covers an area of 1,311 acres and contains four runways and two helipads (see **Figure A-49**). The airport serves approximately two million commercial passengers a year, as well as serving an active general aviation sector. The Department of Aviation is led by the Commissioner of Aviation and Transportation, who works closely with the Islip Town Board to manage and steward the airport. Departments include Airport Operations, Custodial, Fire Rescue, Law Enforcement, Maintenance, and Public Affairs.



Figure A-49: Aerial View – MacArthur Airport

Land uses in the area surrounding the airport include (see **Figure A-50**):

- North—LIRR Ronkonkoma station and residential
- South—Commercial office
- East—Residential
- West—General aviation support, commercial, industrial

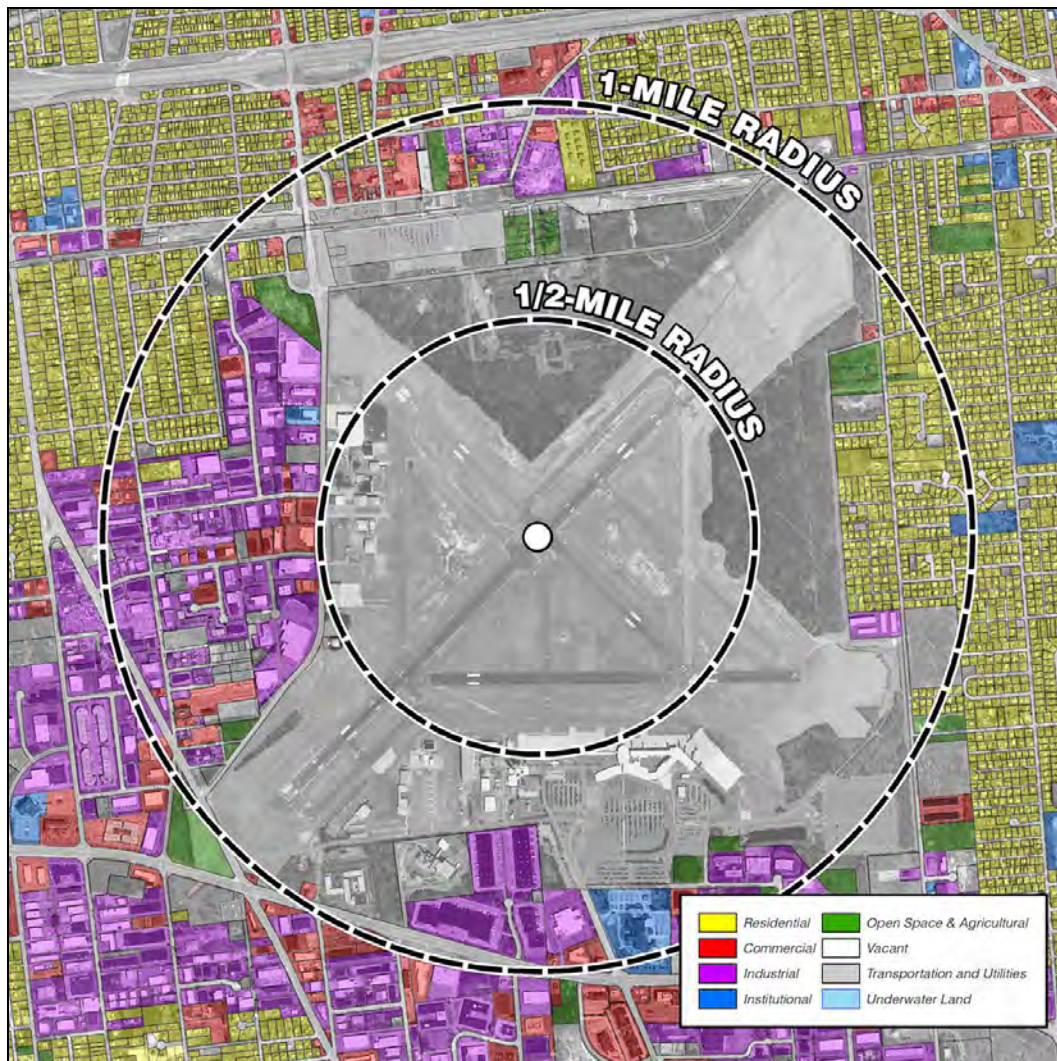


Figure A-50: Land Use – MacArthur Airport

Access to MacArthur Airport is provided via the following (see **Figure A-51**):

- North South—Route 93 Lakeland Ave. and Route 29 Smithtown Road
- East West—Route 454 Veterans Memorial Highway; connects to I-495 and Sunrise Highway
- LIRR—Ronkonkoma Station; bus route S57



Figure A-51: Connectivity to Infrastructure – MacArthur Airport



3.7.2.2. *MacArthur Airport History*
 In April 1942, four months after the bombing of Pearl Harbor, the Town of Islip entered into contract with the federal government to build an airfield on Town-owned land for potential military purposes during World War II. Within months, the Civil Aeronautics Administration, the predecessor to

today's FAA, funded construction of three paved runways. Originally named Islip Airport, the airport was renamed MacArthur Airport, after General Douglas MacArthur, then General of the Army, at the suggestion of Charles H. Duryea, a local elected official.

In 1944, Lockheed Aircraft Corporation built the first hangar at the airport. Five years later, the Town of Islip built the airport's first terminal building, which prepared the way for commercial service. Throughout the 1950s, the Sperry Corporation conducted aerospace research at the airport.

In 1960, Allegheny Airlines (AL) was the first commercial airline to offer scheduled flights from the field to Boston, Philadelphia, and Washington. The March 1961 Official Airline Guide shows five weekday Convair departures: a nonstop to Washington National; one to Baltimore; and three flights making two or three stops to Boston. The General Douglas MacArthur Terminal was completed in 1966; in 1967 Mohawk started two FH227 flights a day to Bridgeport and Albany and beyond (one continued to Toronto). A few years later American Airlines began non-stop flights to Chicago.

3.7.2.3. *Level of Operations and Service*

In the 50 years since Long Island MacArthur Airport introduced scheduled air service, the airport has become a major transportation hub and an economic engine in the region. Although several airlines have discontinued service over the years, during the decade between 1999 and 2009 passenger traffic grew, with the airport serving about two million passengers a year on its two commercial carriers: Southwest Airlines and US Airways Express.

MacArthur Airport has experienced significant fluctuations in activity over the past decade. Continental Express and Continental Connection offered non-stop flights to Albany and Cleveland, but discontinued service in 2005. Spirit Airlines had scheduled service to several Florida cities and Detroit before they moved their New York business to LaGuardia



Airport in 2001; in May 2008 the airline resumed service to Fort Lauderdale from MacArthur only to discontinue it shortly thereafter. Delta Express, which offered non-stop flights to Orlando and Fort Lauderdale, discontinued service at MacArthur Airport in 2003, after experiencing a decline in passenger traffic. Delta Connection to and from Atlanta ended on May 1, 2008, following a mid-April announcement that Delta and Northwest Airlines were planning to merge, which led to significant operational changes for the merged airline.

Currently, there are four commercial airlines operating out of MacArthur Airport: Southwest Airlines (currently operating daily, direct flights to Baltimore-Washington International, and as of December 2013 non-stop daily service to several Florida cities including: West Palm Beach, Fort Lauderdale, Orlando, and Tampa—with connecting service to more than 40 destinations covering the continental United States, the Caribbean and Mexico); USAirways Express, the only legacy carrier left at MacArthur (U.S. Airways Express has been operational at MacArthur Airport for more than 50 years and currently offers daily, non-stop service to Philadelphia and Washington Reagan—begun in March 2012) with connections to more than 800 destinations worldwide); Penair (offering daily, non-stop service to Boston); and beginning in December 2013, Allegiant Air (with service to Punta Gorda/Ft. Myers, Florida).



Current annual enplanements total approximately 750,000 and this number is projected to increase (see **Table A-6**). Commercial activity has decreased since 2006 when Southwest Airlines significantly reduced their operations at MacArthur. At the height of Southwest Airlines presence at the airport, MacArthur Airport expanded and renovated to provide a total of 13 contact gates and greatly expanded holdroom and ticketing facilities. Southwest currently utilizes 2.5 out of the 13 contact gates at the facility.

Table A-7 shows MacArthur's annual enplanements in 2010 and 2011 in comparison to other New York State regional airports, such as Westchester County and Stewart International, as well as major metropolitan airports, including JFK and LGA. In each of these years, MacArthur Airport accounted for less than 2.5 percent of the total enplanements of the five New York State airports indicated. During the period of 2009-2010, while other metropolitan airports

were experiencing increases in annual enplanements, MacArthur experienced significant decreases in activity.

**TABLE A-7
ENPLANEMENTS AT SELECTED AIRPORTS**

AIRPORT FACILITY	2010	2011
Long Island MacArthur	858,741	781,396
Westchester County	999,752	972,385
Stewart	201,684	209,966
JFK	22,927,237	23,664,832
LGA	12,001,501	11,989,227
Total	36,988,915	37,617,806
	PERCENT CHANGE	
AIRPORT FACILITY	2009-2010	2010-2011
Long Island MacArthur	-8%	-9%
Westchester County	4%	-3%
Stewart	2%	4%
JFK	1%	3%
La Guardia	8%	0%
Total	3%	2%
Note: Enplanements are the total number of passengers boarding an aircraft for a one-way trip.		
Source: Table prepared by, Peter Lambert, 3/5/13		

With significant decreases in commercial activity, MacArthur's management is working to attract airlines utilizing smaller aircraft to fill planes bound for Chicago. The airport management has also reached out to new corporations headquartered on Long Island in order to call attention to the benefits of utilizing MacArthur to serve their flying business executives. In addition, the airport has instituted several non-aviation ventures including 'Autoplane,' which provides a drop-off service for passengers boarding flights to Florida; transporting their cars to Florida within 24 hours (via trailers).

General aviation activity has increased significantly over the past few years. To address this increased demand, new hangars and facilities are under consideration.

MacArthur Airport's largest tenants are:

- Southwest Airlines
- Fixed Base Operators :
 - Sheltair

- Mid-Island Air Service
- Hawthorne Global Aviation Services
- Air National Guard

Non-Aviation Tenants include:

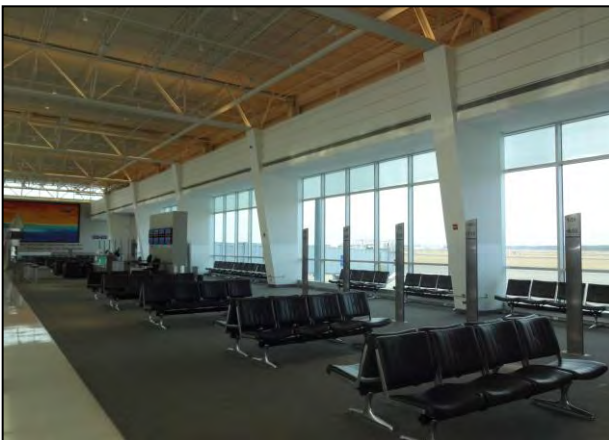
- Clarion Hotel
- Compost Site

There is a Foreign Trade Zone (owned by the Town of Islip) on airport property. With nearby access to major rail and roadways, the 52-acre zone is Long Island's only authorized site where foreign and domestic merchandise is considered to be international commerce. With the duty-free policy for merchandise imported into this zone, there is currently a 95 percent occupancy rate.

3.7.2.4. Existing Facilities and Airport Property

Main Passenger Terminal

The main passenger terminal at MacArthur is an amalgam of decades of terminal construction and renovation programs. Remnants of the original 1940's facility reside adjacent to 20-year-old 'temporary' trailer holdroom construction. Most recently, a major upgrade and expansion program was implemented in 1999 with the introduction of increased Southwest service from MacArthur. Ticketing and a new wing providing security checkpoints, circulation areas, airside concessions and holdrooms were added. Temporary holdroom facilities (which remain in use) were constructed utilizing mobile trailers.





The current airport administration has brought a new Long Island-themed concessions program to the landside public areas. In addition, a local radio station is now housed within the Baggage Claim area, another step in providing visibility to the airport.

Parking Lots

At the height of operations in 2006, the existing parking fields were frequently full to capacity. At the current reduced level of operations, this is no longer the case and the parking lots are only partially utilized. The resident lot (where incentives are provided to local residents in the form of reduced parking fees) is owned and operated by the airport which is in the process of increasing the parking fees in order to fund a much needed repair program. The majority of the parking lots are owned and operated by a third party and are in a very poor state of repair.

All of the commercial aviation terminal facilities appear to be underutilized with decreased activity at the facility.

Recent Capital Improvements

The past five years have seen significant investment in infrastructure improvements at the airport; a new control tower was completed in 2010, replacing the outdated tower built in the early 1960's. A new state-of-the-art Fuel Farm which will increase the airport's jet fuel supply was completed in 2011.

Recent improvements at the passenger terminal include the following:

- New overhead canopies along the passenger drop off/pick-up curbs and roadways
- New passenger terminal Long Island-themed concessions (formerly, there was no concessions program at the airport)

- New U.S. Customs biometric facility under construction, which will provide federal inspection services for pre-cleared flights from Aruba, the Bahamas, and Ireland (approximately 300-500 general aviation flights)
- Consolidated taxi stand in Arrivals Hall providing shuttle service to and from the LIRR station

3.7.2.5. Existing Intermodal Connections

Taxi Connections

Located just outside of the Arrivals Level baggage claim, Village Taxi has an on-site representative to assist passengers moving from the terminal to the taxi stand. Village Taxi also offers travelers a \$5 shuttle ride to the Ronkonkoma Station of the LIRR, which is located just north of MacArthur Airport.

LIRR Connections

The LIRR has one of its main hubs—the Ronkonkoma Station—located just 1.5 miles north of MacArthur Airport. Hourly train service is provided to and from New York City. The LIRR currently offers a discount package for airport passengers, which includes the cost of shuttle service between the train station and airport terminal.

LIRR access to MacArthur Airport is limited by the current single track on the Ronkonkoma Branch. Due to weekday rush hour service requirements between 5 PM and 7 PM in the opposite direction, there are no westbound trains on the Ronkonkoma Branch during this period. Customers leaving the airport during this time period may elect to take a private taxi to the more remote Sayville Station.

The completion of Phase 2 of the LIRR Double Track program will significantly improve rail access to and from MacArthur Airport. The introduction of the second track will provide service at 30-minute intervals. The LIRR has determined that this increase in service (both eastbound and westbound) is the ‘tipping point’ for airport users’ choice in opting for mass transit over private car use.



Bus Connections

MacArthur Airport has several different bus services available to customers looking to continue on to local destinations:

- Suffolk County bus route S57 serves the airport, connecting it with Sayville and the Smith Haven Mall, located in Lake Grove, NY.
- The luxury commuter bus service to New York City, 7BUS, has a local stop minutes from the airport at the Courtyard by Marriott, 5000 Express Dr. S., Ronkonkoma, NY. 7BUS operates 13 trips per day to and from the East Side of New York City from the Marriott.
- Called the Islip Airport Connection, the Hampton Jitney's Westhampton and Montauk lines stop along the Long Island Expressway (Interstate 495) at Exit 60, which is a short cab ride away from the airport terminal.

On-Site Car Rental

Five national rental car companies (Avis, Budget, Enterprise, Hertz, and National) serve the airport. Many hotels in the surrounding area also provide shuttle service to and from the airport, including the Holiday Inn.

3.7.2.6. *Capital Improvement Plans for the Future*

Capital Improvement projects included in the ACIP 5-Year Plan include:

- Relocate Western Section of T/W S Including Relocating Service Road - Construction
- Extend T/W W to T/W A – Construction
- Replace Airfield Electrical Vault – Construction
- Construct ARFF Facility
- EA for Runway 15R-33L Extension (Contingent upon Airport Master Plan approval)
- Design RWY 15R-33L Extension (Contingent upon Airport Master Plan approval)
- Runway 15R-33L Extension (Contingent upon Airport Master Plan approval)
- Rehabilitate Runway 6-24

The following projects will all be subject to approval based on the Airport Master Plan:

- Design and Construct EMAS RWY 24
- Runway 15R-33L extension as listed above
- Runway 6-24 extension (post planning period)
- Terminal Expansion or Terminal Relocation to North Side of the Airport
- Decommissioning and conversion of Runway 10-28 to Taxiway Sierra—Conversion of Taxiway Sierra to Non-Movement Area Ramp

- Intermodal Connection to LIRR from Main Terminal
- East Side General Aviation Development

Additional potential capital improvement plans under consideration for the future include:

- Conversion of the ‘temporary’ holdroom facilities to permanent construction including new loading bridges
- Conversion of the Flight Services facilities adjacent to the Main Terminal to an International Arrivals facility
- The airport has investigated the removal of an inactive runway in order to open up additional area beyond for development

Airport management indicated that the potential construction programs noted below are under consideration.

FAA TRACON Facility

The FAA has investigated the feasibility of constructing a new TRACON facility (designed to house air traffic controllers who use radar displays and radios to guide aircraft approaching and departing airports generally within a 30- to 50-mile radius up to 10,000 feet, as well as aircraft that may be flying over that airspace).

Sewage Treatment Facility

A sewage treatment plant which could be utilized by the airlines and the local surrounding community is proposed as part of the Ronkonkoma HUB project, north of the airport site. Alternatively, a recent proposal suggested extending a sewer line to this area to connect with the existing Southwest Sewer District; if this were to occur, the airport could connect to the extended sewer line.

SW Cargo Facility

FedEx is investigating the benefits of constructing a distribution facility on Johnson Avenue.

Master Plan Update 2013

MacArthur Airport has recently completed the final stage of a Master Plan Update process, with the most recent results presented at a public forum in December 2013. The Master Plan Update investigated potential growth in the airport’s airfield, terminal, and parking areas. The range of options investigated included a proposal for two 7,000-foot runways as well as:

- Expansion of the existing passenger terminal at the current location

- Construction of a new terminal on the west side of the airport property in close proximity to the LIRR station (this concept analyzed the provision of moving sidewalks or a people mover from this new terminal location to the LIRR station)
- Construction of a monorail / light rail link from the LIRR station to the existing passenger terminal area

Local media coverage of the December 2013 Public Forum Review of the Master Plan indicated that officials said the runway and monorail link project “could be completed in as little as nine months if the federal government were to approve the proposal.”

This past year, the Islip Town Board voted to apply for a grant to fund a feasibility study for a people mover that would connect to the Ronkonkoma Hub project at the LIRR station.

3.7.2.7. MacArthur Airport – Issues and Deficiencies



MacArthur Airport is often still referred to by its original name, “Islip Airport.” In fact, the association with Islip is so strong that passengers utilizing the LIRR to travel to the airport often erroneously disembark at the Islip station rather than the Ronkonkoma Station. Recent studies have shown that out-of-state students at Stony Brook University are unaware that there is a commercial airport 16 miles away from

campus. As the only commercial airport east of LGA and JFK, the facility, Suffolk County, and the region would benefit from embracing the more accurate nickname, ‘Long Island’s Airport.’ The photograph above, displayed at the Airport Administrations office, illustrates the issues facing MacArthur Airport today; it is a conveniently located, recently renovated, has an excellent on-time reputation—but it is underutilized.

MacArthur is thought of as a ‘Florida Airport’ with little acknowledgement of Long Island’s potential as a tourist destination. With world class beaches, the North Fork wineries, world class golf courses, and Splishsplash Waterpark all within an hour’s drive, MacArthur is well located to serve all of Long Island and the growing tourist market in Suffolk County. The Airport has undertaken a publicity campaign to bring Long Island residents to the airport for a variety of non-aviation activities, including concerts. Additional marketing support from Suffolk County

could greatly improve the airport's visibility and increase its potential as an economic engine for the region.

MacArthur Airport appears to suffer from a lack of visibility. Airport management has initiated public relations campaigns, including scheduled concerts at the airport, simply to encourage local residents to get to know the facility. Poor signage on the state-maintained Sunrise Highway makes navigating to the airport difficult. Passengers utilizing the LIRR to access the airport often disembark at Islip, despite the proximity of the Ronkonkoma Station to the airport. Local newspapers are often suspicious and critical of the airport's improvement initiatives. The airport receives minimal support from the state, the county, or the town.

With its central Long Island location, easy access to Long Island's highways, proximity to the LIRR, and ample parking, MacArthur is the airport with far more convenient access than either JFK or LGA. For example, with proposed improved LIRR service, passengers can travel by train from Brooklyn far more easily than taking a taxi to LGA. With the proposed long range expansion and construction at LGA, MacArthur is positioned to provide an excellent alternative to the anticipated congestion at LGA.

The current airport administration has embarked upon numerous marketing initiatives to promote Long Island as a tourist destination, and MacArthur Airport as the way to get there. These efforts range from advertising in the print media in Boston, Washington, DC, and Baltimore to promote Long Island's many attractions, including van service from the airport to local wineries and beaches.

3.7.3. TERMINAL FACILITIES – REPUBLIC AIRPORT

3.7.3.1. Overview

Republic Airport is located 30 miles east of Manhattan and situated on the east side of Route 110 and the north side of Route 109 in the hamlet of East Farmingdale, New York (see **Figure A-48 in Section 3.7.1.**). The airport is situated approximately one mile east of the central business district of Farmingdale.

Republic Airport is known as Long Island's Executive Airport. It is an airport devoted to flight training and private and corporate aircraft, as well as charter and regional commuter operations.

Republic Airport encompasses a land area of approximately 530 acres and has two asphalt paved runways (see **Figure A-52**). There are 10 flight schools on site which provide training for helicopters, single and multi-engine propeller aircraft, and jet aircraft.



Figure A-52: Aerial View – Republic Airport

Republic Airport is surrounded by numerous communities (including East Farmingdale, Melville, Farmingdale, and North Lindenhurst), as well as a wide range of land uses adjacent to and in the immediate vicinity of the airport. Commercial uses are interspersed in all directions, and a number of cemeteries are located off the eastern and southern boundaries of the airport property.

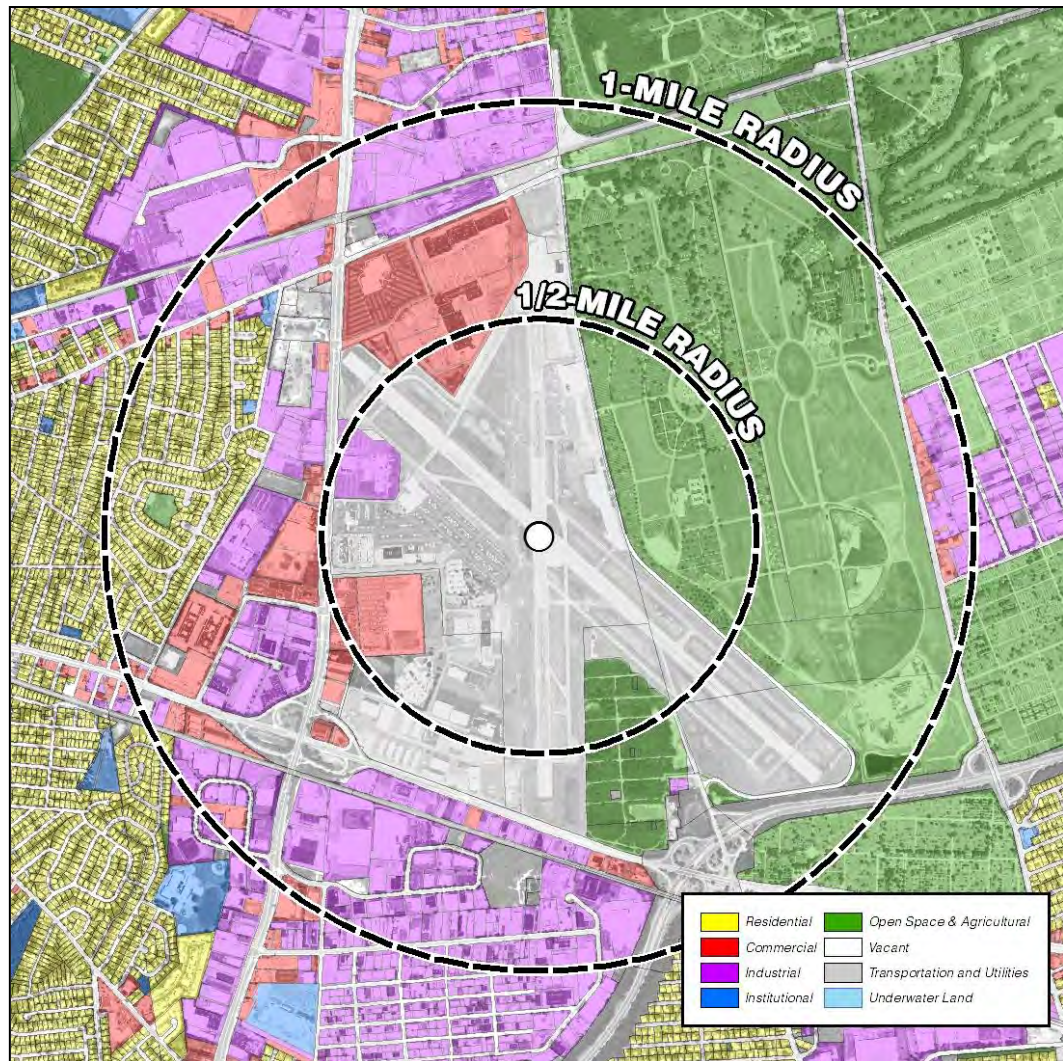


Figure A-53: Land Use – Republic Airport

Land uses in the areas surrounding Republic Airport include (see **Figure A-53**):

- North – Commercial - retail and office
- South – Farmingdale Rd - Commercial – retail, south of Farmingdale Road is residential
- East-New Highway – Cemetery, golf course, some industrial
- West – Route 110 – Commercial – retail, west of Route 110 is residential

Access is provided to Republic Airport via the following (see **Figure A-54**):

- North – South Route 110
- East West – Southern Parkway (Limited Access parkway)

- East West – Route 109 - Farmingdale Road (Commercial)
- Bus routes – S1, S31, N72 via route 110



Figure A-54: Connectivity to Infrastructure – Republic Airport

3.7.3.2. *Republic Airport History*

The original airport plan was prepared in 1927. Over the next 60 years, Republic was home to various military manufacturers. This facility location was a critical part of what was called “the arsenal of democracy,” which produced over 3,000 P-47 Thunderbolts that left from Republic’s airfield en route to the European theater in WWII.

As the defense industry began to diminish on Long Island, the role of Republic Airport as a general aviation facility became ever more important, supporting the needs of recreational

fliers and businesses located throughout the region. The facility was converted to a general aviation airport in 1966.

In 1969, the airport was purchased by the MTA, and management continued under their auspices for 14 years. Ownership of the airport was transferred to the New York State Department of Transportation (NYSDOT) in April 1983 with the goal of promoting economic development in the surrounding Long Island region. The airport is currently managed by URS Corporation.

3.7.3.3. *Level of Operations and Services*

Republic Airport is the busiest general aviation airport in New York. Despite this, in recent years annual operations have decreased from a high of approximately 180,000 annual operations to 2011 levels of approximately 110,000. The airport has nearly 500 based aircraft, which is indicative of the high level of users who reside in the Suffolk County catchment area. As a general aviation and reliever facility, Republic Airport generates \$139 million in economic impact to Nassau and Suffolk Counties each year.

Table A-8 shows the significant difference in the number of based aircraft at Republic Airport in comparison to other aviation facilities in the New York Metropolitan area.

**TABLE A-8
BASED AIRCRAFT COUNTS – NEW YORK
METROPOLITAN AREA AIRPORTS**

Airport	Based Aircraft
Gabreski	102
JFK	0
LaGuardia	0
MacArthur	202
Morristown	187
Republic	502
Teterboro	112
Westchester	312

Statistics from 2011 indicate levels of service include approximately 110,000 operations (light general aviation comprises approximately 80 percent of the overall operations). Currently operating at capacity; all existing aircraft parking facilities are full and there is a wait list, although the number of operations has dropped. This trend has continued since 2008 and is due to several factors including:

- Increases in gas prices
- Fewer aircraft are being manufactured
- Trained pilot population is aging

In addition, the continuing economic impacts of Super Storm Sandy have contributed to the overall decline in operations at the facility as shown in Table A-9.

**TABLE A-9
NUMBER OF OPERATIONS –
REPUBLIC AIRPORT**

YEAR	NO. OF OPERATIONS
2006	127,369
2007	110,696
2008	110,974
2009	100,846
2010	108,328
2011	109,018
Note: The number of operations includes arrivals and departures.	

International air travel is also accommodated at Republic’s facilities. Of the approximately 800 annual international passengers arriving into Long Island, nearly 600 passengers arrived at Republic. To address this growing passenger demand, the U.S. Customs facilities in currently being upgraded and expanded. The proposed renovation at the Main Terminal Building will provide permanent facilities for two U.S. Customs staff members.

Several of the casinos located in Atlantic City charter flights from Republic Airport to those destinations. Boarding for those flights occurs at the Main Terminal.

- Annual earnings: \$78M
- Annual Economic Activity: \$214M
- Currently: 1,384 employees on airport

Aviation Customer Base

Republic Airport plays a strategic role for major corporations located in and around Suffolk County. Republic Airport provides these corporations the air service they need to conduct their business worldwide.



The majority of business customers utilizing Republic Airport are corporate middle managers as opposed to CEOs. Such use by this segment of the customer base represents an industry-wide trend—large corporations are using general aviation services for quicker, more efficient business travel.

With no general aviation facilities in Nassau County, Republic serves the general aviation needs of Manhattan, Brooklyn, Queens, Nassau County, and

portions of Suffolk County. Because of its location, Republic provides easier access and connections to corporate headquarters in and around Suffolk County than other airports in the region. In addition, users at airports like Teterboro in New Jersey experience significant flight delays.

Republic's corporate charter customer base includes companies such as Costco and Geico. The corporate services at Republic provide an incentive to these companies to locate and remain in Long Island.

As additional corporations, such as Cannon, develop a significant presence in Nassau and Suffolk County, this customer base should continue to grow at Republic.

Although Republic Airport has had a sporadic history of commercial service, there are no initiatives in place to bring commercial service to Republic.

Republic Airport is the third busiest airport in New York State (by number of operations) and has the largest capacity of any of the state-operated airports in the metropolitan area.

Unlike other regional airports such as Westchester and Teterboro, Republic Airport has a greater demand for helicopter service and currently has 20 corporate helicopters on site. Typically, general aviation facilities have between five to seven corporate helicopters.

In their efforts to promote Republic Airport within the County, the airport has hosted many large-scale special events. These events range from the Blue Angels and Thunderbirds basing their aircraft for annual air shows sponsored by the New York State Parks, Recreation, and Historic Preservation department, to campaign visits by President Bush in 2004 and President Clinton in 2007. Airport management has indicated that the site is often rented for short term

use by television, movie and commercial film crews as well as concert rehearsals. This has included high profile appearances by celebrities such as Donald Trump appearing in an episode of his television show, “The Apprentice.” The Islanders Hockey team also utilizes charter service from Republic for transportation to their Long Island facilities. As the airport is not controlled by the Transportation Security Administration (TSA), the logistics of arranging these events is far less complicated. As non-aviation related activities, these initiatives provide income to the local community.

Republic’s Critical Role in Disaster Relief

Various infrastructure improvements have been completed in the past 10 years which have enabled Republic’s use as a disaster relief center. Larger aircraft can be accommodated as a result of a program to provide increased turning radii on the taxiways. This was critical when Hurricane Katrina refugees were air lifted (on larger aircraft) for temporary housing in the New York region.

More recently, Republic Airport played a critical role as a FEMA distribution and staging area for emergency supplies in each of the most recent Hurricanes, Irene and Sandy. FEMA’s critical supplies were flown and trucked to the airfield due to its central location serving both Nassau and Suffolk Counties. Republic’s status as a state-owned facility streamlined FEMA’s process for utilizing the facility.

Republic Airport’s critical role in these disaster relief efforts would indicate that emergency access to and from the airport should be an important priority in Suffolk County’s future transportation planning efforts.

3.7.3.4. Existing Facilities and Airport Property

Land Use

The total airport property for Republic consists of 526 acres. There are four vacant parcels of land, with over 50 acres contiguous with the airport property and an additional 12 acres non-contiguous. Open acreage includes 12.5 acres in the area immediately surrounding the old aircraft factory buildings (mitigation efforts were completed in the 1970s), 5 acres adjacent to the State Police facilities, and the wooded area on the south side of the airport property.

Republic Airport Terminal Building

The Airport Administration offices are housed in the two-story terminal building, built in 1983, that also serves passengers ready to board charter flights to Atlantic City and other short distance destinations.



The Airport currently manages the ramp area tie-down facilities immediately adjacent to the control tower. At present, there are no facilities provided for pilot use (e.g., preflight briefing rooms, lounges, or washrooms).

There are 10 flight schools on the field which provide training for helicopters, single- and multi-engine propeller aircraft, and jet aircraft. Several of these aviation schools are located within this aging terminal facility. Over the course of the year, the main terminal facility accommodates a number of public aviation-related events. Adequate surface parking is provided in the area immediately adjacent to the Administration Building and the Control Tower facility.



Within the past 10 years, corporate hangars have been added (Talon Air and Northeastern). These new facilities provided hangar space for aircraft that were already parked at Republic. There are a total of 60 businesses on the airport; including 10 Republic tenants.

Two fixed-base operators serve corporate and light general aviation customers—Atlantic Aviation, located on the south end of the field adjacent to Route 109 east of Route 110; and SheltAir Aviation, located on the north end of the field along New Highway.



Various services offered in hangar spaces at Republic Airport include: charters, international, cargo, ground handling, forklift services, Type I and Type IV deicing, and air stairs. Services available in the conference rooms include: pilot lounges, crew and rental cars, and self-serve fueling.

SheltAir's current lease includes approximately 20.48 acres. On site are the following: Hangar 2, Hangar 4, aircraft tie-down spaces (97), a fuel farm with three 15,000-gallon, above-ground, Jet-A tanks and one 15,000-gallon, above-ground, Avgas tank. There are also related ramps and aprons, and vehicular parking areas (233 spaces), within the existing SheltAir lease area.

Non-Aviation related tenants include: Headquarters of Troop L of the New York State Police.

The American Air Power Museum, dedicated to showcasing the wide range of fighter aircraft manufactured and tested at Republic, is located on the northern portion of the airport. The museum sponsors large-scale air shows bringing thousands of spectators to the airport each year. Overflow parking is required at these events to accommodate the highly popular Memorial Day Bethpage Credit Union Air Show. Upwards of 10,000 visitors attend this event.



The popular 56th Fighter Group Restaurant, situated on the west side of the airport off Route 110, closed in 2012 after 30 years of operation. Plans to relocate this facility adjacent to the museum have not been successful.

There are two hotels located on the airport grounds, the Courtyard by Marriot and Towne Place Suites. Additional non-airport use facilities include Satellite branch of Molloy College and BOCES Technical School.

Tenant Surface Parking

As per discussions with airport management, in general, customer and employee parking requirements are accommodated with available on-site parking. However, more recently, Molloy College's student parking facilities have been filled to capacity.

Parking shortages also happen during large-scale special events at Republic Airport (including annual air shows). Frontage along New Highway is used for overflow parking, when required. Valet parking is also provided at special events to maximize available parking.

It is airport policy that any new tenant development is required to provide additional customer/employee parking aimed at meeting additional parking requirements.

3.7.3.5. *Existing Intermodal Connections*

LIRR Access

The closest operational LIRR train station is the Farmingdale Station located approximately 2 miles west from the airport (in Nassau County) in the residential core of Farmingdale.

The Republic LIRR Station, which opened in December 1940 and closed in 1986, was a station stop along the Ronkonkoma Branch for employees of the Fairchild Engine & Airplane Manufacturing Company and the nearby Republic Airport. The proposed LIRR



Strategic Plan includes reopening the Republic Station in 2020 (concurrent with the opening of the Double Track program). The reinstatement of service and the Double Track program is intended to improve access along Route 110 and provide reverse commute service.

The Town of Babylon is investigating the feasibility of constructing a TOD (including multi-family/apartment development) on the 12 acres of airport land adjacent to the old factory buildings. This TOD would provide intermodal bus connections to the nearby and reopened Republic LIRR Station.

Bus Connection

The closest bus stop is located on the westbound side of Route 110. According to Airport Management, the majority of local bus service is utilized by non-airport related users (e.g., Marriott Hotel employees and Molloy College students).

Republic's general aviation client base accesses the airport in one of the following ways:

- Private car
- Taxi /private limousine service
- Courtesy van service / shuttles provided by fixed-base operators to and from the LIRR, hotels, and local malls (for pilots)

On-site Car Rental

Upon request, Hertz Rental cars are provided to customers by the fixed-base operators.

3.7.3.6. *Proposed Improvement Plans for the Future*

Current Planning Efforts: Short Term Plans (next five years)

- FAA Runway Safety Projects / 2015
- NYSDOT Republic Airport : \$30-\$50M Capital Improvement Programs

In order to meet the Runway Safety Standard criteria by 2012 set forth by the FAA, Republic has proposed to relocate Runways 1 through 19. The relocation consists of moving and replacing paint markings on the runway pavement (approximately 450 feet north).

There is no current proposal to add pavement or extend the usable length of the runway. This safety project will allow for a minimum of 1,000 feet of cleared area beyond each runway end on airport property. The safety area project can only be accomplished with the removal of the two existing Hangars—Number 2 (leased by SheltAir) and Number 3 (American Airpower Museum)—and their associated aircraft aprons and taxi lanes/taxiways.

As valuable aviation assets, these hangars are proposed for replacement in other compatible areas of the airport. The associated improvements for the Runway Safety project also include the installation of new LED runway edge lighting, installation of new and/or relocation of

existing guidance signs, and any required electrical vault work and/or control panel work associated with lighting and guidance systems.

There is an anticipated private on-airport development of an additional \$50M of investment.

SheltAir Aviation Modernization and Redevelopment

The SheltAir facility is situated at the northeastern portion of Republic Airport, to the east of Runways 1 through 19 and north of Runways 14 through 32. SheltAir's current lease area of approximately 20.48 acres is developed with Hangar 2, Hangar 4, aircraft tie-down spaces (97), and a fuel farm with three 15,000-gallon, above-ground Jet-A tanks and one 15,000-gallon, above-ground Avgas tank. There are also related ramps and aprons, and vehicular parking areas (233 spaces), within the existing SheltAir lease area.

The proposed RSA relocation project and associated improvements will decrease the existing SheltAir lease area from 20.48 acres to 14.26 acres—a reduction of 6.22 acres. The 14.26-acre lease area is hereinafter referred to as the "Northern Leasehold Area." SheltAir is proposing to redevelop the Northern Leasehold Area by relocating Hangar 2 or constructing a new hangar of similar size. As part of the proposed project, the number of tie-down spaces would decrease from 97 to 70.

There are 13 T-hangars proposed for construction, which have a combined building area of 15,045 square feet. The existing fuel farm containing three 15,000-gallon, above-ground Jet-A tanks and one 15,000-gallon, above-ground Avgas tank would be relocated to the Breslau Leasehold Area (see discussion below).

The proposed project includes movement of the FBO offices of SheltAir to a 41-acre undeveloped area at the southern portion of the Airport. The 41-acre southern leasehold area is comprised of the "Breslau Area" and the "T-Hangars & Corporate Hangars." The proposed improvements on the Breslau Leasehold Area include the construction of seven 30,000-square-foot hangars, 6,000 square feet of office space within each hangar, a 30,000-square-foot fixed-base operator building, and a 3,000-square-foot maintenance facility (for ground support equipment). Approximately 14 tie-downs are proposed along the northeast edge of this lease area.

Also proposed is the relocation of the existing fuel farm from the Northern Leasehold Area to the Breslau Leasehold Area, which would include the installation of four 20,000-gallon, above-ground storage tanks for Jet-A fuel, and one 10,000-gallon, above-ground storage tank for Avgas. There are currently three 15,000-gallon Jet-A tanks and one 15,000-gallon Avgas tank on

the Northern Leasehold Area. The existing tanks would be removed as part of the proposed project.

Access into the SheltAir facility would be provided on the east side from a proposed driveway extension from New Highway. Access is also proposed from Route 109.

Community Outreach

Like most suburban neighborhoods adjacent to airport facilities, the East Farmingdale community would very much like to maintain the status quo; they desire no increase in air traffic or noise and no increase in usage which might exacerbate current traffic congestion on local roads. Efforts to improve the airport's public appearance are supported by the local community.

Because the facility is owned by the state, aviation activity that takes place there does not contribute to the local tax base, which is why the community supports non-aviation development.

The Airport Management has initiated significant public outreach efforts with their active participation in the following:

- Chamber of Commerce events
- Aviation Career Fairs
- Annual Air Shows
- Museum events

Recently Completed Phase of Airport Vision Plan Initiated in 2009

Stakeholder comments regarding future development included the following:

- Preserve the airport as a general aviation facility
- Concern about future expansion
- Concern about SheltAir development
- Encourage non-aviation use to limit jet traffic and increase taxable income from Airport
- Reopening of Republic LIRR Station is viewed favorably by the community
- Focus on 'green' development

Stakeholder comments regarding location of Republic included the following:

- Helped to accomplish business goals
- Favored Republic Airport over other New York City airports

3.7.4. TERMINAL FACILITIES – FRANCIS S. GABRESKI AIRPORT

3.7.4.1. Overview

Francis S. Gabreski Airport is located three nautical miles north of the central business district of Westhampton Beach in Suffolk County, and approximately 80 miles east of New York City (see **Figure A-48 in Section 3.7.1.**). The general aviation facilities are utilized by private aviation, corporate businesses, and air taxi services. Two fixed-base operators, Malloy Air East and SheltAir, provide aviation services to the airport users.

Gabreski Airport is a joint civil-military general aviation airport located on 1,451 acres in the Town of Southampton on eastern Long Island (see **Figure A-55**). Owned and operated by Suffolk County, the Airport has 3 runways, including one that is 9,000 feet long, making it among Long Island's longest.



Figure A-55: Aerial View – Gabreski Airport

Land uses adjacent to Gabreski Airport include light industrial and commercial uses along Route 31 and the Quogue Wildlife Refuge to the east of the airport property. The protected Pine Barrens occupies a significant amount of area surrounding the airport facilities.

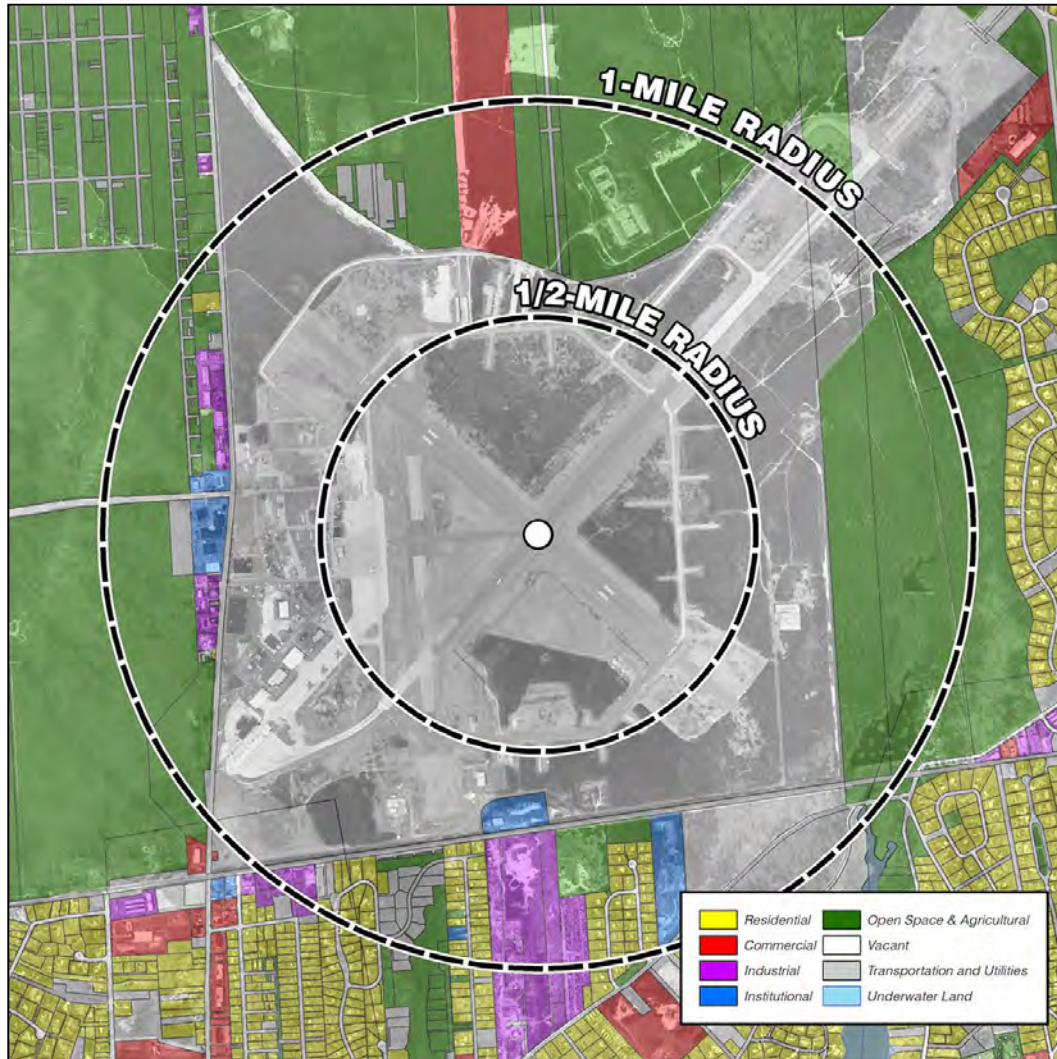


Figure A-56: Land Use – Gabreski Airport

Land use in the areas surrounding the airport include (see **Figure A-56**):

- North – Pine Barrens
- South – residential
- East – residential, agricultural
- West – general aviation support, Pine Barrens, residential

Access is provided to Gabreski Airport via the following (see **Figure A-57**):

- North South – Route 31 (Old Riverhead Road)
- East West – Southern Parkway (Limited Access parkway)
- East West – Route 109 - Farmingdale Road (Commercial)
- Bus routes – S90 via Old Riverhead Road



Figure A-57: Connectivity to Infrastructure – Gabreski Airport

3.7.4.2. Gabreski Airport History

Francis S. Gabreski Airport was known as Suffolk County Air Force Base until 1969, when it was changed to Suffolk County Airport. In 1991, the airport was again renamed in honor of Colonel Francis S. Gabreski, USAF (Retired), a U.S. Army Air Forces flying ace in World War II who, as a U.S. Air Force officer, was later the commander of the 52nd Fighter-Interceptor Wing at Suffolk County Air Force Base from 1964 through November 1967.

Suffolk County Army Air Field

The Suffolk County Army Air Field was built in 1943 as a United States Army Air Forces sub-base of nearby Mitchel Field. Later assigned to First Air Force, the 437th Army Air Force Base Unit defended the New York City area and flew antisubmarine patrols. Post-war, the airfield was conveyed to Suffolk County for use as a civilian airport, but included a reversal clause if future military use was ever needed.

Suffolk County Air Force Base

Renamed when the United States Air Force reclaimed the airport in 1951, Suffolk County Air Force Base (AFB) was part of the Eastern Air Defense Force's defense of the New York City metropolitan area. The Air National Guard's 103rd Fighter-Interceptor Wing (103 FIW), along with the 118th Fighter-Interceptor Squadron and its F-47N Thunderbolts was federalized on March 2, 1951 and moved from Brainard Field, Connecticut to Suffolk County AFB on June 1. The 103 FIW was returned to state control on February 6, 1952 and remained briefly at Suffolk County until replaced by the 45th and 75th Fighter-Interceptor Squadrons in November 1952, flying the F-86 Sabre as part of the 23rd Fighter-Interceptor Group.

In 1955, the 23 FIG was reassigned to Presque Isle AFB, ME and replaced by the newly activated 52nd Fighter-Interceptor Wing (52 FIW), which flew under various designations from Suffolk County AFB until 1969, with the 2nd and 5th Fighter-Interceptor Squadrons flying F-94 Starfire, F-101 Voodoo and F-102 Delta Dagger interceptors. In 1963, the 52 FIW was renamed the 52nd Fighter Wing (Air Defense) and became part of the New York Air Defense Sector (NY ADS), the NY ADS being one of four USAF air defense sectors employing the Semi-Automatic Ground Environment (SAGE) system.

Suffolk County AFB was also the main support base for the Suffolk County Missile Annex, a nearby USAF CIM-10 Bomarc surface-to-air missile launch complex for the defense of the New York City metropolitan area under the control of a missile launch control center at McGuire Air Force Base, New Jersey.

As a result of funding shortfalls for the Vietnam War that resulted in the closure of numerous stateside air force bases and naval air stations, Suffolk County AFB deactivated in 1969 and the military installation was again transferred to the Suffolk County government for use as a civilian airport.

Suffolk County Airport/Air National Guard Base and Francis S. Gabreski Airport/Air National Guard Base

The airport operated as a civilian general aviation airport without a military unit from 1969 until 1970. Military operations were reintroduced in June 1970 when the 102nd Air Refueling Squadron (102 AREFS) of the 106th Air Refueling Group (106 ARG), New York Air National Guard, relocated to Suffolk County with their KC-97 Stratotankers after the closing of Naval Air Station Floyd Bennett Field. In 1972, the unit's mission changed from air refueling to fighter-interceptor, with the new mission of controlling the skies along the northeast U.S. coast with F-102 Delta Dagger aircraft.

In 1975, the designation and mission changed again to "Aerospace Rescue and Recovery," later shortened to "Air Rescue" and then simply "Rescue." The current names of the 102nd Rescue Squadron (102 RQS) and 106th Rescue Wing (106 RQW) were assigned in 1995. Today, the 106 RQW provides peacetime and combat search and rescue services using HC-130P Hercules aircraft and HH-60G Pave Hawk helicopters. The rescue wing was featured in the book and movie of "The Perfect Storm," which details the crash of one of the wing's HH-60G Pave Hawk rescue helicopters while conducting search and rescue operations from the airport during the actual storm.

3.7.4.3. Level of Operations and Service

For the 12-month period ending December 31, 2010, the airport had 83,712 aircraft operations, an average of 229 per day and included: 97 percent general aviation, 3 percent military, and less than 1 percent air taxi. At that time there were 107 aircraft based at this airport: 79 percent single-engine, 6 percent multi-engine, 2 percent jet, 2 percent helicopter, 2 percent glider, and 10 percent military.

Two fixed-base operators provide aviation services to airport users: Long Island Jet Center and Malloy Air East. The Suffolk County Police Aviation Section also bases a Law Enforcement and MEDEVAC helicopter at the airport. The base is staffed from 7AM to 11PM by two police officer pilots, as well as a flight paramedic employed by Stony Brook University Hospital.

In 2012, there were 60,000 operations at Gabreski Airport. This represented a 17 percent increase in activity from the previous year. In 2012, there were 3,100 air taxi corporate jets (approximately 5 percent of operations). Peak activities at this general aviation facility occurred between 2007 and 2008 with over 90,000 operations. The economic recession that followed accounts for the significant drop in operations.

Recent operations data indicates approximately 2,000 flights per year from overseas. U.S. Customs currently performs on-board checks of these operations, but are investigating the feasibility of constructing an arrivals facility at the new Sheltair terminal.

Gabreski's proximity to the Hamptons accounts for the high seasonal peak of activity between June and September. This general aviation facility serves an affluent customer base of second-home owners and visitors to the Hamptons. In the winter months, activity is minimal; most recently with seasonal decreases of over 50 percent. Despite decreases in operations, annual income at the Airport has remained consistent over the past five years at approximately \$1.2 million.

According to the most recent airport projections, the civil aviation facility currently has adequate capacity in the tie-down ramp areas and hangars to support current activity as well as the growth in operations projected over the next 10 years.

Military operations at Gabreski typically account for 19 percent of the total number of operations. Gabreski has the longest runway on Long Island (9,000 feet) and can accommodate a wide range of large military aircraft, including C130s—typical Air National Guard (ANG) aircraft—and Boeing 737s.

There are 100 based aircraft at Gabreski (which includes military aircraft). There are 6 HH60 Blackhawk helicopters. There are approximately 1,700 helicopter operations per year.

3.7.4.4. *Existing Facilities and Airport Property*

Land Use

Gabreski Airport encompasses 88 acres and consists of 34 buildings. It can accommodate aircrafts of any size and is utilized by corporations, businesses, private aviation, and air taxi services. As noted above, the New York ANG 106th Rescue Group is based at Gabreski Airport and operates Black Hawk helicopters to perform aerial search and rescue services. The ANG has been deploying aircrafts to combat illegal dumping in the Pine Barrens Core and other environmentally sensitive areas.

Gabreski Airport contains three paved runways. Runway 6/24 measures 9,000 x 150 feet (2,743 x 46 m), making it among New York's longest after JFK International Airport and Stewart International Airport. The airport has two additional runways (1/19 and 15/33), each measuring 5,000 by 150 feet (1,524 x 46 m).

Operations data received for 2005 to 2013 from Gabreski Airport senior management indicates a consistent increase in the number of airport operations during the months of June, July, and

August. Additional data shows that while general aviation and air taxi operations increase during this period, military aviation operations during this period decrease.

Proposed Land Use Plan

The airport is located approximately 2 miles south of Sunrise Highway, immediately east of Route 31 (Old Riverhead Road). Current plans call for the construction of a condominium development on the opposite side of the runway (see **Figure A-58**). With the exception of the proposed Hampton Business and Technology Park on airport property, no other major developments are proposed in the immediate vicinity of the airport. Due to the seasonal nature of the community, year-round commercial ventures in the area are difficult to sustain.

Main Passenger Terminal

The existing terminal is owned and operated by Suffolk County. This dated, modest structure provides minimal passenger amenities, including a small café, public restrooms, and a lounge area. Malloy Air East is housed in this common use terminal. Airport Administrative offices are located in a shared-use, low rise brick structure located adjacent to the



Sheltair facility and the aircraft ramp. This location is 'prime' airport real estate with direct ramp access and would be an ideal location for a new hangar in the future. A new combined terminal/administration building could be constructed on the site currently occupied by the outdated terminal structure.

The number of airport employees varies over the course of the year with a maximum of 50 on site employees during peak summer months. ANG has a workforce of 300 full-time employees, as well as 1,200 once-a-month National Guard employees. This new development is expected to increase the local tax base and lead to more than 600 new year-round, high-paying jobs for the East End of Suffolk County.



General Aviation Facilities*Sheltair*

Sheltair constructed their new hangar two years ago (this facility moved from MacArthur Airport due to the lower lease rates at Gabreski). Sheltair currently accounts for 60 percent of the traffic at Gabreski. Molloy Air East, operating at this facility since 1979, accounts for the remaining 40 percent of air traffic activity.



Sheltair provides passenger facilities in a new, one-story facility equipped with comfortable passenger lounges, pilot preparation areas, and administrative offices. Hangar facilities are located adjacent to the Sheltair terminal and the main passenger terminal.

Unlike other general aviation airports, there are no flight schools currently based at Gabreski Airport, although several of the older hangar facilities indicate flight schools had previously operated from this facility.

Non-Aviation Tenants include:

- Sheahan
- Holy Moses Cheesecake
- Hampton Jitney
- Local contracting company



Surface Parking

There is currently a small parking area adjacent to the passenger terminal (approximately 70 parking spaces). All airport tenants are required to provide adequate parking to serve their client base and development. Based upon current operations levels, there is more than an adequate amount of vehicular parking. While the parking supply for airport users is adequate, the feasibility of supplying additional parking to encourage the use of the LIRR for weekend and summertime users is worthy of consideration.



Airport Property

Similar to its surroundings, Gabreski Airport property includes large areas protected by the Pine Barrens Act. According to the latest land use plans prepared by the Airport, 90 acres are leased by ANG, while 47 acres of airport property have been allocated for future aviation use.

In 1998, the FAA released 58 acres of property to be developed as the Hampton Business and Technology Park. The property will be redeveloped into a business and technology park comprising 510,000 square feet of new construction for a corporate center with emphasis on high-technology, homeland security, and communications industries.

This new development is expected to increase the local tax base and grow more than 600 new year-round, high-paying jobs for the East End of Suffolk County. The lease of this area will generate \$7 million in rental revenue to Suffolk County over the next 10 years and approximately \$40 million over the life of the 40-year lease.

3.7.4.5. Existing Intermodal Connections

The LIRR Montauk Branch is located immediately adjacent to the southern boundary of the airport property, approximately 0.67 miles from the airport. The nearest station (Westhampton Station) is an approximately two-mile drive from the site (approximately five minutes driving time). The schedule of operations varies throughout the year; however, daily stops at the Westhampton Station are scheduled year round, with service increasing during the summer tourist season. An express service (the “Hamptons Reserve”) is also provided on Friday

afternoons throughout the summer, running from Penn Station to the Hamptons/Montauk and services the Westhampton Station.

The Hampton Jitney currently operates a daily transportation service between Eastern Long Island and Metropolitan New York. Service is provided throughout the day with nearly hourly departures approximately every 1-2 hours from Gabreski Airport. The Jitney bus stop currently located on airport property will be impacted by the proposed Hampton Business and Technology Park construction and another location off site is being investigated.

The Airport is located on the Suffolk County S-90 bus route (between Center Moriches and Riverhead), with connecting service to the Port Jefferson Branch and Riverhead Mainline Branch of the LIRR. Limited service at the Airport is typically twice per day.

There is no taxi dispatch station at the airport; car service is typically arranged by the fixed-base operators. Two rental car facilities are located on site – Hertz and Enterprise.

Private cars, rental cars, local taxis, and private limousine services are the preferred modes of transportation to and from the airport to the nearby affluent second-home beach communities. As with other general aviation facilities, this customer base is unlikely to utilize mass transit options such as public buses or trains.

There is currently limited intermodal connectivity at the airport, and there is no identified need for improved connectivity to mass transit. The affluent user groups rely on private cars and car services (typically arranged by the fixed-base operators) to provide their transportation to and from the airport.

3.7.4.6. *Capital Improvement Plans for the Future*

Current capital plans have allocated funds for the following:

- Maintenance of existing facilities
- Runway and taxiway repairs (Federal and New York State grants)

There is an obvious need for a new passenger terminal, but to date, no Federal or county funding has been earmarked for this project.

The Airport is utilized by private aviation, corporate businesses, and air taxi services. Two fixed-based operators—Malloy Air East and SheltAir—provide aviation services to the airport users.

Gabreski Airport is also home to the 106th Rescue Wing of the ANG. With long-range flying capabilities, the 106th operates over-water search and rescue missions from the Azores to the Bahamas. The unit also assists in disaster relief and other state emergencies. The 106th Rescue

Wing, New York ANG is the parent organization of the Oldest Air National Guard unit in the country, the 102nd Rescue Squadron, tracing its roots back to the 1st Aero Squadron that was formed in 1908 in New York.

The Airport will soon be home for the Hampton Business and Technology Park. The Park will promote economic growth for the local community by coordinated and creative development of the site, suitable for multiple uses. Southampton and Suffolk County's collaborative vision for the Gabreski Airport Planned Development District (APDD) site is that it will be developed as a corporate center with emphasis on high-technology, homeland security, and communications industries.

3.7.4.7. Gabreski Airport – Issues and Identified Deficiencies

Despite the fact that Gabreski Airport is utilized by some of the most affluent residents of and visitors to Suffolk County, the airports physical plant is severely lacking. Private fixed-base operators like Sheltair have provided 'stand-alone' first-class facilities to serve their clients, but the public terminal and administration building are outdated and do not provide an appropriate high level of service. In general, the airport has no identity or physical presence on the site. This lack of street presence and identity will be further exacerbated with the completion of the proposed Hampton Business and Technology Park at the entry to the site.

3.7.5. AIRPORTS IN SUFFOLK COUNTY - SUMMARY CONCLUSIONS

Based upon investigations and analyses at the three Suffolk County airports surveyed, the greatest issue facing each of these facilities remains the significant decrease in flight operations over the past five years. Suffolk County's general aviation facilities are experiencing an industry-wide decline in operations due to an aging pilot population, increased training, operational and fuel costs, and the resulting decrease in the manufacturing of general aviation aircraft. This trend has resulted in facilities, such as Republic Airport, experiencing very high occupancy in their aircraft parking facilities and fairly low annual operation volumes. This scenario accounts for significantly reduced revenue based upon user fees.

The introduction of industrial development or industrial parks adjacent to airport facilities could benefit both groups—industrial development benefits by having goods delivered economically due to the proximity near the airports and airports benefit by increased ridership and use of their facilities.

The full potential of MacArthur Airport to serve as an important economic engine for the region remains untapped. The previous decade saw a major expansion of the passenger facilities to accommodate Southwest's growing presence at the Airport. Southwest's significant reduction

in service after this major facilities redevelopment has left MacArthur with underutilized gates and the associated decreases in annual income. Current airport management is undertaking important marketing initiatives to promote Long Island tourism and MacArthur as the fastest and (hopefully) most economical way to get there. The entry of a low-cost commercial airline could lure Long Island travelers away from LGA and JFK and greatly increase MacArthur's market share. Reliable and convenient rail access could provide an additional incentive for passengers to utilize MacArthur Airport. The importance of adequate and easily visible wayfinding signage to local airports cannot be understated. Provision of such signage would serve to enhance intermodal connectivity between the airports and both rail and bus services and may also have the benefit of increasing airport "visibility" to the traveling public (an issue specifically identified as a problem for MacArthur airport), making travel to local airports easier, less confusing, and more convenient.

3.7.5.1. Identifying Needs for Improved Intermodal Connectivity

MacArthur Airport

As the only commercial airport on Long Island, MacArthur's commercial aviation passengers would be the most likely candidates for utilizing alternative methods of transportation to get to and from the Airport. In fact, during the height of their activity on Long Island, Southwest Airlines had expressed significant interest in a LIRR connection to the airport. This connectivity has been included in many of the planning options investigated in the airport's latest Master Plan Update and seen as an important component to MacArthur's growth in the region.

Republic Airport

The revival of rail service to the Republic LIRR station will serve to invigorate economic development in the areas surrounding the airport and will provide more convenient rail access to employees, private pilots, and non-aviation tenants on airport property.

Gabreski Airport

With the proposed Hampton Business and Technology Park to be constructed on airport property, improved intermodal connectivity would most likely benefit both Gabreski Airport employees and non-aviation tenants on airport property. Gabreski's affluent general aviation customer base of second-home owners will, in all likelihood, continue to utilize private cars and car service for their transportation needs.

4. FREIGHT FACILITY CONDITIONS AND DEFICIENCIES

4.1. RAIL

4.1.1. OVERVIEW

Freight rail is inherently a green system. Each carload represents an equivalent freight capacity of four to five truckloads, which concurrently reduces traffic congestion and air pollution. Presently, freight rail accounts for 1 percent of freight traffic to Long Island which is predominantly handled by truck. Current figures show that cargo operations have significantly increased over the past decade. From a low point in 1997 of 9,700 carloads per year, to 23,000 carloads in 2012, current data projects a 20 percent increase in operations, namely 29,000 carloads by the end of 2013. Until 1997, the LIRR operated its freight franchise. In 1998, the franchise was contracted to New York & Atlantic Railway (owned by the Anacostia Holding Co.), which oversees freight operations via a 20-year contract.

The LIRR rail system plays an integral role in the viability and economic success of freight operations in and out of Long Island. Suffolk County, in particular, is a great benefactor of this infrastructure as rail freight villages develop and act as distribution points for materiel to adjoining industry, commerce, and communities. The greatest growth potential is expected to occur along the Main Line, from Farmingdale to Riverhead, while industrial growth is developing between Ronkonkoma and Yaphank. Suffolk County is supportive of the Main Line Double Track project (Phases 1 & 2) because of the associated economic benefits that will be derived from this project including enhancements to freight movement. The increase in transfer points should keep pace and be commensurate with the economic growth of the County that would serve to facilitate entrepreneurship and foster a symbiotic relationship between the pace of freight rail expansion and business growth.

Freight destined for the outer reaches of Suffolk County commences its journey from two western locations—Fresh Pond Yard in Queens, NY or the Bay Ridge Yard in Brooklyn, NY—where cargo is floated from railroad terminus in New Jersey by NY-NJ Rail and handed off to New York & Atlantic. The Fresh Pond facility handles all freight traffic coming on geographic Long Island. New York & Atlantic utilize dedicated freight rail lines in Brooklyn and Queens Counties take cargo to Jamaica, the main point of entry for freight and onto the Main Line branch of the LIRR. East of Jamaica, the rail lines are shared with commuter operations.

4.1.2. NEEDS AND DEFICIENCIES

Gentrification has influenced the type of cargo that is moved; freight has transitioned to conform to the demands of the new demographics. Today major freight commodities include

inbound construction materials, outbound construction debris, asphalt, cement, beer, pizza supplies, cardboard (for pizza boxes), milk and paper for newsprint. Zone 3 has seen an increase of 25 percent in their distributions.

In Suffolk County, there are a total 58 Main Line switches and 3 Port Jefferson Line switches of freight from which distribution of goods can be made from rail to trucks. Improvements at Enterprise Park in Calverton and Brookhaven Rail Terminal are opportunities to take trucks off the roads by employing efficient new freight villages. Further, the improvements to the Brookhaven Rail Terminal, including the purchase of 300 acres, are seen as a great opportunity for economic growth within Suffolk County.

The Brookhaven Rail Terminal plans to provide refrigeration, an impetus for growth that was severely lacking in prior years. The Brookhaven Rail Terminal is planned as a rail freight village and an industrial park, with everyone connected by rail. This facility has a consortium of backers, including Home Depot, Bakers, Bio-diesel (recycling McDonald's by-products), and Bentonite (used by the wineries). Eastern Fence (located at EPCAL) is the last plastics plant on Long Island that transports in plastic pellets used for manufacturing of fencing products.

The Brookhaven Rail Terminal serves as a model for similar facilities that are looking to contribute to economic development initiatives as a result of the proximity of freight/development, with a net result of reducing truck traffic on local roadways and the commensurate improvements to air quality and quality of life.

Other state-funded projects include the LIRR's Pineaire Double Ended Freight (DEF) siding extension project and off of the Pineaire DEF, NYA's Deer Park Capacity Expansion Project, aimed at improving the efficiency and effectiveness of the freight operations. Moreover, another state-funded project includes NYA's Wheel Spur Freight Yard Construction Project in Queens County. This facility will allow truck or barge to train transfers to occur in the future. This facility is expected to come on line in 2014.

5. WATER RESOURCES

5.1. OVERVIEW

In advance of the release of the “2014 Suffolk County Comprehensive Water Resources Management Plan” (2014 CWRM Plan), Suffolk County issued an Executive Summary Update in January 2014 that highlights critical findings and relevant post-Superstorm Sandy considerations. The 2014 CWRM Plan builds on previous efforts conducted by Suffolk County in 1970 and 1987. Like these earlier studies, the 2014 CWRM Plan compiles diverse public health and environmental information related to groundwater and surface waters used to perform extensive analyses related to water resource management. The 2014 CWRM Plan is intended to serve as a blueprint to address continuing and new water quality management challenges; by identifying key issues and possible priority solutions, it provides a roadmap for policymakers and program administrators for the next 20 years and beyond.

5.2. CRITICAL FINDINGS

The vast majority of Suffolk County residents rely on on-site wastewater disposal systems that discharge to groundwater. The 2014 CWRM Plan found that nitrogen, which primarily flows from these on-site disposal systems as well as from fertilizers, is the principal culprit that degrades groundwater quality and thus drinking water supplies, spurs hypoxia, creates harmful algal blooms, diminishes finfish and shellfish fisheries, and damages protective natural infrastructure—wetlands and seagrass beds that act as wave and storm surge buffers. Sea level rise, which also contributes to marshland degradation, is projected to raise groundwater levels, increasing vulnerability to saltwater infiltration, and compromising on-site wastewater treatment infrastructure largely composed of cesspools and septic tanks. Other factors contributing to the degradation of groundwater quality include volatile organic chemicals (VOCs), pesticides, and pharmaceuticals and personal care products.

In Suffolk County, the first notable Harmful Algal Bloom (HAB) event occurred in 1951 with the closure of the Moriches Inlet (a green tide). When the Moriches Inlet reopened in 1954 no further HAB events were observed until 1985 when the first brown tide appeared. This was followed in 2003 by a toxic blue green algae bloom, in 2004 by the first red tide, in 2006 the first Paralytic Shellfish Poisoning event, and in 2011 the first Diuretic Shellfish Poisoning event, all of which can be traced back to rising nitrogen levels from untreated wastewater and surface water runoff.

The cost to water quality and the environment of doing nothing to mitigate the waste load discharged by Suffolk County’s 360,000 septic systems and cesspools can be estimated by using

the "Benefit/Cost" approach to determining a projects priority. This method would include a quantification of avoided costs such as annual maintenance of systems, cost of expected clean-outs and pumpings, cost of new replacement systems, loss of function, cleanup of contaminated groundwater, clean groundwater replacement costs, and other contributing factors.

Relative to surface water quality, the 2014 CWRM Plan notes:

- The entire 60-mile South Shore Estuary Reserve was declared an impaired waterbody (under Section 303(d) of the Clean Water Act) in 2008 by the New York State Department of Environmental Conservation (NYSDEC);
- Since 1985, brown tide algae, thought to be triggered by excess nitrogen, has been invading Long Island estuaries (i.e., Quantuck Bay, Moriches Bay and Great South Bay) in late spring/early summer, obliterating shellfish habitats that once produced over half the clams eaten in the United States;
- The Great South Bay experienced a loss of tidal wetlands of 18 to 36 percent between 1974 and 2001;
- Long Island seagrass has decreased from 200,000 acres in 1930 to 22,000 acres today; and
- The Forge River, a Section 303(d) impaired water body, has been declared the worst case of anoxia (absence of oxygen) according to Dr. Larry Swanson, a professor at Stony Brook School of Marine and Atmospheric Sciences, due to algal blooms fed by exceptionally high nitrogen discharged from groundwater from inputs such as septic systems and fertilizer use that is years or tens of years old.

The 2014 CWRM Plan notes that pesticides pose a threat, especially to private wells in agricultural areas, identifying the presence of over 100 pesticide related compounds in Suffolk County's groundwater. In addition, pharmaceuticals and personal care products are an emerging concern that is beginning to be analyzed and monitored within Suffolk County.

5.2.1. GROUNDWATER QUALITY

Suffolk County has long recognized that land use and over land activities have a direct impact on groundwater quality. While implementing regulations and management activities protecting groundwater quality have been effective in reducing human impact, the continued effects of land use on groundwater quality in Suffolk County is evident. In 2003, New York State Department of Health (NYSDOH) directed all county health departments to develop Source

Water Assessments (SWAs) for all existing public supply wells. As part of the 2014 CWRM Plan, the SWAs were updated for all existing as well as planned community supply wells with a focus on contaminants identified in groundwater including nitrate, VOCs, pesticides, perchlorate, pharmaceuticals, and personal care products. The SWAs had three major components including 1) use of three dimensional groundwater flow and contaminant transport models; 2) use of Geographic Information Systems (GIS) to identify prevalence of each contaminant category based on land use and potential point source contamination; and 3) evaluation of potential contamination susceptibility based on contaminant prevalence, fate, transports, and travel time.

Based on water quality data collected between 1987 and 2005, concentrations of many groundwater contaminants introduced by human activity have increased over that past two decades since the completion of the 1987 Comprehensive Plan. Analysis of data collected for the period from 1987 to 2013 by the Suffolk County Department of Health Services indicates that the average nitrate concentration in 173 public water supply wells in the glacial aquifer has increased from 2.54 mg/L to 3.8 mg/L. During the same period, the average nitrate concentration in 190 magothy wells increased from 0.91 mg/L to 1.76 mg/L. While groundwater through Suffolk County continues to comply with maximum contaminant level drinking water standards, the quality of the aquifer has been gradually deteriorating as a result of land use. During the same time period examined, VOCs were detected in four times as many wells in 2005 as in 1987 with average concentrations doubling. Sources of VOC contamination can include both point sources (e.g., leaking underground storage tanks, illegal discharges and spills) and non-point sources (e.g., septic systems). Increased detections of VOCs, although at low concentrations, throughout Suffolk County indicate widespread use and release to the environment through residential septic systems.

At some point in Suffolk County's history, the sanitary wastewater recharged by more and more residents exceeded the assimilative capacity of the aquifer in densely developed areas, causing noticeable impacts to the aquifer, drinking water supply, and surface water ecology, and prompting implementation of wastewater collection and treatment systems. Recognizing the impacts of densely developed unsewered areas on groundwater and surface water quality, Suffolk County through Article 6 of the County's Sanitary Code, established maximum allowable residential densities in groundwater management zones (see **Figure A-59**). Suffolk County's recent groundwater modeling found that property sizes smaller than one acre are likely to cause groundwater nitrogen concentrations that exceed the target of 6 mg/L within groundwater management zones while property sizes of ¼ acre or smaller significantly increase

the risk of exceeding maximum contaminant level drinking water standards of 10 mg/L (see **Figure A-60**).

In order to address existing wastewater and septic problems to protect the aquifer and to make the County more resilient, Suffolk County is working closely with New York State and other local, regional, and federal partners on developing action plans that will expand and improve wastewater treatment (e.g., the Bergen Point Wastewater Treatment Facility). Investments to upgrade wastewater treatment systems and improve collection and treatment systems for the numerous substandard septic and cesspool systems in the County will provide the necessary water quality improvements which are fundamental to healthy barrier marshland systems. As part of this effort, New York State recently announced \$242 million in funding for improvements to the Bergen Point Wastewater Treatment Facility through the Environmental Facilities Corporation.

It is notable that in Suffolk County about 70 percent of homes and businesses are not served by sewers. As a means of addressing this issue, Suffolk County and NYSDEC in collaboration with SUNY Stony Brook and the Town of Southampton, are developing and implementing a \$6 million pilot plan for nitrogen treatment projects at individual homes or small subdivisions that are not served by sewer lines. The plan will include research on methods to improve the



Figure A-59: Groundwater Management Zones

Source: Suffolk County Department of Health Services

effectiveness of nitrogen treatment systems, reduce their cost and footprint, and simplify operation and maintenance. In addition, the County and State are also exploring financing options for septic system replacements and retrofits.

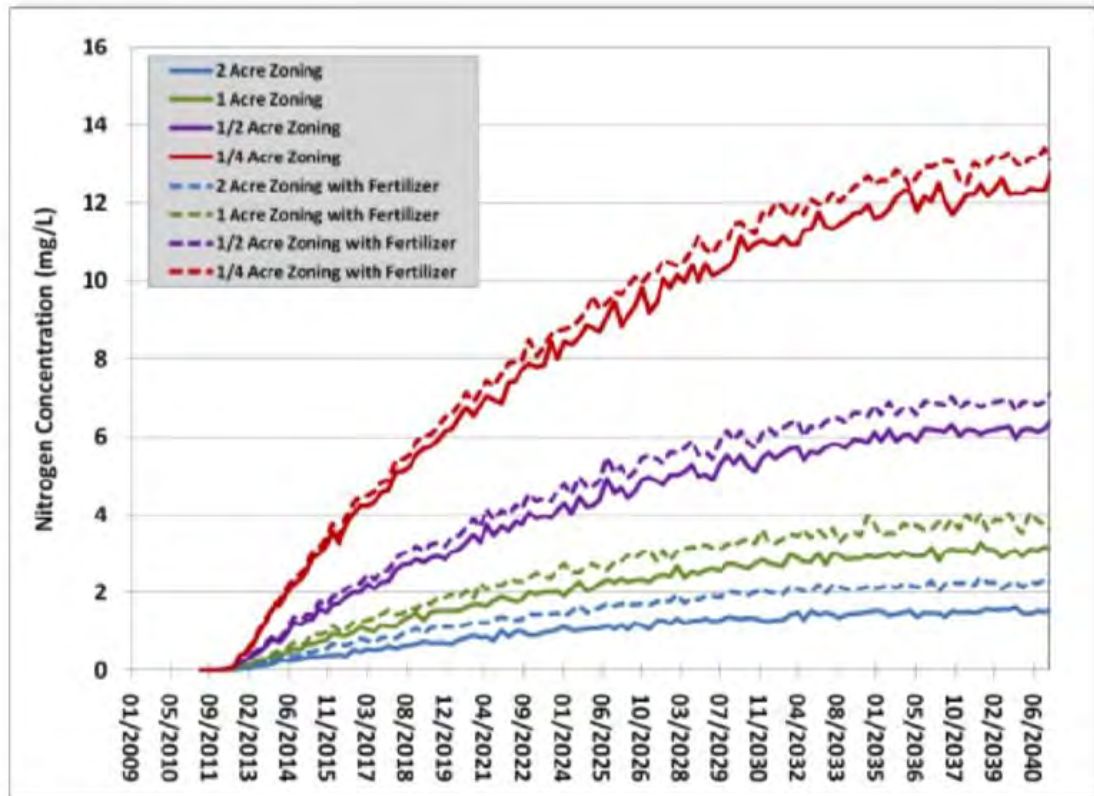


Figure A-60: Impact of Unsewered Residential Areas On Nitrate Concentrations in Downgradient Groundwater

Source: Suffolk County Comprehensive Water Resources Management Plan Executive Summary, January 2014

5.2.2. SURFACE WATER QUALITY

The 2014 CWRM Plan focused on fresh surface water quality as it is impacted by groundwater flow quality. Groundwater provides about 90 percent of baseflow to most Suffolk County streams and thus, groundwater discharge is a primary source of nutrient loading to fresh and coastal surface waters. NYSDEC has identified pathogens, metals, dissolved oxygen, phosphorus, ammonia, pesticides and silt/sediment as the primary contaminants causing impairment of fresh surface waters with stormwater runoff (a non-point source) noted as the source of these contaminants. Within the Suffolk County watershed area, non-point sources are the major contributors of nutrients and pathogens. Water quality data of 12 of Suffolk County's

larger fresh streams revealed higher levels of VOCs within streams in the more densely developed western part of the County while pesticides were primarily detected in streams in agricultural areas within the eastern part of the County.

Similar to groundwater quality, Suffolk County has recognized the link between land use and surface water quality. Management actions implemented to reduce nutrient and contaminant loads to groundwater within areas contributing to Suffolk County's surface water features will reduce non-point source loads to surface waters. Thus, Suffolk County modeled land surface areas that contribute to groundwater that eventually discharges to Suffolk County streams, harbors, and other coastal waters (see **Figure A-61**). The time it takes the water to travel from the water table to surface water discharge provides an indication of the time it will take for the effects of management actions to be reflected in surface water quality.

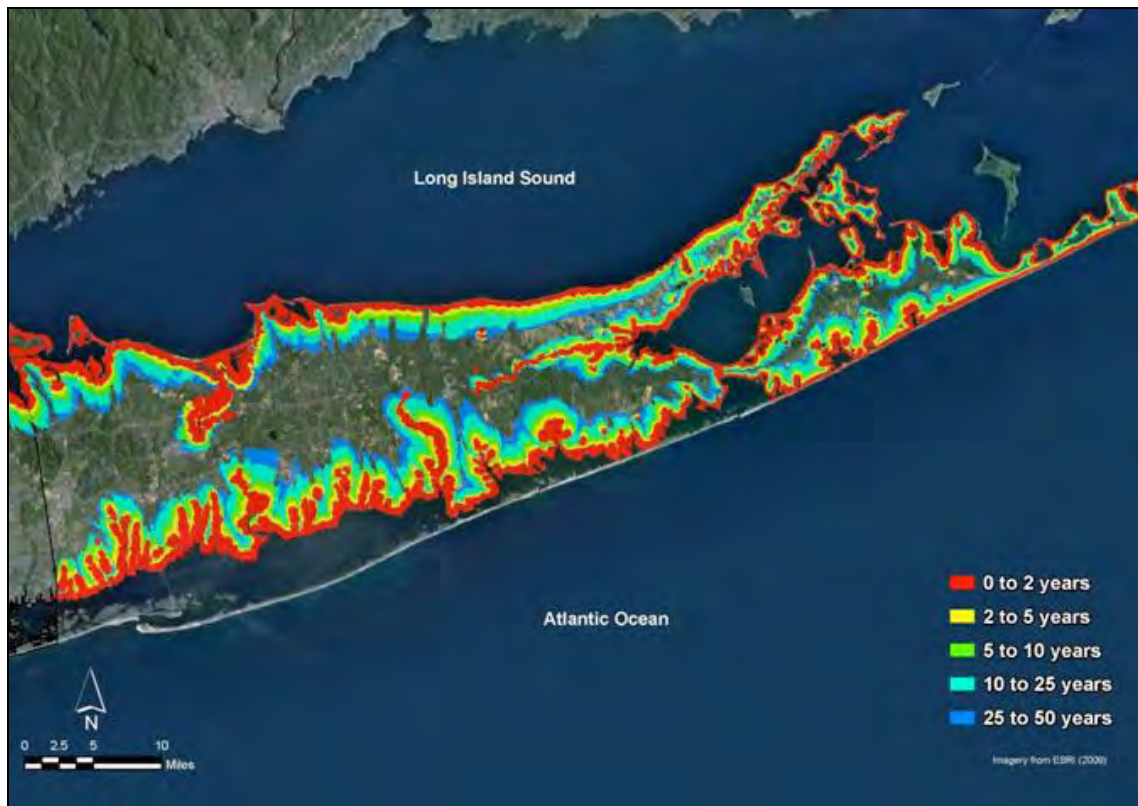


Figure A-61: Travel Time Intervals of Land Surface Area Contributing Groundwater Baseflow to Streams and Coastal Waters

Source: Suffolk County Comprehensive Water Resources Management Plan Executive Summary, January 2014

5.2.3. GROUNDWATER QUANTITY

Precipitation is the primary means of recharge to Suffolk County's aquifer with an average rainfall of about 48 inches per year. Based on water balances, it was found that construction of stormwater recharge basins has increased recharge to groundwater during the growing season resulting in slightly higher recharge on an annual basis as compared to Suffolk County's predevelopment condition. The water balances also show a net loss of baseflow to surface waters in those areas where water supply pumping is not returned to the aquifer via on-site septic systems or small sewage treatment plants discharging to recharge beds. On a County wide basis, the aquifer system can sustain current and projected rates of water supply pumping.

5.2.4. SEA LEVEL RISE

Sea level has been rising at a rate of 0.34 and 0.43 inches per decade along the East Coast (Climate Rich Information, 2009). Global warming is predicted to further accelerate the rate of rising sea levels as a result of the expansion of warming oceans and ice melt. Based on a 2 foot rise in sea level, groundwater models predicted an increase in Upper Glacial water levels between 0.25 and 2 feet on the mainland with groundwater levels expected to increase by less than 1 foot with a greater impact expected on the North and South Forks and Shelter Island. Modeling also found localized increases in the elevation of salt water interface will result in a reduction in the thickness of the freshwater aquifer system.

5.2.5. SUMMARY

The 2014 CWRM Plan found that Suffolk County's groundwater quality is remarkably good even though Suffolk County's 1.5 million residents live directly above their sole-source aquifer. However, particular attention should be paid to the 350,000 sub and non-performing septic/cesspools in Suffolk County, accounting for over 75 percent of the homes. These systems are particularly problematic in areas with high water tables and in close proximity to surface waters. When flooded or submerged in groundwater, septic systems do not function as designed and they fail to adequately treat pathogens. Excess nitrogen, noted as the principal culprit in degrading groundwater quality, from this sewage threatens our valuable natural resources, coastal defenses, and human health. As such, the susceptibility ratings resulting from the updated SWA analyses show that the majority of Suffolk County community supply wells are vulnerable to nitrate contamination demonstrating a need for additional groundwater protection measures. Due to the widespread use of VOCs in the County, the susceptibility ratings show nearly seventy percent of community supply wells are rated as high or very high for contamination by VOCs. Susceptibility to pesticides is rated at low to medium throughout

most of Suffolk County, except on the North Fork, where community supply wells are highly or very highly susceptible to pesticide contamination introduced to the aquifer by the agricultural lands present. As new information on the detection, fate, and transport characteristics or potential effects of pharmaceuticals and personal care products is published nearly every day, Suffolk County Department of Health Services (SCDHS) will continue to monitor the literature and regulatory initiatives to assess the need to respond to any potential public health concerns.

Suffolk County has more than sufficient groundwater resources to meet projected demands. However over 100 new supply wells would be required in the future through the County's towns. Alternatives to provide potable water to Suffolk County residents under consideration include treatment, conveyance from the Pine Barrens, and conservation.

Increased rainfall related to climate change will also increase water table elevations, exacerbating high water table problems in low-lying areas. Thus, impacts of sea level rise and more frequent extreme precipitation events should be monitored so that wastewater and stormwater runoff management strategies can be developed as required. The effect of sea level rise on the salt water interface must also be monitored and addressed from a water supply perspective. *

1. INTRODUCTION

Economic opportunities are the foundation of all sustainable growth. Such opportunities and a better quality of life were the reason why so many people chose to move to Suffolk County in the early 1950s through the early 1970s. In the past two decades, however, the shift from an industrial economy to one that is more knowledge-based, combined with increased global competition, altered demands on regional and local infrastructure and labor markets. In addition, as a result of the disastrous effects of Superstorm Sandy in October 2012, consideration of climate adaptation and resiliency has been brought to the forefront of comprehensive local and regional planning efforts. This event has emphasized the importance of ensuring that systems and facilities, which have a direct bearing on the economic prosperity of a region, are resilient in the face of natural disasters. The more resilient such systems and facilities are, the more likely the region would fare well in a natural or other disaster and be able to move forward without undue economic damage in the aftermath of a catastrophic event. As was seen in the aftermath of Sandy, disruptions to basic services such as water and electricity can have devastating effects that can put many people out of work for an extended period of time. Severe weather events can also substantially diminish agricultural production, damage fishing and aquaculture equipment and infrastructure, and disrupt environmental and recreational tourism seasons. The costs necessary to repair or replace damaged businesses, housing, and infrastructure can be prohibitive. It is for these reasons that policies, programs, and/or initiatives related to economic development need to also incorporate consideration of how to better achieve resiliency and adaptation to climate change.

It is the goal of the analysis presented in this appendix of the SCCMP-2035 to address these aforementioned changes in the economy, along with resiliency and climate adaptation issues, and their effects on economic development; to provide the foundation for a coordinated response by Suffolk County and other involved agencies and stakeholders for planning for and implementing future programs, policies, and projects. The New York Rising Community Reconstruction Program recognizes eight NY Rising Communities in Suffolk County spread out over three towns and four villages, which are coastal communities that were hit hard by Superstorm Sandy, and has identified community resilience techniques and factors to consider when planning for community redevelopment. In addition, the Federal Emergency Management Agency (FEMA) has issued guidance for integrating local natural hazard mitigation into a community's comprehensive plan. These and other resiliency and climate adaptation

techniques and recommendations have been incorporated into this economic development analysis when applicable. Detailed analyses and project recommendations can be found in the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan.

This appendix is organized into four sections to analyze current conditions, identify future areas of growth, and identify future opportunities:

- Section 2.1. Baseline Assessment and Current Economic Conditions and Trends, which will identify the key trends that have and will affect economic development opportunities;
- Section 2.2. Review of Economic Policies and Programs, which will serve to better assist the County and local municipalities in their efforts to better align past studies, plans and economic development initiatives and apply findings more effectively when responding to challenges. It will also provide guidance for the development of future programs, policies, and projects to maximize economic opportunities and achieve smart and sustainable growth;
- Section 2.3. Potential Growth Center Locations, which will present criteria to identify appropriate potential future priority growth center locations focusing on industrial, retail, and office uses; and
- Section 2.4. Findings, which will summarize the identified current and future economic development opportunities and challenges through the County.

For this analysis and research, information from sources including the U.S. Census Bureau, New York State Department of Labor (NYSDOL), and the New York Metropolitan Transportation Council (NYMTC) was used. The planning methodology presented in this chapter may be applied throughout the County by County and local municipal agencies when planning decisions arise that affect the long-term growth of the County, and is intended to help municipalities understand how to utilize economic development opportunities to best advance smart growth principles when planning for the future.

1.1. BASELINE ASSESSMENT AND CURRENT ECONOMIC CONDITIONS AND TRENDS

This section provides a brief overview of economic conditions in Suffolk County and builds on previous studies and plans conducted over the past 15 years. This section also assesses existing business and employment conditions and describes trends for major industry sectors (e.g., office and R&D, industrial, agricultural, and retail). In addition, this section illustrates how the composition of sectors has changed in the 13-year period between 1998 and 2011 and how employment is expected to grow in the mid- and long-term future (i.e., by 2020 and 2045). The

period between 1998 and 2011 has been examined because 2011 is the latest year for which employment numbers are published by County Business Patterns (CBP), and because in 1998, the Standard Industrial Classification System (SIC) changed to the North American Industry Classification System (NAICS). The updating and changes to the categories made the comparison of query results from the two systems incompatible for comparison.

1.1.1. EMPLOYMENT OVERVIEW

The total number of employed residents in Suffolk County increased substantially from the mid-1990s to the late 2000s, from approximately 700,000 to 760,000 employees at the peak year in 2007. During the recent recession starting in 2008, overall employment decreased by about 20,000 employees but employment numbers started to improve again in 2010 and 2011. In 2013, employment levels almost reached the County’s peak levels of 2007. **Figure B-1** shows the strong employment growth in Suffolk County over the past decades.

According to the Bureau of Labor Statistics, there were 743,400 employed residents in Suffolk County in December of 2013. This figure increased by 14,600 over the December 2012 figure but was still below the peak levels of 2006 and 2007.



Figure B-1: Annual Employment and Unemployment Rates, Suffolk County, 1990 to 2013

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

During the same time, Suffolk County's unemployment rate fluctuated significantly, mirroring the economic downturns and upswings from the late 1990s to the 2000s. While the recession in the early 1990s affected Suffolk County's unemployment as it did in other parts of the U.S., the downturn for the County in the early 2000s was far less pronounced than it was in the rest of the country. Even during the most recent severe recession starting in 2008, Suffolk County fared much better than the rest of the U.S. in terms of the recession's effects on unemployment rates. While national unemployment rates reached almost 10 percent during the recession, annual unemployment figures in Suffolk County did not go above 8 percent. For instance, according to the Bureau of Labor Statistics, in November 2013 the unemployment rate in the County was 6.9 percent, significantly lower than in October 2012 when the rate was 7.2 percent. Moreover, the County's unemployment rate remains lower than the overall rate in New York State and the nation for the same period.

Assessing the trends from 2001 to 2012 in greater detail shows that most people who entered the labor force in Suffolk County were absorbed by County's local economy. Between 2001 and 2012, the Suffolk County employed residents increased by approximately 45,900 employees¹ while the number of jobs grew by about 36,300.² This indicates that only about 9,600 or 21 percent of the new labor force commutes to a place of work that is outside of Suffolk County (this would predominantly be to Nassau County and New York City).

The lower than average unemployment rates during the past two recessions (the national average unemployment rate in 2002 was 5.8 percent versus 4.9 percent in Suffolk County and in 2010, 9.6 percent on a national level versus 8.7 percent in the County), combined with a stronger local employment environment, indicate that the Suffolk County economy is becoming more diverse and capable of withstanding cyclical economic swings while becoming more resilient to adverse effects on vulnerable sectors. However, based on 2008-2012 5-year ACS data, of the employed persons living in Suffolk County, 24 percent work outside of the County.

1.1.2. EMPLOYMENT SECTOR TRENDS

Over the past 11 years, Suffolk County's total employment has increased by approximately 6 percent, including both private (6.8 percent increase) and public (3.3 percent increase) sector employment. Private sector employment has grown from about 480,000 to 520,000 employees in comparison to a growth of only 1.2 percent nationwide. However, not all sectors experienced

¹ Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS)

² Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages

the same growth (see Table B-1 and Figure B-2). While many of the sectors in Suffolk County experienced double-digit growth, others declined over the past 11 years. Overall, when the expansion and decline of sectors in relation to average wages are considered, it can be concluded that the County is losing high paying jobs and replacing them with lower skill and wage jobs.

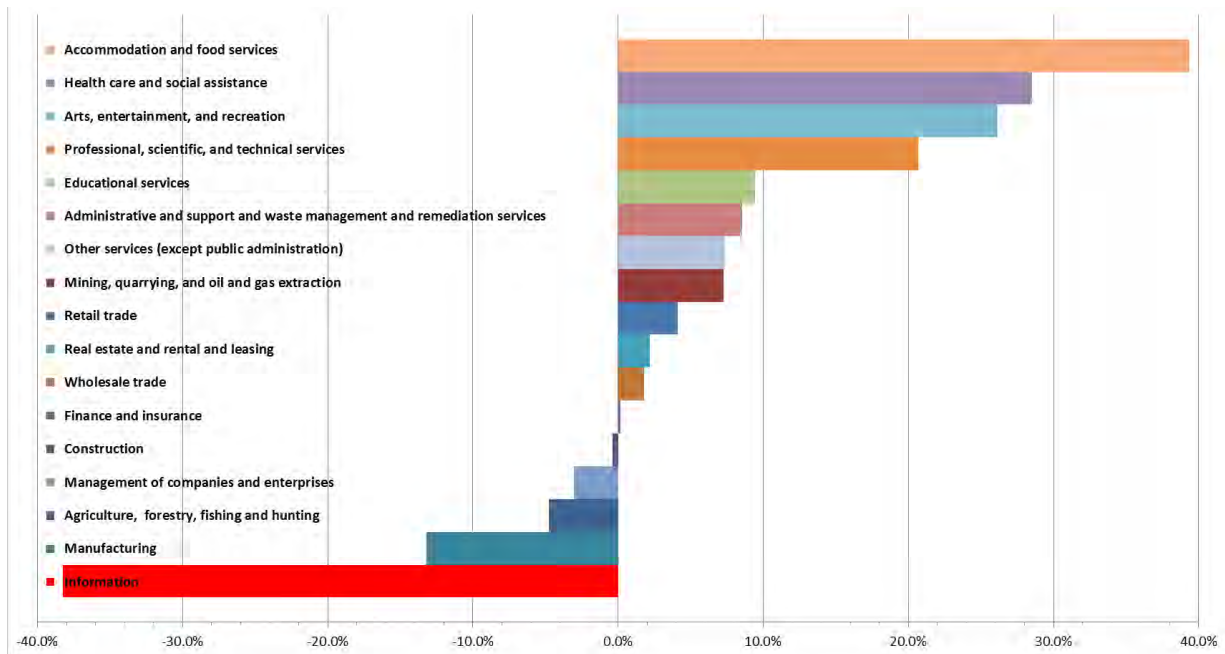


Figure B-2: Percent Change in Employees by Sector, Suffolk County, 2001 to 2012

Source: Bureau of Labor Statistics

As shown in Table B-1, the sectors with the highest employment gains were accommodation and food services (39.4 percent); health care and social assistance (28.5 percent); arts, entertainment, and recreation (26.1 percent); and professional, scientific, and technical services (20.7 percent). This accelerated growth in all four sectors aligns well with the targets identified by the Suffolk County Division of Planning and Economic Development, the Long Island Regional Economic Development Council (LIREDC), and other stakeholders to attract more businesses and jobs in information technology, green and high-tech, research (medical and non-medical), and tourism. However, two of these sectors had the lowest average annual wages per worker—\$20,119 (accommodation and food services) and \$26,916 (arts, entertainment, and recreation).

**TABLE B-1:
NUMBER OF EMPLOYEES AND AVERAGE WAGES BY SECTOR, SUFFOLK COUNTY, 2001 AND 2012**

Sector	Suffolk County			US	Average Annual Wage per Worker in County (\$)
	2001	2012	Percent Change	Percent Change	2012, in thousands
Total employment for all sectors¹	581,938	618,205	6.2%	1.6%	53,288
Private	483,899	516,941	6.8%	1.2%	51,167
Public	98,039	101,264	3.3%	3.5%	64,115
Private employment by sector:					
Agriculture, forestry, fishing and hunting	2,459	2,342	-4.8%	1.7%	34,585
Mining, quarrying, and oil and gas extraction	165	177	7.3%	49.1%	87,599
Utilities	N/A ²	1,563	N/A	-8.4%	99,173
Construction	34,676	34,536	-0.4%	-17.5%	59,430
Manufacturing	62,611	54,357	-13.2%	-27.3%	61,018
Wholesale trade	34,935	35,564	1.8%	-1.3%	73,444
Retail trade	74,348	77,417	4.1%	-2.1%	31,136
Transportation and warehousing	N/A ²	16,432	N/A	0.5%	41,254
Information	15,420	9,521	-38.3%	-25.5%	68,928
Finance and insurance	21,537	21,570	0.2%	-1.4%	148,601
Real estate and rental and leasing	4,517	4,615	2.2%	-4.6%	51,051
Professional, scientific, and technical services	34,067	41,107	20.7%	14.9%	63,932
Management of companies and enterprises	7,777	7,542	-3.0%	16.7%	94,920
Administrative and support and waste management and remediation services	33,760	36,647	8.6%	3.2%	39,439
Educational services	8,892	9,729	9.4%	38.5%	33,411
Health care and social assistance	65,010	83,535	28.5%	29.5%	47,576
Arts, entertainment, and recreation	7,967	10,049	26.1%	10.7%	26,916
Accommodation and food services	31,328	43,661	39.4%	16.5%	20,119
Other services (except public administration)	20,913	22,454	7.4%	8.1%	28,039
Notes:	2001 is the earliest year and 2012 is the latest year for which annual county-level data is available.				
	¹ Total employment includes private and public employment in all sectors (including Public Administration and Unclassified, which are not listed in this table) as reported by BLS.				
	² In accordance with BLS policy, data reported under a promise of confidentiality are not published in an identifiable way and are used only for specified statistical purposes.				
	Data for the first three sectors shown in the table was suppressed from public reporting because of the limited number of employees employed in these sectors.				
	A list of sectors and sub-sectors are provided in the appendix.				
	Green shading indicates an increase in the percent change for a category. Rose shading indicates a decrease in the percent change for a category.				
Sources:	Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages.				

The health care sector, which was already the largest sector in 2001 in terms of absolute employment numbers, experienced the largest total gain of more than 18,500 employees. The sector grew by 28.5 percent, which is similar to the sector's growth nationwide (**see Table B-1**). While a large portion of this growth can be attributed to an increase in health care service related employment in hospitals and doctor's offices, research and development activities at the County's medical institutions have also contributed to this upward trend. New investments in biomedical research and development activities in businesses associated with Stony Brook

Medical Center are just one indication that this sector is expanding.¹ Section 2.2 provides more detail on technology and innovation projects currently funded or underway in Suffolk County.

Growth in professional, scientific, and technical services is also an indication that activities connected to research and innovation are on the rise in Suffolk County. Growth in professional, scientific, and technical related sectors was 5.8 percentage points higher than the national average.

Notably, these three sectors continued to expand not only over the 13-year time frame but also within the past three years when most sectors experienced the effects of the recession. An analysis by the Long Island Index in 2012 confirms that the following three sectors—biomedical, health services, and education—experienced growth in the first quarter of 2012.²

Strong growth in the accommodation and food services (39.4 percent in Suffolk County versus 16.5 percent nationwide) as well as the arts, entertainment, and recreation (26.1 percent in the County compared with 10.7 percent nationwide) sectors, indicates that the tourism industry is expanding in the region.

Other sectors, although not with the greatest increases in employment in Suffolk County over the past 11 years, achieved better growth in Suffolk County than the rest of the U.S. For example, on a nationwide level, retail employment declined by about 2 percent, while the sector grew by approximately 4 percent in Suffolk County, indicating a strong desire for retailers to locate in Suffolk County where its affluent population with a median household income of over \$86,000³, has a high amount of disposable income. Similarly, the County's real estate and rental leasing sector did better than in the U.S. overall from 2001 to 2012, increasing by approximately 2 percent, compared with a nearly 5 percent decrease nationwide.

There are also significant differences between Suffolk County and national growth rates in the two related sectors of management of enterprises and companies (a 3 percent decrease in the County compared with an approximately 17 percent increase in the U.S.), and administrative and support and waste management and remediation services (an 8.6 percent increase compared with 3.2 percent). The management of enterprises and companies sector includes the third highest average annual wages per worker at \$94,920. In addition, the County's

¹ Long Island Economic Development Council: Status update, 2012

² Long Island Index: "Growth Clusters", last accessed 11/25/13, <http://www.longislandindex.org/explore/4f1d9535-d278-4cc1-86f6-f4c0c5ef30ba>.

³ American Community Survey (ACS), 2012

educational services sector increased by only 9.4 percent compared with 38.5 percent in the U.S. overall.

Alternatively, there are also a few industry sectors where employment has decreased over the past 11 years. For example, employment in the manufacturing sector declined by approximately 13.2 percent, from about 62,600 to 54,400 jobs. This sector includes relatively high-paying jobs (\$61,018 in average annual wages per worker). However, Suffolk County still fares better than in many places across the U.S., and although Suffolk County's loss in manufacturing employment was significant, the entire United States lost more than 27 percent of its manufacturing employment within the same time period. While the biggest loss occurred after 2000, employment in manufacturing stabilized until 2007. After 2007 the employment decline in the manufacturing sector started again. While some of the contraction of the sector was expected due to increased global low-wage competition and a general increase in efficiency across the sector, Suffolk County needs to counter this trend to retain its manufacturing skill base. Doing so would not only provide much-needed jobs for local residents but also would help the County to remain competitive in the identified technology-focused target sectors: High-Tech/Green-Tech Industry, Innovation, and Advanced Manufacturing. Fully capturing the job-creating potential of the knowledge economy requires not only the research and development (R&D) to be done locally, but the manufacturing to be done locally as well. Local advanced manufacturing capacities allow R&D facilities in Suffolk County's innovation centers to test ideas and translate them into products that are ready for the global market place.

According to the County's "Planning Update, November 2013," the County is well positioned to support the growth of the high technology industry. It is home to Brookhaven National Laboratory (BNL), an atomic energy research facility that employs 3,050 people. Stony Brook University manages the Long Island High Technology Incubator, a 62,000 square foot facility and laboratory which provides new technologically-innovative companies with support services and resources to foster their growth, in addition to other advanced technology centers. The County is also home to a number of high technology firms, including those in the information sciences such as CA Technologies and Canon. CA Technologies employs more than 1,500 people at its Islandia headquarters in the County. The State Legislature has authorized a 30,000 square foot, multi-tenant expansion to the 102,000 square feet of laboratory space at Broad Hollow Bioscience Park at Farmingdale State College, an incubator for biotech companies. Accelerate Long Island, an effort created by the Long Island Association (LIA), connects the region's research institutions with business to foster high-tech development and create jobs. Canon

recently established its North and South American headquarters in Melville, located on Walt Whitman Road at the intersection of the Long Island Expressway South Service Road. Approximately 700 employees have moved into the 700,000 square foot facility, and an additional 600 more are expected to move in soon. A total of 2,000 immediate and future job openings are anticipated at the Canon headquarters.

LIREDC's "A New Vision for Long Island's Economy: The Strategic Economic Development Plan for Nassau and Suffolk Counties, 2011 (LIREDC Plan) also asserts that Long Island has a wealth of engineering and Science, Technology, Engineering, and Mathematics (STEM) educational resources, particularly at institutions of higher education. These include a mature public College of Engineering and Applied Sciences at Stony Brook and a pre-engineering and associate degree technology programs at Suffolk County Community College. In addition, BOCES (Boards of Cooperative Educational Services) provides a diverse menu of career and technical education offerings that are beyond the means of most school districts, including computer technology, electrical trade and alternative energy, and welding and metal fabrication. Another regional strength is a technically-oriented support system that includes Local Workforce Investment Boards (LWIBs), Long Island Works, and the Long Island Forum for Technology (LIFT). In 2007, LWIBs and LIFT launched Connect Long Island, a partnership that has since grown to include Long Island leaders in government, education, and industry. Moreover, a proposal called EngINe: Increase Engineering Enrollments will provide challenge funding to enable the engineering institutions to obtain additional faculty and other teaching resources. The investment will increase engineering graduates across the spectrum of disciplines by 175 a year in the first two years, and a similar number in the second two years.

While the ongoing impact of the stagnant economy is limiting educational opportunities – leaving many students and their families unwilling to pay the additional costs of attending college out of town - this environment also creates the opportunity to attract Long Island's high school graduates to Long Island engineering and technical programs. The pressure on students to choose potentially high-paying fields creates an opportunity at the K-12 level to attract more Long Island kids to STEM programs, where the skills they learn will prepare them for such programs at the college level. The Long Island Community STEM program will bring STEM education and encouragement into the school districts of every one of Long Island's distressed areas.

The sector with the second-largest employment loss is the information sector, which also has relatively high-paying jobs (\$68,928 in average annual wages per worker). In Suffolk County, employment in this sector has decreased by more than 38 percent during the past 11 years. This marks a more pronounced loss when compared with the rest of the U.S. where

employment in this sector decreased by approximately 25 percent. The Long Island Innovation Index study, paints a differentiated picture—at least for all of Long Island—attributing the loss in employment to Information subsectors Computer Integrated System Design, Computer Software Development Packaging and Prepackaged Software, and Data Processing, which lost substantial employment between 2000 and 2009. However, the report also points out that the Communication Services and Online Service Providers and Computer Related Services subsectors grew despite the general decline in the sector.¹

Within Suffolk County, employment in this sector has fluctuated significantly. In the late 1990s employment in the information sector was on the rise. During and in the immediate aftermath of the “dot com” crisis in the early 2000s, these gains were lost and the sector’s decline continued well into late 2000s. It will be important for the County to reverse this trend, since many of the targeted, high-value activities in high-tech, green-tech, and advanced manufacturing depend on advanced computer skills.

Financial sector employment—the highest-paying sector at \$148,601 in average annual wages per worker—was stagnant from 2001 to 2012. Over the same time period, this sector has proven to be the most affected by cyclical economic changes, with rapid growth and fast declines in response to changing conditions. Between 1999 and 2002, the sector’s employment increased by 22 percent only to decrease by 13.4 percent over the following three years. By 2007, the sector had reached another peak, employing almost 29,000 people. By 2010, it had shrunk again to 23,500 employees. Given the County’s close proximity to New York City, one of the world’s largest financial sectors, these fluctuations will likely continue and remain more pronounced than in other parts of the U.S.

Construction employment in Suffolk County also remained relatively stagnant over this time period, while the national level decreased by 17.5 percent. As expected, this sector peaked in Suffolk County in 2008 and lost a significant number of jobs in the aftermath of the recession but still employs more people than in 2001.

The wholesale trade sector was one of the County’s largest sectors throughout the 2000s, employing approximately 50,000 employees. It was only in 2010 that the sector lost about 20 percent of its jobs, and decreased from approximately 50,000 employees in 2009 to 40,000 in 2010. The decline of this sector’s employment is not only linked to manufacturing activity, but also to the decrease in retail sector employment between 2009 and 2011.

¹ Long Island Index: Long Island Innovation Index, 2012

1.1.3. TOURISM, FISHING, AND AGRICULTURE

Long Island is well-known for tourism, fishing, and agriculture. In fact, the LIREDC Plan recognizes the Island's unique natural resources, and the important role of tourism and harvest-based agriculture and fishing industries. One of the key strategies for economic growth is to produce a new generation of sustainable, well-paying jobs in the legacy sectors of agriculture, aquaculture, fisheries, and tourism by expanding access to critical infrastructure, recreation facilities, research partnerships, and workforce training.

Tourism in Long Island is a \$5.1 billion industry, supporting more than 74,128 jobs. In the entirety of New York State, only New York City generates more tourism dollars. Nearly 6% of all Long Island employment is directly or indirectly tied to tourism. The region's tourism is roughly evenly split between Nassau and Suffolk Counties. According to a 2012 analysis conducted by *Tourism Economics*, an *Oxford Economics Company*, Suffolk-specific tourism generates \$2.7 billion in revenues, \$1.4 in labor income, 38,447 jobs, \$186 million in local tax revenue, and \$149 million in state tax revenue. Tourism revenue is generated through spending on transportation, lodging, food service (restaurants and bars), recreational activities (parks, beaches, golf, concert, theaters, amusement parks, museums, etc.), retail sales, and service stations.

The tourism industry has fed the continued success of Suffolk County's agriculture and fishing industries. Visitors to Suffolk County come not only for the beaches and the Hamptons – they come for North Fork Wine Country, farm stands, "Pick-Your Own" operations and harvest festivals, charter boats, and restaurants featuring local produce and seafood.

The agricultural character of Suffolk County is unique to this country. While access to land is limited, and affordability is a concern, Long island hosts rich agricultural soils and a temperate climate suited to a diverse palate of agricultural industries. Suffolk County enjoys some strategic advantages in the marketplace thanks to the nature of local tourism, weekend travel, proximity to lucrative markets (Manhattan, Brooklyn, the Hamptons) and the strong "locavore" movement (or the trend toward eating food that is locally produced). When combined with local seafood and poultry, Long Island has a distinctive locavore brand that lends itself to a robust agritourism industry. The most notable of our agritourism destinations, the tasting rooms and vineyards in Long Island Wine Country, attracts 1.2 million annual visitors who spend \$90 million during their visits, \$33.3 million directly at the wineries¹. The North Fork of Long

¹ Source: Long Island Wine Council

Island was recently named one of the top ten wine tasting destinations in the world by *Wine Enthusiast* magazine.

The LIREDC Plan recognizes that while agriculture is present and strong on the Island, it needs greater support in order to transform conventional agriculture into more sustainable practices and to transport produce to communities in need of fresh produce. Most of Long Island's agricultural activity is in Suffolk County. In 2007, Suffolk County had 585 farms with an average size of 59 acres. According to the County's "Planning Update, November 2013," as of 2007 there were 34,000 acres of farmland in the County. While most of the farms are quite small (less than 10 acres), several are rather large with two farms over 1,000 acres in size. Regardless, due to the presence of farms with greater specialization and direct market appeal, agricultural activity on the Island is unique compared with other areas of the state. Despite Long Island's reputation as the birthplace of suburbia, Long Island maintains an important and rich agricultural legacy. Suffolk County remains #1 in the state of New York in terms of total agricultural production, with \$242.9 million in production.¹ According to the 2012 Bureau of Labor Statistics estimates, 2,342 people are employed in agriculture in Suffolk County. The strength of Suffolk County agriculture can be found in its sod, nursery, greenhouse, and floriculture industry, which accounts for 75% of all Suffolk County agricultural production. These commodities feed Suffolk County's robust landscaping industry, an industry of almost 1,400 separate establishments, 6,700 employees, and \$257 million in salaries.² Additionally, Suffolk County remains a major food producer – the County ranks #1 in New York state production of pumpkins, tomatoes and cauliflower and it is the third largest producer of strawberries, peaches, and grapes.

Suffolk County enjoys a diversity of farming practices that is not frequently seen in either New York or the rest of the country. This diversification will continue to fuel innovation and the adaptation of environmentally-friendly practices in Suffolk County agriculture. It should also fuel profits. Long Island farms are efficient with their limited acreage – they produce sales of \$7,249 per acre, more than ten times the NY state average of \$616 per acre.

A recent County report, "The State of the Suffolk County Agriculture Industry," has identified both persistent and strong opportunities within the Suffolk agricultural industry. While 59 percent of farmers are very concerned about the future profitability of farming, 42 percent are very concerned about access to affordable land, and 60 percent are very concerned about the

¹ 2007 United States Census of Agriculture

² Bureau of Labor Statistics data extracted on March 26, 2014

overall loss of farming in the County, nearly three-quarters of the survey respondents have reached gross sales equal to or exceeding pre-recession levels, and incumbent farmers are expecting to increase, rather than decrease, the size of their operation by a 2 to 1 margin. Suffolk County's agricultural producers remain enthusiastic about the occupation of farming. Farming families have been on Long Island for generations and families hope to pass along these practices to a new generation of farmers who are inspired by a "foodie" ethos that values locally-raised produce grown in an environmentally sustainable manner. Their ranks are complemented by greenhouse, sod and nursery-stock growers who are embracing exciting new technologies and methods such as bio-controls, hydroponics and aquaponics, and renewable energy sources. Add into this equation wine-makers who are quickly gaining worldwide acclaim, new agritourism and direct retail marketing opportunities, a growing shellfish aquaculture industry, and a renewed vigor in equine operations, and the industry seems robust indeed.

However, as the County's 2013 survey indicates, increased land values fueled by developmental pressures threaten agricultural sustainability, as owners of farmland or shorefront property where aquaculture could be practically considered are under financial pressure to sell their property to developers. USDA Data indicates that farm real estate values have grown by 51 percent since 2003.¹ These pressures grow increasingly acute when property landowners pass away and inheriting landowners are faced with substantial estate taxes that may rule out continued agricultural usage.

The availability of farm labor also challenges the Suffolk County agricultural industry. Farming is an extraordinarily labor-intensive activity and technological advances can only minimize the need for human labor to a certain extent. The continued need for labor in the farming community speaks highly of its economic potential and impact within the Suffolk County community. Additionally, environmental concerns, ranging from deer management, to global climate change, to severe weather events, to increased pollution controls and regulation also define, and sometimes confine, the local agricultural industry.

Navigating these challenges will prove crucial in our attempts to stem the decline in Suffolk County farmland acreage. Suffolk County voters, through support of their legislators and votes on bond referendums funding farmland preservation, have demonstrated their continued support for Suffolk County farming. Whether it is the scenic vistas, the "U-pick" operations, the tourism opportunities in Long Island Wine Country, or simply the appreciation for locally-

¹ Northeast State Region, according to the "NorthEast Agriculture 2014 Insights and Perspectives by Farm Credit East.

sourced food, citizens have proved with their ballots and their pocketbooks an appreciation for Suffolk County farmers.

The Suffolk County fishing industry is also an important segment of the Long Island economy and one, like agriculture, that feeds off Suffolk County's important tourism industry. According to 2011 National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center data, ocean-related businesses provided 4.4% of total jobs in Suffolk County. 85.4% of those ocean-sector jobs were related to tourism and recreation, and 12.1% were related to Marine Transportation. The marine industry produced 26,690 jobs, \$776 million in wages, and approximately \$1 billion in goods and services sold. Since 2005, the tourism and recreation component has created approximately 4,000 new jobs, a 19% increase. The Suffolk County commercial fisheries industry landed 26,892,905 pounds of live catch in 2012, for a landed value of \$33,800,657.¹ Measured in pounds, Suffolk County's top landings include Longfin Squid, Scup, and Silver Hake. Measured in dollar value, Suffolk County's top landings are Longfin Squid, Golden Tilefish, and Sea Scallops.²

The LIREDC Plan recognizes that there is a tremendous opportunity to expand agriculture, tourism, and fisheries through strategic investment, and that natural assets are a key component of economic development. It has been established that fish and shellfish populations surrounding the County have been stressed by overfishing and overharvesting, resulting in the loss of substantial numbers of jobs, and these effects can be exacerbated in the aftermath of storms such as Superstorm Sandy. The success of the region depends on sound management of its natural resources, and, in Suffolk's case, the ability to rebound from natural disasters. The increased frequency of major climactic events can wreak havoc on the tourism season by scaring away potential tourists and reducing local families' disposable incomes, as repair and reconstruction costs gain primacy in household budgets. In the agricultural industry, major storms and flooding can destroy crops and critical storage, processing, and production infrastructure. Climate disruptions in the fisheries, both one-off events and sustained changes, can alter migratory fishing patterns, introduce predatory species, disrupt traditional tourism seasons, and destroy marine infrastructure including, boats, marinas, aquaculture netting, and other assorted gear. As an example, Superstorm Sandy was estimated to incur \$58 million to New York state's recreational fishing sector (\$36 million marinas, \$17 million charter boats, \$5

¹ Atlantic Coastal Cooperative Statistics Program (ACCSP)

² The ACCSP does not regularly breakdown commercial fisheries landings by County, but the top landings are estimated by industry experts at Cornell Cooperative Extension of Suffolk County.

million bait & tackle shops) and \$19 million to the commercial fishing sector (\$9 million seafood dealers, \$3 million to commercial fishermen, \$5 million to seafood processors).¹

As such, infrastructure improvements in the tourism, agricultural, and fishing industries must be built with an eye towards coastal and storm-based resiliency. For example, wetlands preservation, eel grass plantings, open space and farmland purchases, dredging practices, aquaculture investments, marina improvements, and habitat restoration must act in concert with our efforts to protect and insulate our legacy industries from unnecessary hardship. Tourism, agriculture, and fishing are always subject to weather proclivities, but wise planning and management can mitigate damages County-wide.

1.1.4. BUSINESS SECTOR TRENDS

Table B-2 illustrates that trends in the composition of business sectors generally mirror the major trends in sector employment, over the period between 2001 and 2012. While there were significant gains in the accommodation and food services; health care and social assistance; and arts, entertainment, and recreation sectors, the biggest gains over the period between 2001 and 2012 were in management of companies and enterprises and educational services. While businesses in the management of companies and enterprises increased by nearly 74 percent, employment in this sector actually decreased by 3 percent over the same time period. Employment in the education sector increased by 9.4 percent, while the number of businesses in the same sector increased by over 30 percent. Similarly, while there was a significant gain in establishments providing administrative and support and waste management and remediation services (27.1 percent), employment in this sector increased by only 8.6 percent from 2001 to 2012. The number of businesses in accommodation and food services increased by only 17.4 percent, which is significantly lower than the employment growth of over 39 percent in that sector. Similar to employment, establishments in the manufacturing and information sectors experienced significant declines, by 12.3 and 15 percent, respectively.

In addition, between 2001 and 2012, the share of businesses in the financial sector has increased by 8.4 percent while employment has decreased by 0.2 percent, suggesting that primarily smaller financial offices with few employees have emerged. In the retail sector, while employment in the retail sector was still growing at over 4 percent, the number of shops

¹ National Oceanic and Atmospheric Administration, Office of Science & Technology and Northeast Fisheries Science Center, March 15, 2013, "Regional Impact Evaluation: An Initial Assessment of the economic Impacts of Sandy on New Jersey and New York Commercial and Recreational Fishing Sectors.

actually decreased by nearly 2 percent, which suggests that the trend to develop larger stores continued during this period.

**TABLE B-2
NUMBER OF BUSINESSES BY SECTOR, SUFFOLK COUNTY, 2001 AND 2012**

Sector	Suffolk County			US
	2001	2012	Percent Change	Percent Change
Total establishments for all sectors¹	44,711	50,524	13.0%	14.2%
Private	44,014	49,774	13.1%	14.3%
Public	697	750	7.6%	14.0%
Private establishments by sector:				
Agriculture, forestry, fishing and hunting	248	248	0.0%	-5.4%
Mining, quarrying, and oil and gas extraction	20	18	-10.0%	31.8%
Utilities	N/A ²	45	N/A	6.3%
Construction	6,046	6,690	10.7%	-3.8%
Manufacturing	2,373	2,082	-12.3%	-15.8%
Wholesale trade	3,302	3,131	-5.2%	7.1%
Retail trade	6,371	6,254	-1.8%	-1.8%
Transportation and warehousing	N/A ²	1,046	N/A	6.2%
Information	655	557	-15.0%	-5.6%
Finance and insurance	2,298	2,492	8.4%	12.7%
Real estate and rental and leasing	1,103	1,274	15.5%	11.8%
Professional, scientific, and technical services	4,567	5,466	19.7%	27.9%
Management of companies and enterprises	119	207	73.9%	51.3%
Administrative and support and waste management and remediation services	2,804	3,564	27.1%	22.4%
Educational services	455	595	30.8%	52.2%
Health care and social assistance	3,688	4,538	23.0%	33.7%
Arts, entertainment, and recreation	659	838	27.2%	20.0%
Accommodation and food services	2,712	3,183	17.4%	21.5%
Other services (except public administration)	4,050	4,533	11.9%	32.2%
Notes:	<p>2001 is the earliest year and 2012 is the latest year for which annual county-level data is available.</p> <p>¹Total establishments include private and public establishments in all sectors (including Public Administration and Unclassified, which are not listed in this table) as reported by BLS.</p> <p>²In accordance with BLS policy, data reported under a promise of confidentiality are not published in an identifiable way and are used only for specified statistical purposes.</p> <p>Data for the first three sectors shown in the table was suppressed from public reporting because of the limited number of employees employed in these sectors.</p> <p>A list of sectors and sub-sectors are provided in the appendix..</p> <p>Green shading indicates an increase in the percent change for a category. Rose shading indicates a decrease in the percent change for a category.</p>			
Sources:	BLS, Quarterly Census of Employment and Wages.			

1.1.4.1. Location/Clusters

Understanding the geographic distribution of employment is a major factor when planning for smart growth. Major job clusters determine commuting patterns, potential demand for housing in the vicinity of the clusters, and potential supporting infrastructure. Businesses and employment in Suffolk County followed the general historic settlement patterns on Long Island. Business activities in the middle of the last century were concentrated in the western portion, where spillover from the more densely developed Nassau County formed the first dense development clusters in Suffolk County. Business also followed the Long Island Rail Road, which was (and continues to be) an important mode of transportation to deliver freight and move

people east to west. In particular, the distribution of industrial uses that dominated in the 1960s and 1970s illustrates that pattern and is still visible today. For instance, Hauppauge Industrial Park, the largest on Long Island and the second largest in the nation, was created in the early 1960s. The park has more than 1,300 companies, and employs over 55,000 Long Islanders. The Hauppauge Industrial Park is a present day cornerstone of Suffolk communities' built form. It was the first planned industrial park on Long Island and, at the time, the largest in the United States.

Figures B-3 through B-5 illustrate the geographic change in employment distribution in Suffolk County. In 2000, the major employment centers were still primarily found in the western portion of the County. The Towns of Huntington, Smithtown, Babylon, Islip, and the western portion of Brookhaven were home to the employment clusters with the largest number of employees, while the eastern portion of the County showed higher employment concentrations only in select areas such as Riverhead.

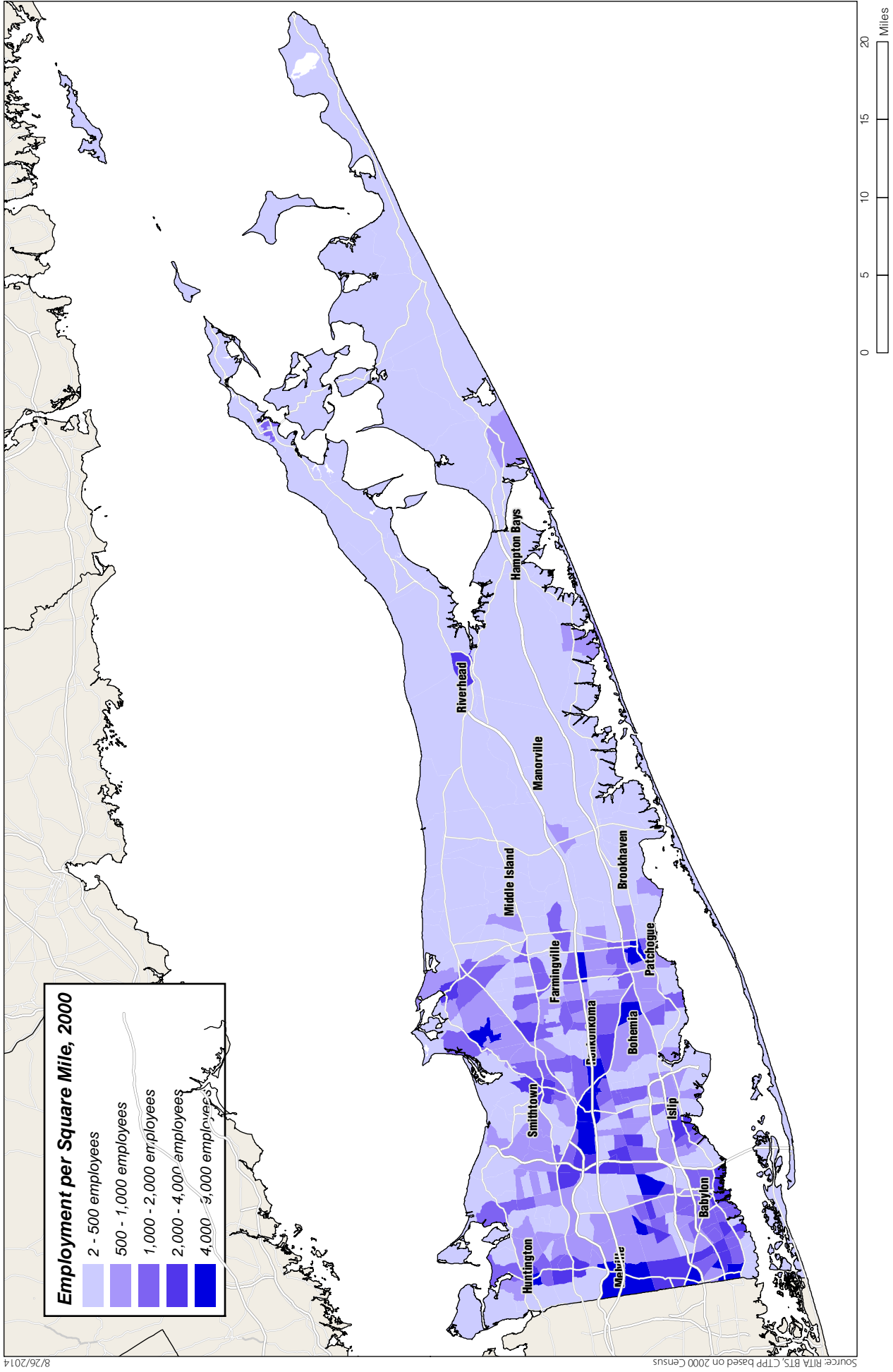
Ten years later, as shown on **Figure B-4**, employment clusters have become somewhat denser, but the highest-density employment clusters remain in areas such as Melville, Hauppauge, and Stony Brook.

Figure B-5 presents professional and technical employment per square mile in the County in 2000. The highest-density clusters of professional and technical employment were in western Suffolk County, in areas such as Melville and along the Long Island Expressway in the Towns of Smithtown and Islip.

Figure B-6 illustrates the clusters of professional and technical occupations in 2006 to 2010. New areas of higher-density clusters have emerged since 2000 in western Suffolk as well as in some areas on the South Fork.

1.1.5. EMPLOYMENT FORECAST

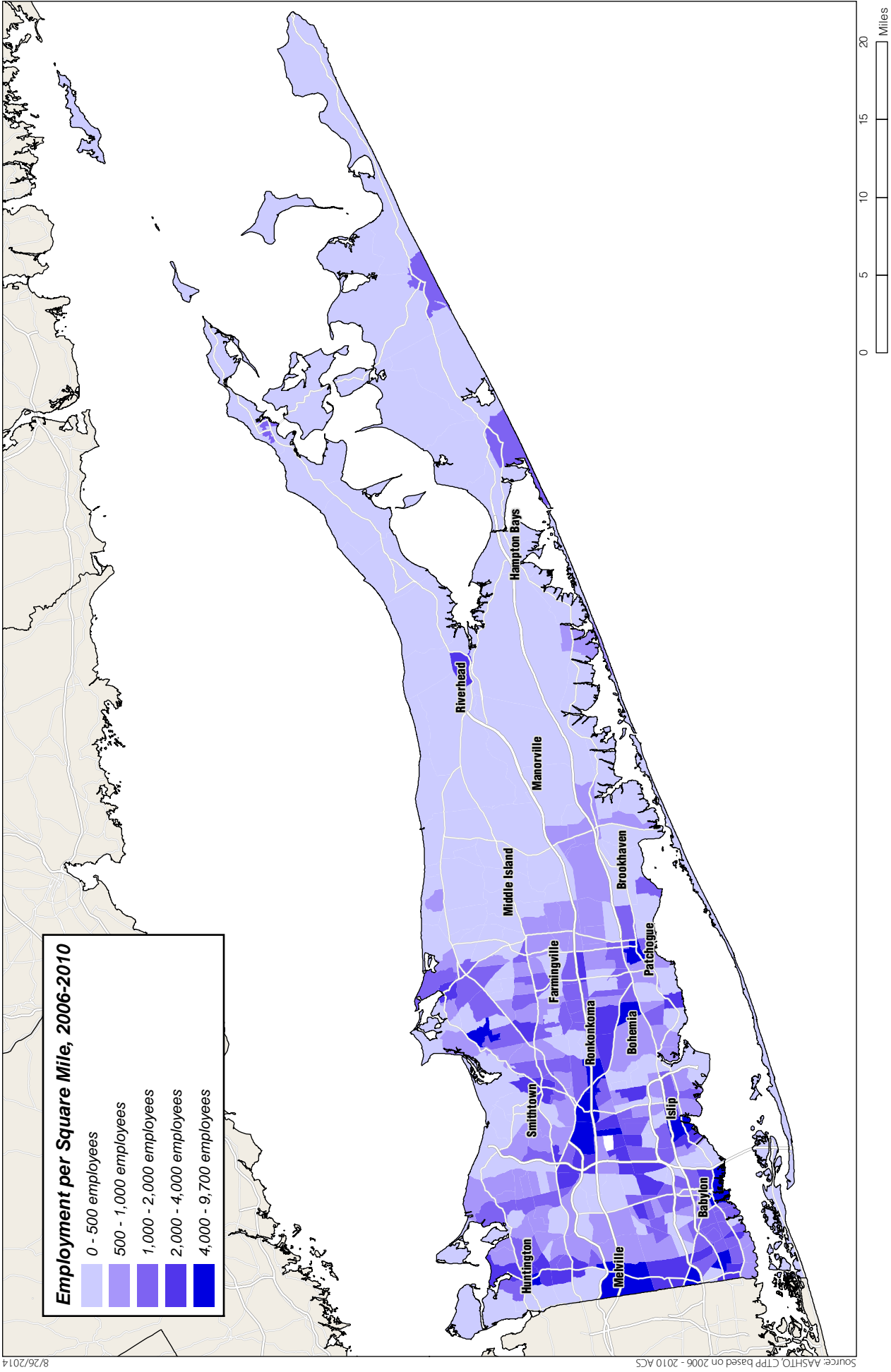
In terms of future private sector employment, Suffolk County is projected to continue to grow, albeit at a slower rate than it has over the past decade (2000 to 2010) (see **Figure B-7**). Projections by NYMTC show that by 2020, the County's employment is estimated to be at 600,000 employees working in Suffolk County. This represents an increase of approximately 80,000 employees since 2010 (compared with approximately 30,000 between 2000 and 2010 based on BLS data). By 2030, NYMTC projects that Suffolk County's economy will have added an additional 55,000 employees and is expected to have reached a total of about 713,000 employees by 2040.



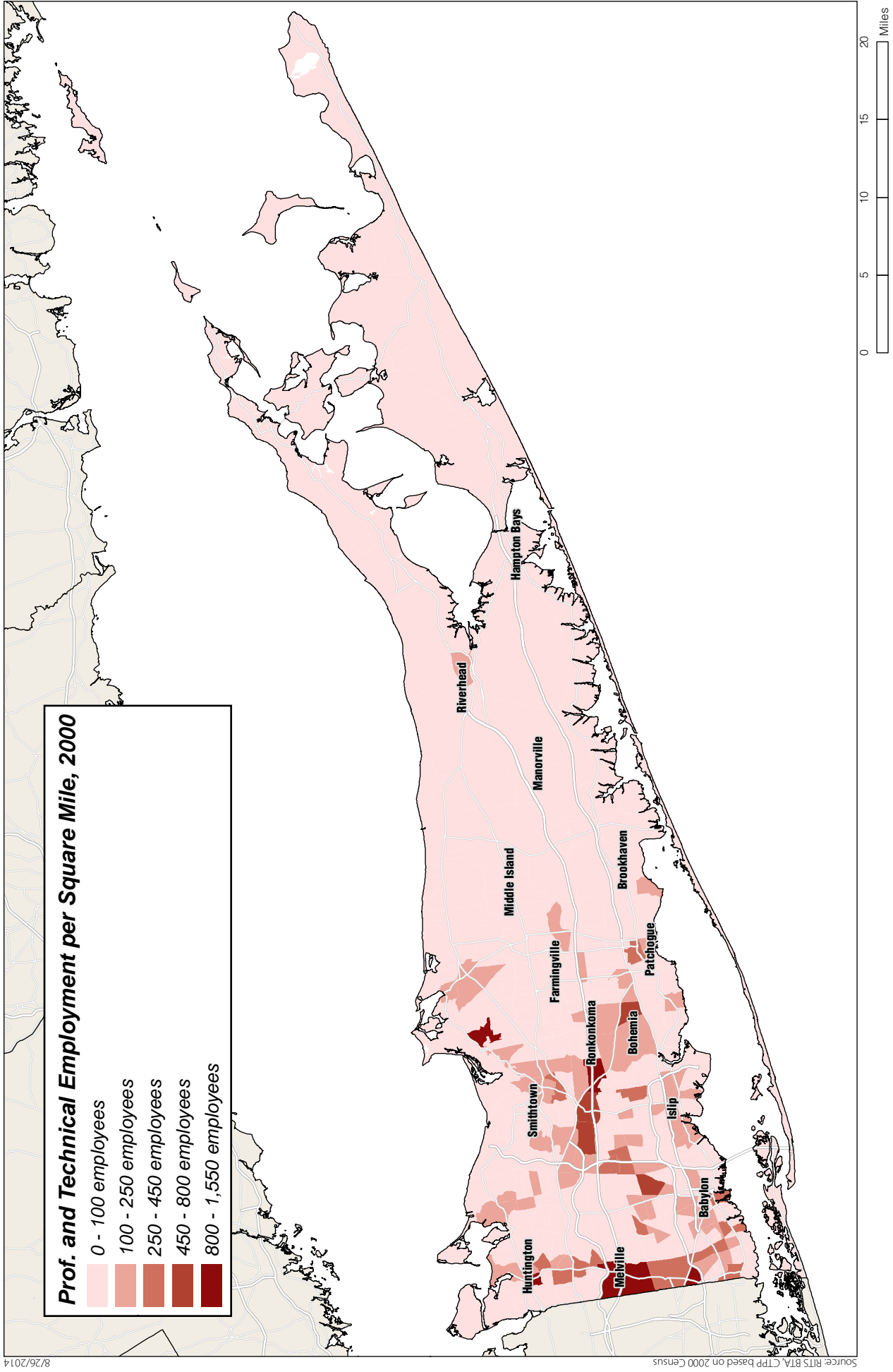
8/26/2014

Source: RTA BTS, CTPP based on 2000 Census

Employment Distribution, 2000
Figure B-3



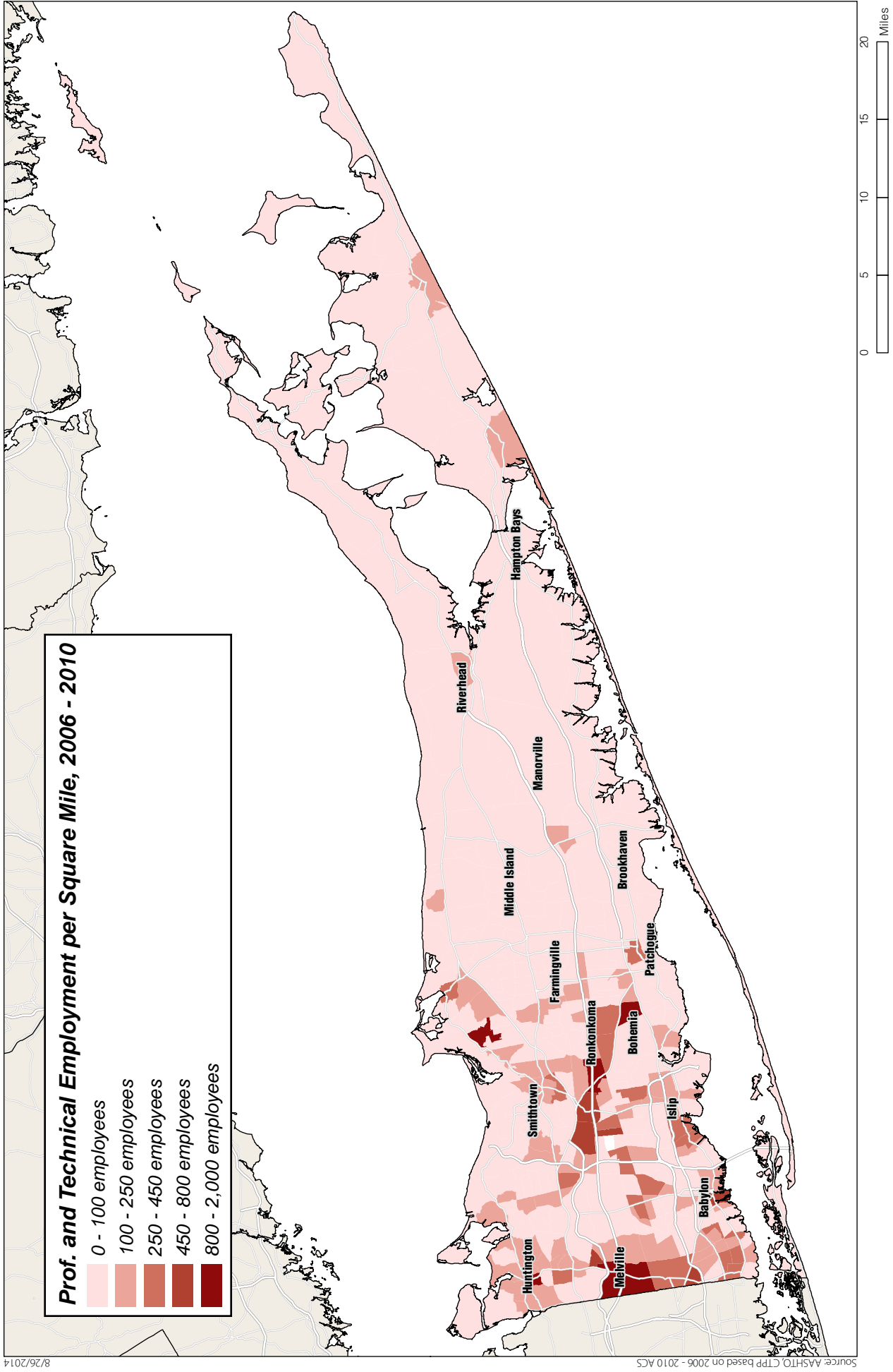
Employment Distribution, 2006 to 2010
Figure B-4



8/26/2014

Source: RTIS BTA, CTPP based on 2000 Census

Professional and Technical Employment, 2000
Figure B-5



Professional and Technical Employment, 2006 to 2010
Figure B-6

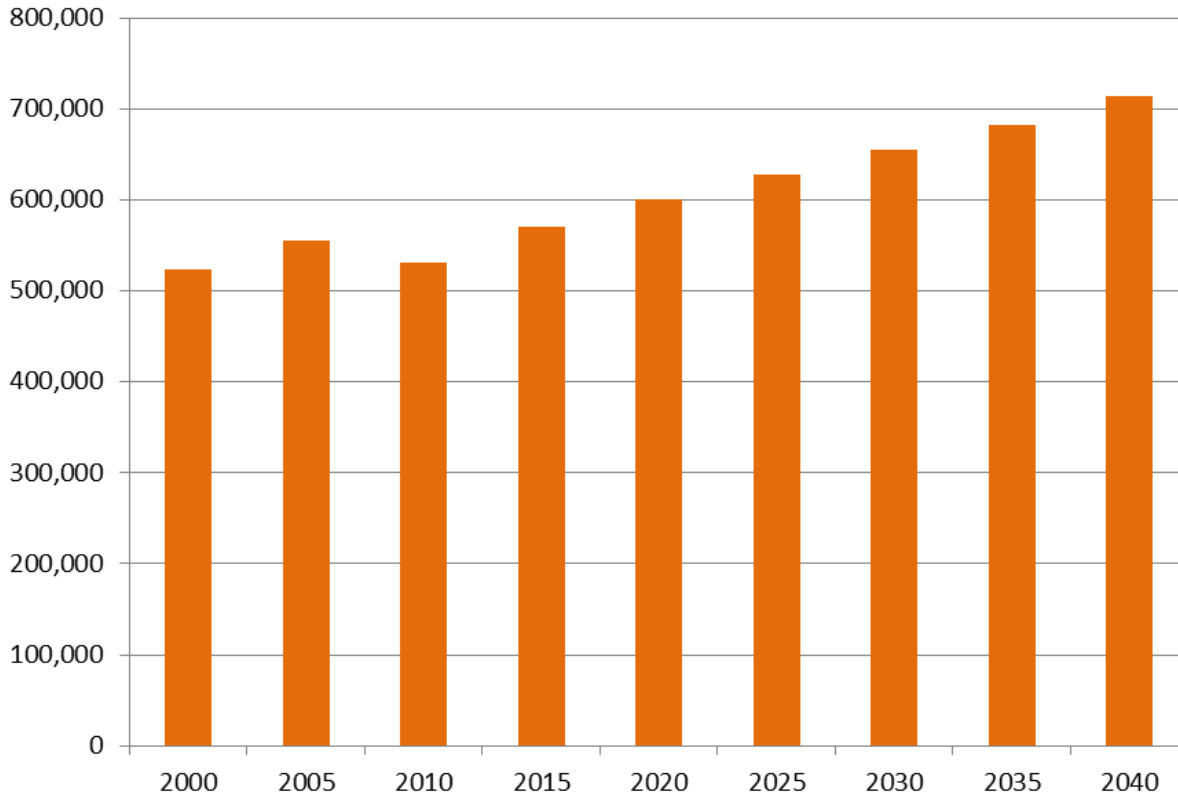


Figure B-7: Private Sector Employment Forecast, Suffolk County, 2000 to 2040

Source: New York Metropolitan Transportation Council and AKRF

Note: To project employment growth, the 2010 total employment number was used as a baseline. To project employment for future years, employment growth rates from NYMTC were applied to baseline.

1.2. ECONOMIC POLICIES AND PROGRAMS

This section provides a cultural, economic, and demographic profile of Suffolk County and the greater Long Island region drawing on a comprehensive review of major studies, programs, and initiatives published or implemented between 2000 and 2013 that aimed to strengthen Suffolk County’s economy. This section also provides a review of the economic development policies and programs initiated by government agencies and major non-government organizations as identified in the studies. The programs and policies are summarized in **Table B-3** and give an overview of current efforts to provide for easier comparison and coordination of activities. Major overarching policy themes addressed in the past initiatives were identified and used as a baseline to evaluate progress and determine where additional efforts are still needed.

Suffolk County and other public and private stakeholders have recognized the need for more effective and coordinated economic development policies and have addressed this need through a number of studies, plans, and initiatives. The various documents summarized in **Table B-3** were developed by regional planning and economic development agencies, including but not limited to the Suffolk County Department of Planning, the Long Island Association, the Long Island Regional Economic Development Council, and the Long Island Regional Planning Council. The various plans and reports address topics ranging from smart growth projects and initiatives in Suffolk County to identifying recent retail trends, reviewing growth areas, outlining open space policy goals, highlighting strategies to address regional transportation challenges, and identifying opportunities for sustainable, economic growth and business retention in the region. Other studies, such as the “Long Island 2035 Regional Comprehensive Sustainability Plan—Technical Report,” also examine recent demographic, employment, and quality of life trends in Suffolk County and the greater region to develop forecasts for 2035.

After reviewing the descriptions, study goals, and recommendations outlined in the plans, programs, projects, studies, and initiatives identified in **Table B-3**, seven common policy themes were identified:

- Housing (H)
- Regional Coordination and Collaboration (RCC)
- Education and Training (ET)
- Infrastructure (I)
- Target Sector (TS)—Agricultural (A), High-Tech/Green-Tech Industry (Tech), Innovation (Inn), Advanced Manufacturing (Mfg), and Tourism (T)
- Natural Resources (NR)
- Resiliency and Adaptation (RA)
- Quality of Life (QL)

The various plans and programs address demographic and economic trends, as well as policies and projects addressing both local and regional challenges to fostering a sustainable economy. However, these eight themes stand out as fundamental policy issues that the plans address. While some plans address several of these policy themes, other plans address only a few.

**TABLE B-3
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY**

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Smart Communities Through Smart Growth: Applying Smart Growth Principles to Suffolk County Towns and Villages (Suffolk County Planning Commission)	Mar-2000	Document outlines Smart Growth principles and projects applying these principles in Nassau and Suffolk Counties, as well as state and federal programs that support Smart Growth initiatives.	To highlight projects implementing Smart Growth principles in local communities to serve as a reference document for future Smart Growth initiatives.	H	<ul style="list-style-type: none"> Encourage a mix of land uses and mixed-use buildings. Take advantage of compact building sizes and create a range of housing opportunities.
				RCC	<ul style="list-style-type: none"> Encourage consultation between communities. Make development decisions predictable, fair, and cost effective. Utilize federal and state programs that encourage Smart Growth principles, such as: 1) Sustainable Challenge Grants, 2) GSA Good Neighbor Program, 3) USDOT TEA-21 funding, and 4) Traditional Neighborhood Development (TND) Fund financing.
				I	<ul style="list-style-type: none"> Provide a variety of transportation choices.
				NR	<ul style="list-style-type: none"> Preserve open space and natural resources Continue to utilize TDRs, Cluster Zoning, and Conservation Easements to protect natural resources and the preservation of open space.
				QL	<ul style="list-style-type: none"> Direct development to strengthen existing communities. Create pleasant environments and attractive communities that are pedestrian oriented and give residents a sense of pride in their communities by encouraging uniform design conditions.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Smart Growth Policy Plan for Suffolk County (Suffolk County Planning Commission)	Oct-2000	Document examines some of the various laws, regulations, policies and programs of Suffolk County and measures them against smart growth principles to recommend changes that encourage smart growth.	Based on the Smart Growth principles identified in March 2000, the document outlines 43 recommendations grouped under 8 headings to foster and support Smart Growth initiatives.	H	<ul style="list-style-type: none"> • Provide for a variety of housing choices.
				RCC	<ul style="list-style-type: none"> • Encourage consultation and collaboration among communities. • Encourage permitting processes which are predictable, certain, efficient, and final. • Ensure consistency of government policies and program.
				I	<ul style="list-style-type: none"> • Provide for transportation choices.
				NR	<ul style="list-style-type: none"> • Preserve open spaces, natural and historic resources and working farms.
				QL	<ul style="list-style-type: none"> • Direct development to strengthen existing communities. • Encourage compact and orderly development.
Shopping Centers and Central Business Districts (CBD), Suffolk County, NY (Suffolk County Department of Planning)	May-2006	Study inventoried and assessed retail in Suffolk County, including CBDs, Strip Centers, and Shopping Centers.	Update retail inventory and to identify recent retail trends in Suffolk County.	RCC	<ul style="list-style-type: none"> • Coordinate better strip center development through a comprehensive plan, and individual municipalities should evaluate rezoning surplus retail properties.
				TS-Inn	<ul style="list-style-type: none"> • To improve the overall appearance of shopping locations to attract new and repeat customers (e.g., signage, landscaping, zoning). • Recommend CBDs center on revitalization measures that would be strategic in nature and promote new uses and activities, encourage infill development, be selective about retailers to attract, and form BID's to spearhead the transformation. • Municipalities should review the market feasibility of new shopping centers before permitting new centers, should prioritize reuse over greenfield development, and should consider other, non-retail uses if a center became obsolete.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Suffolk County Smart Growth Committee Report: Analysis and Prioritization of the Recommendations of the Smart Growth Policy Plan for Suffolk County (Suffolk County Department of Planning)	Nov-2003	Document summarizes the recommendations outlined in the Smart Growth Policy Plan and identifies a priority list of recommendations.	To recommend a priority list of Smart Growth initiatives so that a focused and directed effort can be put into effect for those specific goals.	H	<ul style="list-style-type: none"> Encourage the provision of a variety of housing choices.
				RCC	<ul style="list-style-type: none"> Encourage the development of area-wide or sub-regional Smart Growth plans that address the protection of drinking water resources as well as provide a plan for a reallocation of density to permit compact centers of development and open space.
				I	<ul style="list-style-type: none"> Where appropriate, encourage the establishment of new sewer districts and extensions of public water in Smart Growth areas.
				NR	<ul style="list-style-type: none"> Allow the transfer of development rights from surplus County-owned parcels and possible future open space acquisition programs. Enable the purchase of non-farm development rights and the creation of a land acquisition installment purchase program.
A Review of Selected Growth and Development Areas in Suffolk County, New York (Suffolk County Department of Planning)	Aug-2006	For five centers the study discusses previous studies, demographic, employment, and business trends. Areas include: the Route 110 corridor, the Sagtikos Regional Development Zone, Yaphank, the Town of Riverhead, and the Stony Brook High-tech Campus.	Assesses the development potential for residential, industrial, office and retail uses.	RCC	<ul style="list-style-type: none"> Encourage cooperation and communication between local jurisdictions to foster a planning dialogue across municipal boundaries. Promote inter-municipal agreements and overlay districts to create a foundation that allows for comprehensive planning and land use regulations within a regional context. Incite the development of updated comprehensive plans for individual administrative entities. Prepare a comprehensive plan for all of Suffolk County by the county.
				I	<ul style="list-style-type: none"> Advance comprehensive transportation planning that considers all significant projects in the region instead of assessing them on a case-by-case basis.
				QL	<ul style="list-style-type: none"> Consider progressive planning best practices that promote sustainable and smart growth principles.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Open Space Acquisition Policy Plan for Suffolk County (Suffolk County Department of Planning)	Mar-2010	Plan summarizes Suffolk County's environmental setting and open space goals for the 21st century.	To identify policy initiatives to implement the County's open space goals.	NR	<ul style="list-style-type: none"> • Preserve open spaces in perpetuity through a variety of initiatives, including open space acquisition and such other tools including TDRs, cluster developments, and resource protection overlay districts that provide and/or preserve open space. • Connect existing open spaces to avoid fragmentation. • Leverage open space financing with both public and private partners. • Encourage the preservation of larger or groups of parcels that are regional in scale and size for County ownership and management.
Long Island 2035 Regional Comprehensive Sustainability Plan - Technical Report (Long Island Regional Planning Council)	Dec-2010	The study examines population, demographic, and employment trends in Long Island over the last 20 years to develop future forecasts for 2035.	To identify key opportunity areas for sustainable, economic growth in the region.	H	<ul style="list-style-type: none"> • Develop a fair-share housing program to create mixed-income workforce housing options that meets the needs of an emerging immigrant population.
				RCC	<ul style="list-style-type: none"> • Streamline government permitting and approval processes for projects. • Create a regional economic strategy.
				ET	<ul style="list-style-type: none"> • Provide equal education opportunities for all children. • Establish training centers for low-income and minority communities.
				I	<ul style="list-style-type: none"> • Create alternative funding sources for transportation infrastructure. • Expand transportation options. • Improve regional connectivity. • Create transit-supported communities.
				TS	-Inn

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
				-Tech	<ul style="list-style-type: none"> • Create new industries in home energy efficiency, healthcare, life sciences, and green energy. • Enhance supportive services for high-tech start-ups.
				NR	<ul style="list-style-type: none"> • Implement a plan to protect natural water resources. • Protect beaches and marine resources.
				RA	<ul style="list-style-type: none"> • Coordinate a regional emergency preparedness plan. • Develop a regional energy conservation program and climate change resilience plan. • Develop a regional energy strategy and energy conservation program.
				QL	<ul style="list-style-type: none"> • Expand healthcare reform coverage. • Establish development guidelines that preserve open space and protect natural resources, farmland, and neighborhood character. • Meet the needs of an aging population.
Suffolk County Comprehensive Plan — 2035, Volume IA (Suffolk County Department of Planning)	Aug-2011	The Plan summarizes current trends in Suffolk County regarding population, the economy, and quality of life.	To identify current demographic and economic trends to inform policy and decision making.	QL	<ul style="list-style-type: none"> • The report constitutes Phase I of the Suffolk County Comprehensive Plan Process, which includes a data and inventory analysis of demographics, the economy, and quality of life to inform policy recommendations as part of the Phase II process.
Connect Long Island - A Regional Transportation and Development Plan (Town of Babylon)	Oct-2011	Plan summarizes the regional transportation challenges facing Long Island and recommends strategies for addressing those challenges.	To identify strategies to address Long Island's regional transportation challenges.	I	<ul style="list-style-type: none"> • Make strategic investments in transportation infrastructure to foster regional connectivity. • Create north-south mass transit connections that will enable regional mobility. • Implement a Bus Rapid Transit system that would connect two LIRR branches – Babylon and Ronkonkoma – directly and the Huntington Branch indirectly via a connection to the HART Bus System.
				QL	<ul style="list-style-type: none"> • Support and encourage mixed-use, transit-oriented development to encourage walkable communities concentrated around vital economic centers.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes		Recommendations	
A New Vision for Long Island's Economy - The Strategic Economic Development Plan Nassau and Suffolk Counties (Long Island Regional Economic Development Council)	Nov-2011	Study assesses Long Island's strengths and weaknesses in terms of economic growth and presents findings of working groups with participants from academia, business, and community.	Develop a strategic framework for sustainable economic growth on Long Island.	H		<ul style="list-style-type: none"> • Create new housing opportunities. • Support existing housing programs. 	
				RCC		<ul style="list-style-type: none"> • Increase collaborative partnerships. • Promote new government policies to foster growth. 	
				ET		<ul style="list-style-type: none"> • Increase education and training. • Increase Science, Technology, Engineering, and Mathematics (STEM) education. • Develop workforce that meets the needs of industry clusters (technology and engineering, advanced manufacturing; health care; and green technology). 	
				I		<ul style="list-style-type: none"> • Develop and repair sewer infrastructure. • Build second LIRR track. • Construct new Republic Station. • Devise LIRR parking solution. • Develop bus/multimodal rapid transit. • Generate new freight opportunities. 	
				TS		-Inn	<ul style="list-style-type: none"> • Implement "game changing" projects that can jumpstart the transformation process. • Encourage entrepreneurship. • Apply the Excelsior tax credit program. • Tap into economic potential of airports.
						-T	<ul style="list-style-type: none"> • Enhance ecotourism activities and infrastructure.
				-Mfg	<ul style="list-style-type: none"> • Improve manufacturing productivity. • Support advanced manufacturing assistance programs. 		
				-A	<ul style="list-style-type: none"> • Invest in agricultural infrastructure improvements, food hubs, and small farms. • Expand fishing and aquaculture opportunities with water quality improvements and fishing infrastructure investments. • Enhance agri-tourism and eco-tourism opportunities by creating shuttle bus systems and other mass transit options. 		

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Long Island Index 2012: Profile Report (Regional Plan Association)	2012	The plan summarizes current demographic, employment, social, education, housing, and economic trends in Suffolk County.	To provide a current profile of demographic and economic trends and outline future challenges facing Suffolk County.	H	<ul style="list-style-type: none"> Densifying Long Island’s downtowns to provide vibrant, walkable, mixed-income communities.
				RCC	<ul style="list-style-type: none"> Transforming Long Island will require coordination between state, county, and local municipal entities. Private and civic stakeholders will need to be a part of Long Island’s future.
				TS-Tech	<ul style="list-style-type: none"> Generate income from within Long Island boundaries. Long Island needs to tap into its assets, such as its highly educated workforce, its first-class research institutions, and a growing network of entrepreneurs to spur its economic engine.
Suffolk County Transfer of Development Rights (TDR) Study – Inventory of Existing Transfer of Development Rights Programs (Suffolk County Department of Economic Development & Planning)	Mar-2013	Inventory and evaluation of TDR programs in Suffolk County, including recommendations on how to increase participation in the programs and encourage increased cooperation and collaboration between jurisdictions.	Increase awareness and use of TDR programs in Suffolk County. Encourage the use of TDRs to growth centers (identified 6 areas in addition to centers of growth center study).	H	<ul style="list-style-type: none"> Identifies programs utilizing TDR programs to encourage the development of affordable housing.
				RCC	<ul style="list-style-type: none"> Develop better coordination and implementation between local land use decisions and regional transportation policies.
				NR	<ul style="list-style-type: none"> Coordinate development right absorption within identified and designated growth zones in the County while discouraging development in environmentally sensitive areas. Identifies projects utilizing TDR programs to protect natural resources.
Cleaner Greener Long Island Regional Sustainability Plan (Cleaner Greener Consortium of Long Island and the Town of North Hempstead)	May 2013	The plan outlines obstacles Long Island currently faces to becoming more energy efficient and identifies opportunities to reduce energy consumption in an effort to increase resiliency and adapt to climate change.	To provide guidance to Long Island communities to pursue regionally-based energy efficiency solutions to become more resilient to climate change.	RCC RA	<ul style="list-style-type: none"> Develop regional strategies regarding transportation, land use, and waste and water management to reduce greenhouse gas emissions and create sustainable communities that are more resilient to climate change.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Agricultural and Farmland Protection Plan (Suffolk County Department of Planning)	1996; Update 2014	The plan assesses the loss of farmland and impediments to farming in Suffolk County, and sets forth recommendations to preserve farmland and foster agricultural-related businesses	To provide a strategic framework to promote the preservation of farmland and farming as an agricultural industry.	TS-A	<ul style="list-style-type: none"> • Preserve farmland through a variety of initiatives, including the PDR program, establishing state agricultural districts, TDRs, conservation easements, and cluster developments. • Reduce farm operating costs. • Encourage investment in green technologies and infrastructure that can expand growing seasons, enhance value-added processing opportunities, and reduce energy use. • Engage in marketing campaigns to promote local farmers. • Create physical and online spaces devoted to promoting agri-tourism. • Engage in large lot zoning. • Promote agricultural-related industries, such as composting, manure for fertilizer, and promoting the local wine industry. • Expose K-12 students to agricultural education curriculum. Offer higher education opportunities, both college and vocational, to students interested in agricultural career. Match interested students to internship, apprenticeship, mentoring programs. • Develop County-wide Deer Management Plan. • Encourage private co-operative arrangements between farmers to share resources including equipment, seasonal labor, labor housing, educational and workshop funding, and environmental stewardship programs. • Work with towns and local municipalities to adapt “farm-friendly” zoning and regulations. • Create financial assistance programs and tax incentives targeted to sustainable agricultural enterprises. • Develop transit-oriented infrastructure to transport Suffolk and non-Suffolk-based tourists to North Fork based agri-tourism destinations in a manner that minimizes traffic and disruptions to these traditional rural communities. • Promote the production of local food to enhance regional food security and to help bring fresh foods into public institutions such as schools, hospitals, and colleges. • Develop policies that promote healthy eating behavior in under-served Suffolk County communities. • Work with local, state, and federal agencies to simplify and expedite shellfish aquaculture enterprises. Create opportunities for new aquaculture entities, both off-shore and on-land.

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan (Suffolk County)	Oct 2008; Update 2014	The plan assesses the vulnerability of Long Island’s critical systems in the wake of various types of possible natural hazards.	To identify strategies to mitigate the long-term effects of natural hazards on Long Island’s critical systems.	RA	<ul style="list-style-type: none"> • Enhance the public’s understanding of natural hazards in order to minimize loss of life and property • Retrofit or relocate structures in high hazard areas • Strengthen building codes so new construction can withstand natural hazards • Encourage the development and implementation of long-term, cost-effective and environmentally sound mitigation projects • Establish private and public partnerships to implement methods to protect property • Develop or improve early warning emergency response systems and evacuation procedures • Work to lower emergency service response times, including improvement to transportation facilities • Increase resilience of critical facilities and infrastructure • Lower cost of flood insurance premiums • Implement water conservation measures

TABLE B-3 (CONT'D)
SUMMARY OF ECONOMIC STUDIES AND INITIATIVES FOR SUFFOLK COUNTY

Plans, Projects, Programs, Studies, and Initiatives (Author)	Date	Description	Study Goal	Policy Themes	Recommendations
Suffolk County Industrial Development Agency (IDA)*		Public benefit corporation of the State of New York.	To retain and attract businesses to Suffolk County.	RCC ET TS-Inn TS-Mfg	<ul style="list-style-type: none"> The IDA is an agency that partners with regional companies and organizations to provide various incentives to attract and retain local businesses, including property tax incentives, discounted energy programs, and relocation incentives.
Suffolk County Better for Business*		Suffolk County's official website to promote business development and provide assistance to businesses and entrepreneurs.	Provide information and services to businesses expanding and relocating to Suffolk County.	RCC ET I TS-Inn	<ul style="list-style-type: none"> The Suffolk County for Better Business website provides information regarding permitting processes, financing options, and employee training, and identifies innovation opportunities to attract businesses to Suffolk County.
Suffolk County Purchase of Development Rights Program (PDR Program)*		Suffolk County's official website to promote the preservation of farmland through the purchase of development rights.	Provide information about Suffolk County's PDR Program	NR	<ul style="list-style-type: none"> The Suffolk County Farmland Preservation website provides information regarding parcels listed in the PDR Program and applications for hosting events on and improvements to PDR farmland.
Suffolk County Agriculture & Fishing – Website & E-Newsletter		Website within the Suffolk County Department of Economic Development & Planning promoting opportunities in the agriculture and fishing industries.	Provide information regarding local, state, and federal programs to new and existing farmers and fishermen.	TS-A	<ul style="list-style-type: none"> This website serves as a one-stop shop for existing and aspiring farmers and fishermen looking to do business in Suffolk County. There are links to "Getting Started", funding and loan opportunities, permitting requirements, informational sources, and partner organizations. There is an additional e-newsletter that expands on these efforts and provides timely updates.
Suffolk County Affordable Housing Program		Suffolk County's official website to provide information about affordable housing options in Suffolk County	Provide information about Suffolk County's Affordable Housing Program	H	<ul style="list-style-type: none"> The Suffolk County Affordable Housing Program website provides information about affordable housing programs and guidance for first-time homebuyers about down payment assistance.

Notes: * Website that contains information regarding programs and initiatives to promote business development.

1.2.1. EVALUATION OF POLICY THEMES

Provided below is a summary of some of the recent projects noted in the "Progress and Promise: Building a Foundation for Long Island's Future 2012 Update" report published by the

Long Island Regional Economic Development Council that have or will help to foster the key policy themes discussed in Section 2.2.

1.2.1.1. *Housing (H)*

Housing challenges identified in the various studies and plans note the lack of affordable housing and housing options to accommodate the County's growing diverse and aging population, and the need for temporary housing during a disaster (see Appendix C for a detailed discussion of housing in Suffolk County). Several studies and plans, particularly those related to Smart Growth, address housing challenges in Suffolk County. In response to these housing challenges, the plans recommend creating a variety of housing opportunities by taking advantage of compact building sizes, engaging in TDR programs, supporting existing housing programs, and developing a fair-share housing program to create mixed-income workforce housing options.

Current projects, whether in the planning or construction phase, that address the County's housing challenges include Wyandanch Rising, Heartland Town Square, the Ronkonkoma-MacArthur HUB, Wincoram Commons, Downtown Riverhead, and Meadows at Yaphank, among others. The status of these major project initiatives are noted below.

- Wyandanch Rising—sewer construction is complete and other infrastructure projects associated with the development are proceeding. The master developer broke ground in July 2013 on the first phase of the \$35 million housing development.
- Heartland Town Square—the final environmental impact statement for this mixed-use development on the site of a former psychiatric hospital has been submitted to the Town of Islip, and a road is currently being designed to connect the Long Island Expressway to the site.
- Ronkonkoma-MacArthur HUB—the design for a new sewage treatment plant in the Town of Islip with a connection to a mixed-use development in the Town of Brookhaven is underway. However, an alternative approach was advanced by Suffolk County in February 2014 whereby the HUB would be connected via pipeline/pump station to the Bergen Point sewage treatment plant, and treated wastewater would be discharged into the Atlantic Ocean.
- Wincoram Commons—the design for this mixed-use project featuring workforce rental housing, retail space, a public green, playground, and community building has received site plan approval from the Town of Brookhaven and NYSDEC approval for a wetlands mitigation plan. Groundbreaking occurred in May 2014.

- Downtown Riverhead—Construction commenced on the redevelopment of the old Woolworth Building on Main Street to create a mixed use facility with affordable apartments above commercial uses. This project builds upon the recently constructed Summerwind Square development in downtown Riverhead which consists of 52 affordable rental units above commercial space. Summerwind Square is currently leasing up.
- Meadows at Yaphank—this phased, mixed-use development project intended to provide residential, retail, office, and open space, as well as executive units to accommodate extended stays for researchers and visitors to Brookhaven National Laboratory and Stony Brook University, is a priority project still in the planning and design stages.

1.2.1.2. Regional Coordination and Collaboration (RCC)

Several plans and studies address the need for greater regional coordination and collaboration regarding transportation initiatives, development projects, and target sector growth.

In response to the regional coordination and collaboration challenges noted in the studies and plans identified in **Table B-3**, recommendations include streamlining government permitting and approval processes for development projects, coordinating a regional economic strategy, developing better coordination between local land use decisions and regional transportation policies, and encouraging cooperation and communication between local jurisdictions to foster a planning dialogue across municipal boundaries.

Current projects identified in the various studies and reports that address the regional collaboration and coordination challenges include Accelerate Long Island, Long Island SART, High Performance Computing, Suffolk Submission & Status Terminal, and the Long Island Comprehensive Economic Development Strategy. The status of these initiatives is summarized below.

- Accelerate Long Island—This collaboration among Long Island’s leading research institutions and area venture capitalists seeks to help create an innovation economy by creating and funding companies based on the research being done on Long Island.
- Long Island SART—The establishment of State Agency Resource Teams (SART) is a regional collaboration to coordinate local efforts to identify best practices in one area and share them with others. SART has been active in supporting various regional group efforts, conducting workshops, and providing consultation to applicants of consolidated funding application (CFA) or non-CFA programs.

- High Performance Computing—This is a priority project intended to create a high-performance computing system to boost job creation on a regional level, establish a therapeutics research center and a solar energy research facility, and support research and lab equipment grants to emerging technology companies. Further funding for this project has been recommended.
- Suffolk Submission & Status Terminal—This is a one-stop shop available on Suffolk County’s website for residents and business owners to access information regarding the permit process, submit online applications, and track a permit’s progress in order to streamline the permitting process and facilitate economic development projects.
- Long Island Comprehensive Economic Development Strategy—This document has been approved, which allows qualifying entities within the region to apply for Economic Development Administration grants to assist in job retention and stimulate industrial and commercial development.

1.2.1.3. *Education and Training (ET)*

Several studies note the lack of training opportunities available for low-income and minority communities in Suffolk County, which has led to a dearth of workers trained to meet the needs of various industry clusters.

In response to the education and training challenges Suffolk County currently faces, these plans and initiatives recommend equal education opportunities for all children, establishing training centers for low-income and minority communities, increasing STEM education, and developing a workforce that meets the needs of industry clusters (i.e., technology and engineering, advanced manufacturing, health care, and green technology).

Current projects that address Suffolk County’s education and training challenges include STEM Workforce Innovation Network, EnglNE, the Long Island STEM HUB, Farmingdale STEM, and Long Island WIB, STEaM, and the Suffolk County Artrepreneurship Program. The status of these project initiatives are noted below.

- STEM Workforce Innovation Network—This is an ongoing job-training effort to create connections between educational institutions and business to boost the number of potential workers with crucial skills in science, technology, engineering, and math.
- EnglNE—This is an ongoing program with Hofstra University and the New York Institute of Technology intended to reduce the shortage of engineers by allowing students pursuing undergraduate degrees in STEM fields to choose programs that will prepare them for innovative jobs.

- Long Island STEM HUB—This is an ongoing project of Brookhaven National Laboratory and North Shore-LIJ to promote dialogue between industry and academia and develop educational pipelines, including internships.
- Farmingdale STEM—This is an ongoing project aiming to inspire interest in STEM studies among minorities and others under-represented in the workforce at the middle and high school levels.
- Long Island WIB—This is an ongoing initiative upgrading the IT skills of unemployed workers in sectors where a gap exists between the available workforce and the needs of industry.
- STEaM—This program received a \$100,000 grant from the New York State Council on the Arts for a feasibility study on the development of a STEaM (Science, Technology, Engineering, Arts, and Math) Center in Wyandanch. The study on this STEaM Center would gauge the economic impact and community appeal of locating a facility in Wyandanch that would include career training and research and exhibition space dedicated to the technology of media and fine arts. Recognizing that the arts represent a valued and significant aspect of the Long Island and New York State economy (more than \$5.8 billion), the proposed STEaM Center will be a dynamic regional center that furthers the industry, while simultaneously creating excitement and job opportunities for high school and college students and community members. The emphasis on core curricular connections for high school and college-level, as well as graduate school-level, will help students determine and further career goals.
- Suffolk County Artrepreneurship Program—This program, in partnership with the New York State Foundation for the Arts, the Art League of Long Island, and the SUNY Stony Brook Small Business Center, is launching a pilot project to provide entrepreneurial training for up to 25 craft artists in 5 intensive sessions. Graduates of the program will be able to exhibit in the “Art in the Park 2014” exhibit at Heckscher State Park in Huntington. Follow-up business consultation services will be provided by the SUNY Stony Brook Small Business Development Center.

1.2.1.4. *Infrastructure (I)*

Infrastructure challenges noted in the plans and studies include the need to improve regional interconnectivity, develop and repair sewer infrastructure, and advance comprehensive transportation planning that considers all significant projects in the region instead of assessing them on a case-by-case basis.

In response to Suffolk County's infrastructure challenges, these plans and initiatives recommend creating alternative funding sources for transportation infrastructure, expanding transportation options, making strategic investments in transportation infrastructure to foster regional connectivity, creating transit-supported communities, using green technologies to manage stormwater runoff, and creating north-south mass transit connections.

Current projects that address Suffolk County's infrastructure challenges include Wyandanch Rising, the Ronkonkoma-MacArthur HUB, Heartland Town Square, Wincoram Commons, Meadows at Yaphank, Sheltair Republic Airport, the Brookhaven Rail Terminal, EPCAL Sewage Treatment Plant Upgrade, Brentwood Sewers, Suffolk County Sewer Feasibility, and the East Farmingdale Redevelopment Plan. The status for Wyandanch Rising, the Ronkonkoma-MacArthur HUB, Heartland Town Square, Wincoram Commons, and Meadows at Yaphank are noted above. The status of other project initiatives is noted below.

- Sheltair Republic Airport—Groundbreaking for this project, intended to construct new hangars and offices, improve infrastructure, and build a new entrance road to the airport, is anticipated to begin in 2014.
- Brookhaven Rail Terminal (BRT)—This ongoing priority project has already succeeded in minimizing trucks on the road by expanding the number of rail cars at the BRT.
- EPCAL Sewage Treatment Plant Upgrade—EPCAL (Enterprise Park at Calverton) is an urban renewal area designated by the NYS Legislature as a development priority. The Town of Riverhead has completed a map and plan for the EPCAL sewage treatment plant upgrade, and has invested in the redevelopment plan and draft final environmental impact analysis.
- Brentwood Sewers—This study, largely complete, focuses on land use recommendations, demographic and cultural analysis, and identification of 'opportunity sites' for sewage treatment plants along with basic capacity analysis. One of the three sites identified is currently undergoing a zoning change to allow the use.
- Suffolk County Feasibility Studies—This project will develop feasibility reports containing the recommendations regarding the sewerage of 25 communities; 13 of which meet the criteria for distressed areas. Sewering these areas, if feasible, will result in revitalization and increase in business investment, provide additional employment opportunities and improvement to the quality of life of the residents, including workforce housing opportunities, and result in improvements in water quality and environmental protection. Nine feasibility studies are currently underway within the County.

- East Farmingdale Redevelopment Plan—This transit-oriented development, which will include housing and business development to create a vibrant mixed-use center, is still in the planning and design stages.
- Suffolk County Planning Commission’s Green Methodologies for Managing Stormwater Runoff guidelines—This policy, recently adopted by Suffolk County, provides guidance for implementing green infrastructure to manage stormwater runoff. The guidelines are the standards used for Suffolk County’s buildings and are being increasingly incorporated into private developer’s plans.

1.2.1.5. *Target Sector –Agriculture, -Technology, -Innovation, -Manufacturing, -Tourism (TS - Ag, -Tech, -Inn, -Mfg, -T)*

Several studies and plans note the need to attract and retain businesses in Suffolk County and develop projects and initiatives that cater to specific target sector markets to foster a sustainable economy. Therefore, the target sector policy theme has been divided into four subcategories that address specific types of business activities addressed in the various plans and studies. Target Sector-Agriculture (TS-Ag) addresses efforts to foster sustainable agricultural enterprises in Suffolk County. Target Sector-Technology (TS-Tech) addresses efforts to attract burgeoning high-tech and low-tech industries to Suffolk County. Target Sector-Innovation (TS-Inn) addresses efforts to catalyze economic development through arts and cultural programs, the revitalization of central business districts and shopping centers, and tourism development. Target Sector-Manufacturing (TS-Mfg) addresses initiatives to improve manufacturing productivity in Suffolk County.

In response to target sector challenges, these plans and studies recommend improving the overall appearance of shopping locations to attract new and repeat customers, enhancing ecotourism activities and infrastructure, encouraging and supporting entrepreneurship, creating new industries in home energy efficiency, healthcare, life sciences, and green energy, supporting high-tech start-ups, and leveling the economic field for business retention.

Current projects that address Suffolk County’s target sector challenges include Smart Grid 3 (TS-Tech), Accelerate Long Island (TS-Mfg), Pharmaceutical Manufacturing (TS-Mfg), the Excelsior Tax Credit Program (TS-Inn), Path Through History, Arts, and Tourism (TS-T), Improve Sustainable Agricultural Enterprises (TS-Ag), Downtown Revitalization Program (TS-Inn), Improve the Economic Potential and Employment Opportunities of Fisheries and Aquaculture (TS-Ag), Destination Downtown (TS-Inn), Expansion of ThermoLift at the Advanced Energy Center (TS-Inn), Inventors & Entrepreneurs Club of Suffolk County (TS-Inn), JumpStart (TS-Inn), and Start-up NY (TS-Inn). In addition to these project initiatives, there are numerous other

private organizations working to promote economic development in Suffolk County. The status for Accelerate Long Island is noted above. The status of other project initiatives is noted below.

- Smart Grid 3 (TS-Tech)—This is an ongoing project that has funded the collaboration between Stony Brook University and Brookhaven National Laboratory to establish Long Island as a national center for energy research, development, and manufacturing.
- Pharmaceutical Manufacturing (TS-Mfg)—Construction of a new, State-funded facility to allow for the expansion of Amneal Pharmaceuticals’ manufacturing and distribution hub is underway.
- Excelsior Tax Credit Program (TS-Inn)—Recipients of this ongoing program, intended to stimulate job creation and private investment, have accepted their offers and are initiating their projects in the areas of pharmaceuticals and biotechnology, and information technology.
- Path Through History, Arts, and Tourism (TS-T)—This project has received funding and recently completed a fall advertising campaign to foster tourism and awareness of Long Island history and arts.
- Improve Sustainable Agricultural Enterprises (TS-Ag)—This program is focused on investing in local agricultural initiatives. Investments in the Grapes & Greens Agricultural Enterprise Zone facility in Calverton as well as investments in the Corwin Duck Hatchery, Browders Birds Pastured Poultry LLC, Martin Sidor Farms Inc. and Satur Farms, funded through the LIREDC, have supported this initiative. The LIREDC has also funded projects to promote agritourism activities, such as wine tasting, food festivals, and farmers’ markets, during traditionally slower tourism seasons on the East End. An important component of this program is a multimodal transportation component, to transport visitors between vineyards, farmstands, restaurants, and shopping destinations. Additionally, the County has taken legislative steps to improve the Suffolk County Purchase of Development Rights program. These changes have taken ambitious steps towards expanding direct marketing and processing activities allowed on preserved agricultural land and it will help bring currently uncultivated preserved farmland back into agricultural production.
- Downtown Revitalization Program (TS-Inn)—This ongoing program awards grants to community groups in partnership with local municipalities for capital improvements to the central business districts of Suffolk County. Projects increase walkability, safety, viability and the pedestrian experience as well as increase sales tax revenue to the county. Projects have ranged from public restrooms, sidewalks, period lighting and a

- year round ice skating rink. To date, nearly \$9 million has been invested in projects throughout the County.
- Suffolk County Farmland Development Rights Program (TS-Ag)—An ongoing program instituted in 1974 and the oldest Purchase of Development Rights (PDR) program in the country created to protect agricultural land. The development rights are acquired through County public funding sources to preserve land solely for agricultural production. Since its inception through January 2014, the County has acquired approximately 10,500 acres.
 - Improve the Economic Potential and Employment Opportunities of Fisheries and Aquaculture (TS-Ag)—This program is focused on protecting Long Island’s Fisheries and Aquaculture industry. Investments in the Bay Scallop Restoration Program, the Connetquot Mill Hatchery Restoration project, the Cor-J Seafood Ice production Facility in Westhampton, in trawler technology with L and G Fisheries and funding for several Montauk commercial fishing infrastructure projects, have furthered these efforts. The County provides funding for ambitious programs supporting aquaculture and commercial fishing through Cornell Cooperative Extension of Suffolk County. Many of these programs fund programs that target coastal resiliency, wastewater treatment, water quality protection, and supporting sustainable fisheries. The County also administers the Suffolk County Aquaculture Leasing Program which aims to lease waters to shellfish aquaculturalists in order to stimulate economic activity and improve water quality in Peconic and Gardiners Bay.
 - Destination Downtown (TS-Inn)—This program will provide a limited number of grants of \$25,000 each for creative placemaking projects in downtown communities that contribute toward their livability and help transform them into lively, beautiful, and sustainable places with the arts at their core. Destination Downtown will invest in creative and innovative projects in which communities, together with their arts and design organizations and artists, seek to: improve their quality of life; encourage greater creative activity; foster stronger community identity and a sense of place; and revitalize economic development. In 2014, the focus of Destination Downtown will be Arts Engagement projects that support excellent artistic production or practice as the focus of creative placemaking work.
 - Expansion of ThermoLift at the Advanced Energy Center (TS-Inn)—A \$482,000 grant awarded to ThermoLift by the New York State Energy Research and Development Authority (NYSERDA) will allow the Stony Brook-based company to expand its

operations at the Advanced Energy Center and facilitate efforts to develop a new technology to efficiently heat and cool buildings.

- Inventors & Entrepreneurs Club of Suffolk County (TS-Inn)—This club meets once a month to provide networking opportunities and sponsor educational lectures on how to patent inventions, understand patent rights, and effectively market new products.
- JumpStart (TS-Inn)—An ongoing program to assist low-income residents with used automobiles to enable them to maintain and improve employment.
- Start-up NY (TS-Inn)—A collaboration between Suffolk County and colleges and universities to establish a plan to promote the tax free zones through the State’s new Start-Up NY initiative.

1.2.1.6. *Natural Resources (NR)*

Many studies and plans have been developed by Suffolk County regarding the protection of its natural resources, including its extensive coastal beaches, sensitive wetlands, Pine Barrens woodland habitats, and river and creek watersheds, as well as its important groundwater resources that provides the County’s sole source of drinking water. The County started acquiring open space and parkland in 1959. In 1986, its first major Open Space Preservation Program was initiated. Over a dozen more programs, including the Drinking Water Protection Program were approved by the County Legislature over the next 25 years. In addition to funding for open space acquisitions and farmland Purchase of Development Rights (PDRs), the County and its local municipalities have used other avenues to protect environmentally sensitive lands including Transfer of Development Rights, cluster development, tax lien procedures, restrictive covenants, resource protection overlay districts, real estate transfer tax, and conservation easements.

Since 1959 Suffolk County has spent over \$1 Billion on open space and farmland PDR acquisitions totaling over 53,000 acres of land. Suffolk County has expended more funds for open space acquisitions than any other county in the country. The County continues to acquire open space and farmland PDRs through its Drinking Water Protection Program with funds from one-quarter percent sales tax revenues.

1.2.1.7. *Resiliency and Adaptation (RA)*

The Long Island 2035 Regional Comprehensive Sustainability Plan - Technical Report identifies goals to make Long Island and Suffolk County more resilient to climate change, including coordinating a regional emergency preparedness plan, developing a regional energy conservation program and climate change resilience plan, and develop a regional energy

strategy and energy conservation program. The Cleaner Greener Long Island Regional Sustainability Plan also provides guidance on how Long Island communities can develop regional strategies regarding transportation, land use, and waste and water management to reduce greenhouse gas emissions and create sustainable communities that are more resilient to climate change.

Current projects that respond to the goals identified in this report include the Dune Road Elevation in Hampton Bays, and the construction of infrastructure and rental homes in Ronkonkoma and Wyandanch to address the shortage of vacant housing available for displaced families in the event of a disaster. The status of the infrastructure and housing projects in Ronkonkoma and Wyandanch is described above. The status of the other project initiative is noted below.

- Dune Road Elevation, Hampton Bays—The Dune Road Reconstruction project is approximately 5.1 miles in length and extends from the Shinnecock inlet to Quogue Village. As this section of Dune Road is under water during periods of high tide and storm surges, residents, commercial fisherman, employees and business owners cannot reach their properties during these times. The Town of Southampton has proposed to raise the road to an average of 24 inches to prevent further flooding, and road and property damage.

1.2.1.8. Quality of Life (QL)

Several studies and plans address Suffolk County's challenges regarding quality of life issues, including the need to strengthen existing communities, create pleasant and attractive pedestrian-friendly communities, and encourage compact and orderly development.

In response to quality of life challenges, these plans and studies recommend directing development to strengthen existing communities; supporting and encouraging mixed-use and transit-oriented development to encourage walkable communities centered around vital economic centers; expanding healthcare reform coverage; establishing development guidelines that preserve open space and protect natural resources, farmland, and neighborhood character and meet the needs of an aging population.

Current projects that address Suffolk County's quality of life include Wyandanch Rising, Heartland Town Square, the Ronkonkoma-MacArthur HUB, Wincoram Commons, and Meadows at Yaphank. The status of these projects is described above. The status of other project initiatives is noted below.

- Complete Streets Policy—Adopted in 2012, this policy requires the safe accommodation of bicyclists, pedestrians, transit users and motorists for all streets in Suffolk County.
- Suffolk County Planning Commission’s Guidelines on Public Safety and Universal Design—Adopted in 2012, this policy requires new residential, commercial, and industrial buildings and developments to incorporate design elements that calm traffic, deter criminal activity, and increase public safety as part of an effort to encourage high-quality, innovative design, which also incorporates universal design principles, to positively shape the built environment for living, working, and playing.

1.3. A GUIDE FOR POTENTIAL GROWTH CENTER LOCATIONS

While many of the programs and policies discussed above provide recommendations on how to improve economic conditions, few provide guidance on which areas would be most suitable to accommodate additional economic growth in Suffolk County. This section presents a process that helps prioritize areas which are suitable for economic growth. The guide starts by using previous work conducted as part of the “Review of Selected Growth and Development Areas”¹ report and “Suffolk County Transfer of Development Rights Study”². It also considers the emergence of innovation and high-technology clusters that have become a critical asset within the region and to Suffolk County over the past two decades.

Sustainable, continuous economic growth is critical for Suffolk County in its quest to maintain the quality of life for its residents and provide economic opportunities for new comers and existing families. With less available land, specific locational needs of businesses, and conflicting interests, coordinated planning for economic growth is essential. While providing incentives and assistance to companies and workers on a Countywide level is essential, applying smart growth planning principles when prioritizing future growth locations can provide the competitive edge Suffolk County’s economy needs. The synergies between public and private investment and its importance cannot be understated. It is well established that governmental initiatives and investment, including those related to promoting higher density and/or TOD in desirable locations, are the necessary precursors to attracting private sector capital and investment ultimately needed to realize the Smart Growth development projects that the County is encouraging. For example, the linkage between government actions and private investment is well illustrated by the Wyandanch Rising Initiative, where the investment of

¹ “A Review of Selected Growth and Development Areas, Suffolk County,” New York, 2008.

² “Suffolk County Transfer of Development Rights (TDR) Study,” 2013.

government funds and streamlining approvals served to leverage private investment in the area, which would have been unlikely had government not taken action first.

To ensure that Suffolk County's economy continues to thrive, its assets have to be strategically matched and connected to create stronger synergies. For example, the highly innovative defense clusters of the past included research and development activities that greatly benefited from close proximity to academic institutions, laboratories, labor, and capital. Providing a similar cluster environment today can help strengthen the County's innovative sector. In addition, planning for communities that can accommodate and erase the shortage of today's knowledge and STEM workers will be crucial in order to retain the competitive edge Suffolk County needs in a global labor market. According to the LIREDC Plan, the region's shortage of technical talent is causing economic progress to lag. There are not enough new science and engineering graduates starting companies; not enough of the start-ups grow to become established companies; and not enough of the students and businesses find allies in research and educational institutions. Therefore, it is important to establish these connections between businesses and academic institutions. Moreover, the existing education system is not producing sufficient numbers of engineering graduates to meet local industry demand. Without the talent they need to succeed in global competition, the County's manufacturers and technology-based companies are at risk of downsizing, shutting down, or leaving the County. As discussed earlier, there are a number of initiatives underway to increase capacity to produce more engineering graduates, such as EngINE and the Long Island Community STEM program. In addition, the LIREDC recommends enhancing current collaborative partnerships; encouraging improvements in manufacturing productivity; supporting advanced technology assistance programs; increasing education and training in green manufacturing; encouraging young entrepreneurs; increasing STEM education; and using the state's Excelsior tax credit program to increase the economic potential of key industries such as advanced manufacturing.

The following process describes how to prioritize locations for industrial, office, and retail uses. The criteria are based on characteristics that that can help to maximize potential synergies. The process is based on avoidance (e.g., sensitive aquifers) and attraction criteria (e.g., downtown districts) specific to each use and is intended to serve as a guide to help municipalities and other interested parties within Suffolk County to understand how to best advance smart growth planning principles when planning for economic growth. For example, reversing the growth in vehicle miles traveled (VMT) is an important smart growth strategy. The guide also tests how the areas identified in Connect Long Island are aligned with the selection criteria identified below, to illustrate the compatibility of the Connect Long Island initiative with the

economic development and smart growth goals of the SCCMP-2035. The process uses GIS-compatible data and applies the criteria to select areas by way of example.

The screening process provides a high-level tool for locating the various uses discussed below. Depending on the nature of the use, screening steps can be applied successively to narrow down areas or locations. For example, the process could be used to identify an area that is most suitable for a light industrial manufacturer with a large share of employees using public transportation and a high share of international clients. In a first step, sites that fulfill the size criterion would be identified before considering sites that are accessible by public transportation, such as train, bus, or BRT. In a final step, locations with proximity to the region's airports would be identified to determine the most suitable area. To promote sustainable growth strategies, this process places a strong emphasis on smart growth criteria, such as access to public transportation, and prioritizes reuse over greenfield development, and transit- or pedestrian friendly uses over those that rely heavily on the use of the automobile. The tool, however, is not suitable for the purpose of making decisions about real estate transactions such as property acquisitions. Other user specific selection criteria such as utility requirements, pricing, or proximity to specific suppliers cannot be factored in. The process can also be applied to provide policy guidance to identify areas for target industry clusters. For less specific guidance that would identify a larger area(s), fewer (or even single) screening criteria can be applied.

The screening guide will focus on three major uses: a) industrial; b) office; c) and retail uses, which are described in more detail in the following sections. The variables that will play a major role in the screening process for each of these three major uses are outlined below. Areas that satisfy multiple criteria would be ranked high as these areas are more desirable or appropriate to consider for development. In addition, these areas would also be considered to be better aligned with the County's development goals and as more desirable or appropriate for consideration for development.

1.3.1. SELECTION METHODOLOGY GUIDELINES

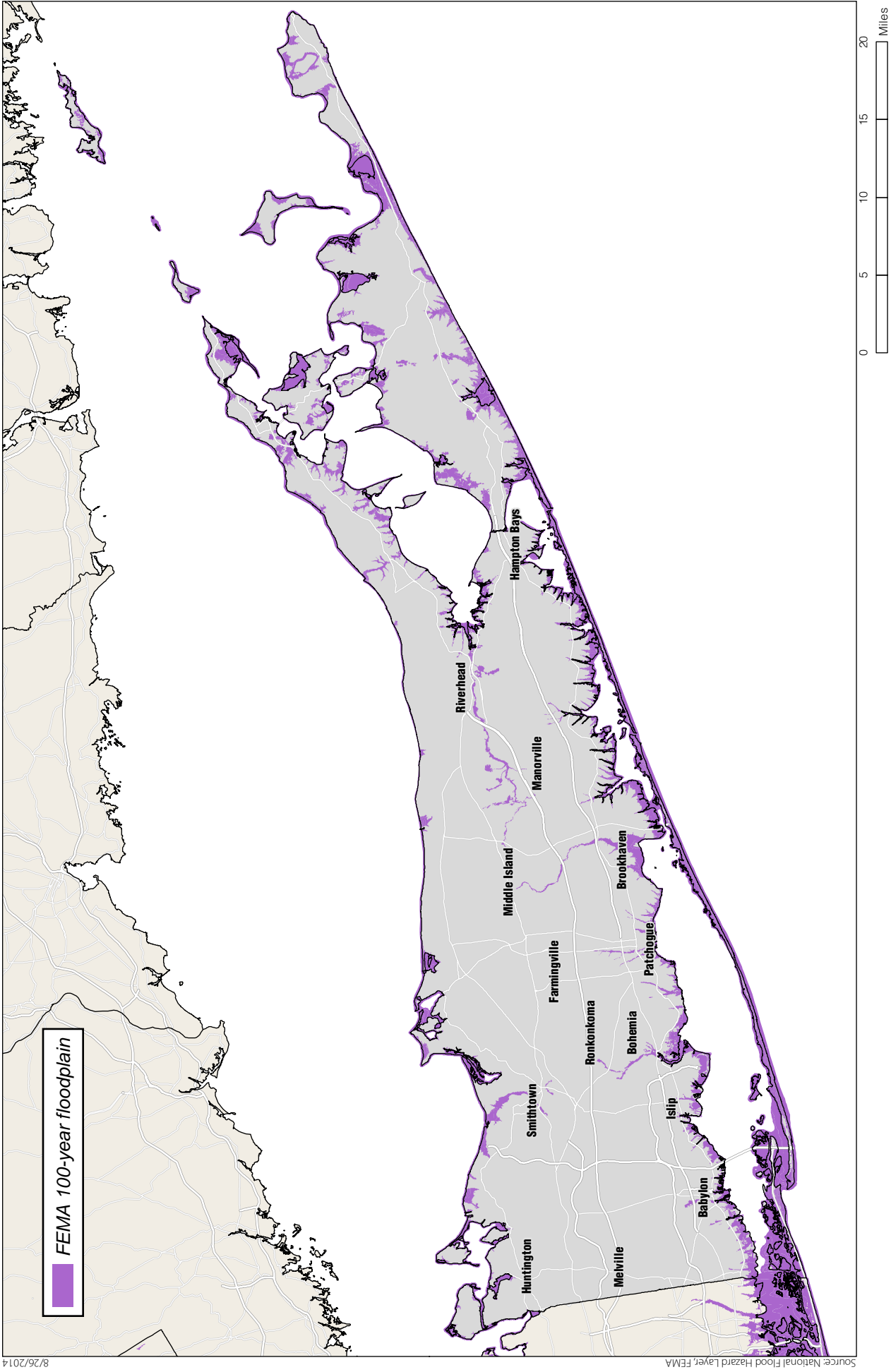
Below are overarching characteristics that would apply to any use and will serve as general guiding principles in the process.

- Redevelopment options that satisfy smart growth principles are prioritized. For example, to protect resources and use existing resources more efficiently the guideline recommends infill development and the reuse and redevelopment of underutilized properties over greenfield development and the consumption of vacant land. The same

- is true for developments that offer the opportunity to combine uses into a mixed-use development.
- Uses should be located in areas close to existing population centers. This is one of the central goals of Connect Long Island. Locating commercial as well as industrial and office development close to population centers is not only beneficial to consumers but also to employers and employees. Connecting residential and work locations better reduces congestion and commute times, and may provide opportunities for new or enhanced public transportation.
 - Protecting natural resources in Suffolk County not only provides better quality of life for local residents, but is also essential to protect the population's basic need for clean drinking water. The County is divided into seven different hydrogeological groundwater zones, based on importance for the local water supply (see Appendix A, Figure A-58). In addition to protecting the County's water resources, parks and other open space should also be avoided. State, County and local parkland and open space identified for acquisition on the County's Open Space Master List should be avoided.
 - After Hurricane Sandy it is also more important than ever to plan for potential catastrophic natural events. Locations that are outside of the 100-year floodplain, established by FEMA, will therefore also receive a higher priority status. The FEMA 100-year floodplain for Suffolk County is shown in **Figure B-8**. Based on data from the New York City Panel on Climate Change (NPCC), sea level is projected to rise by 11-24 inches, in the 25-75th percentile estimate, and up to 31 inches in the 90th percentile estimate, by 2050, and thus the floodplain boundary is expected to move farther inland over time. In addition, areas that are sewered will receive a more favorable rating since unsewered areas are more prone to water quality issues which can be exacerbated by flooding.

1.3.2. INDUSTRIAL USES

Retaining industrial uses and associated employment and skill sets is one of the priorities for Suffolk County, since it not only provides well-paid jobs for the middle-class, but also because it is important for a thriving R&D sector. As described above, the manufacturing sector has changed and transformed and large-scale production complexes have become less dominant. Instead, smaller facilities occupying between 30,000 and 80,000 square feet, such as the Hauppauge Industrial Park, are the prevailing format. Recent sector reports point out a return



FEMA 100-Year Floodplain
Figure B-8

to positive absorption rates and increasing rents¹ and indicate that the market for industrial space is recovering. According to Collier International, industrial vacancy rates have remained stable at very low levels in the recent past. In the second quarter of 2013, in Western and Central Suffolk County, industrial vacancy rates were 4.7 and 4.4, respectively, and 3.2 percent in Southwestern Suffolk County.

Since the current supply is expected to last for the foreseeable future, this study focuses less on traditional (heavy) industrial space but on opportunities better aligned with the County's focus on advanced manufacturing. The assessment focuses on space that can house functions that are critical for the supply chain of high-tech businesses and start-ups originating in the research and innovation clusters in Suffolk County. In general, areas that can accommodate smaller floor plates (i.e., 10,000 to 50,000 square feet), can accommodate laboratories, and are close to existing R&D clusters will be considered. These industrial uses can also be part of commercial areas.

To prioritize the most suitable areas, the following set of criteria was applied:

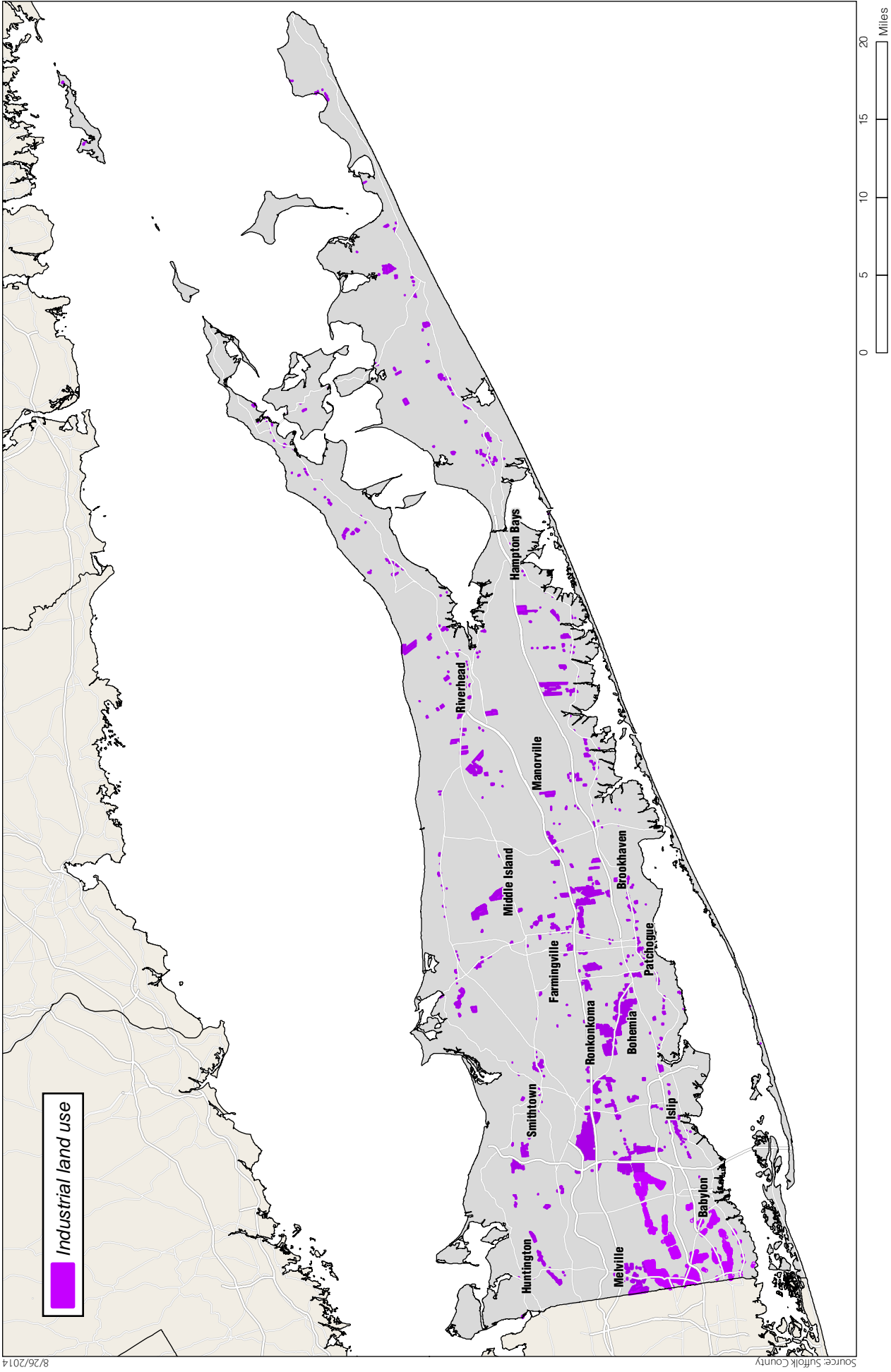
1.3.2.1. *Size constraints*

- Although new facilities do not need several acres to be constructed, they still require a certain footprint to operate. New industrial condominium concepts offer 10,000 square feet and under to new tenants. For the purpose of this analysis, the screening only includes parcels that are at least 10,000 square feet in size.

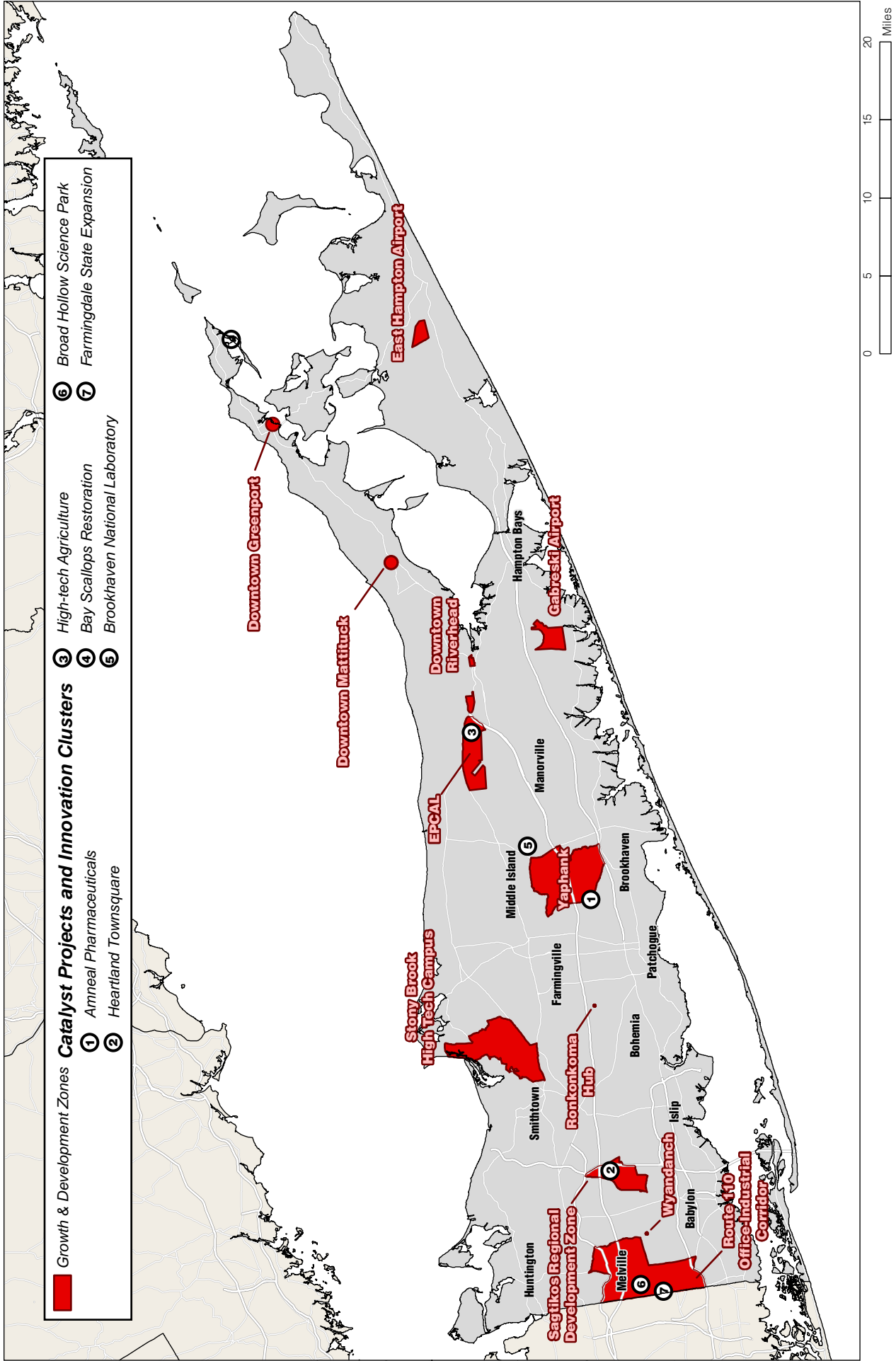
1.3.2.2. *Infrastructure preferences*

- Because manufacturers receive and deliver products, they have a heightened requirement for infrastructure. In particular, physical infrastructure can be costly to build and in most instances needs to be in place before a manufacturer commits to a particular site. The criteria below consider the major infrastructure elements:
- Rail tracks: Rail is often the preferred mode to deliver heavy or bulk products to industrial users. Sites adjacent to rail tracks will receive a higher priority since a spur can be built splitting off from an existing track.
- Highway (ramp): While it is desirable that other modes should be used to supply materials and to bring finished products to customers, in reality, distribution still relies

¹ Colliers Long Island Industrial Market Report q3, 2013.
<http://www.colliers.com/~/media/DCB9A164696449C7A906E751BFB633E1.ashx>



Industrial Land Uses
Figure B-9



Source: Suffolk County Dept of Planning, A Review of Selected Growth and Development Areas, Suffolk County, New York (August 2006); Suffolk County Dept of Economic Development and Planning, Suffolk County Transfer of Development Rights (TDR) Study (March 2013); ARRF 8/26/2014

Existing Growth Centers and Catalyst Projects
Figure B-10

heavily on trucks/freight transportation. Sites within easy access (within 1 mile) will be considered preferred.

- Airports: Airports can be used to deliver and ship high-value components, materials or finished products, or to fly in executives or prospective clients. Airports within a 30 minute drive-time distance will be considered preferred.
- Sewers: There is a preference for development in sewerred versus unsewerred areas.

1.3.2.3. *Proximity to existing industrial uses*

- Being close to other existing industrial businesses can be advantageous for new businesses. Established clusters already have the necessary physical infrastructure in place and new businesses can benefit from existing relationships such as suppliers and service providers. Also, there is greater likelihood for businesses to share the same labor pool that can supply desired skills and experience. Since close proximity creates the opportunity for informal exchange of information, new ideas and innovations are more likely to be shared, potentially improved and/or implemented. Industrial land uses throughout Suffolk County are depicted on **Figure B-9**.

1.3.2.4. *Proximity to existing innovation clusters*

- If businesses are close to innovation clusters they can immediately plug into the existing supply chain network, linking to new ideas and industry knowledge. Proximity increases the flow of knowledge and the productivity of R&D. Start-up businesses are often founded by employees and academics directly involved in the most current research. Most often R&D and start-ups are co-located in innovation clusters where research institutions are in close proximity to incubator facilities that house new start-up companies. Many of the companies that commercialize patents require production facilities where new ideas can be tested and implemented. If manufacturing uses are located closer to where ideas are created, the flow of information between researchers, investors, and supporting businesses can be greatly simplified. The locations of existing growth and development centers, innovation clusters, and catalyst projects in Suffolk County are shown on **Figure B-10**. Many of the County's incubators are located in growth and development centers and innovation clusters. The County's incubators include the Long Island High Tech Incubator, Center for Excellence in Wireless and Information Technology, Advanced Energy Research Technology Center, and Clean Energy Business Incubator Program at Stony Brook University; Stony Brook University's Business Incubator at Calverton; Broad Hollow Bioscience Park at Farmingdale State College; and the Town of Huntington Incubator in Huntington Station.

- Since the ability to network, cross-collaborate, and create spillover effects are key for this criterion, areas should be in close proximity to existing institutions or research centers. The analysis therefore considers areas that are within 1 mile of existing clusters.

1.3.2.5. *Avoid natural resources assets*

- Future industrial growth centers should avoid areas that are within sensitive hydrogeological zones that are of particular importance for the replenishment of the County's underground drinking water supply.
- Areas that contribute to the quality life of residents should be avoided. Industrial areas should therefore not be adjacent to sensitive natural resources (e.g., open space and parks).

1.3.3. *RETAIL USES*

Although retail growth has slowed over the past five years, it is still a key driver in terms of employment in Suffolk County. **Figure B-11** shows the locations of retail land uses throughout the county. Similar to other suburban areas in the country, large-scale shopping centers have become the preferred place to shop for Suffolk County residents. While traditional retailers prefer large undeveloped sites, these sites are becoming increasingly hard to find.

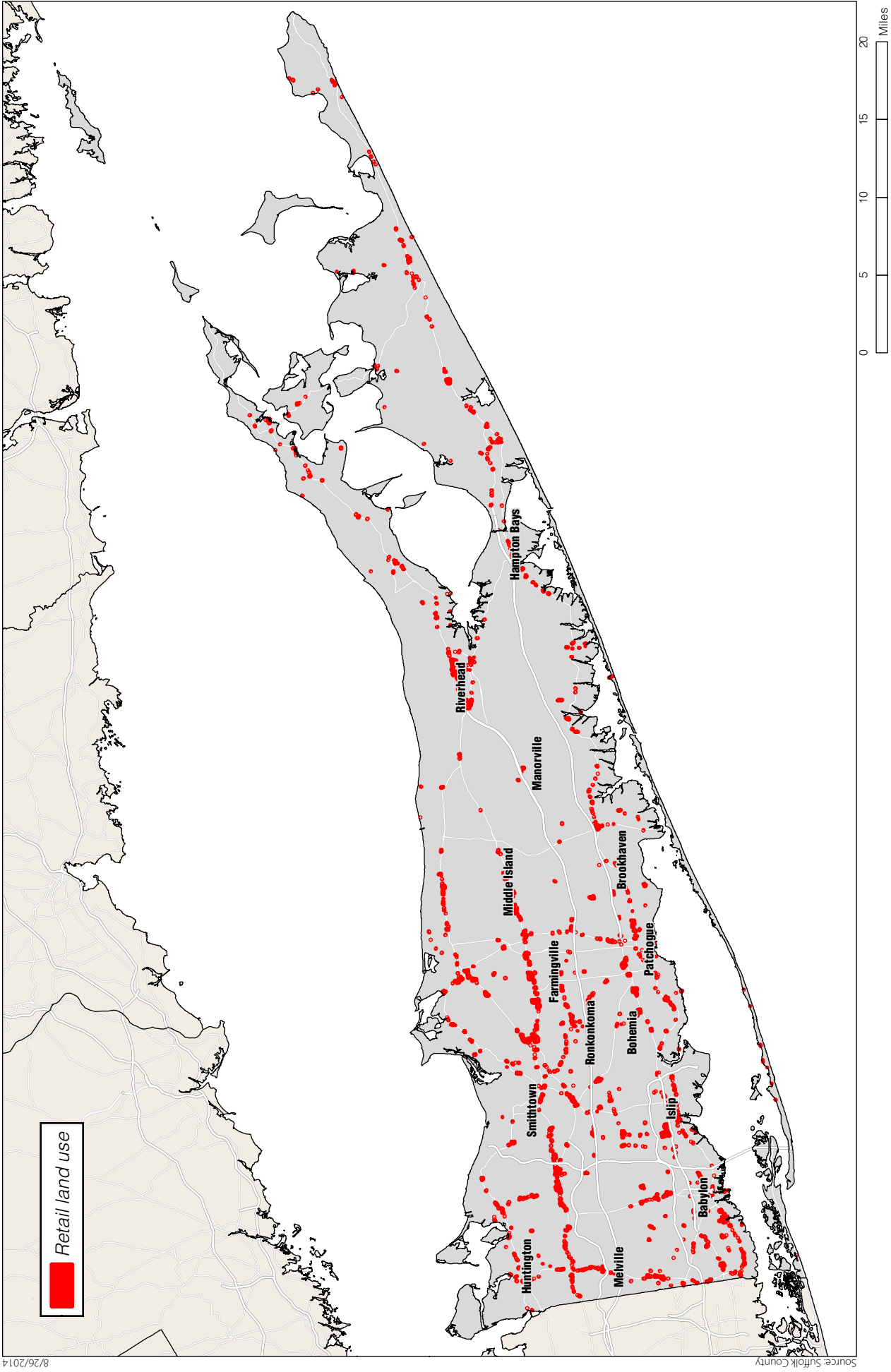
Smart growth principles suggest focusing on reuse opportunities at existing underutilized retail clusters and infill development in downtown environments. Establishing these principles could contribute to the strengthening of downtown clusters, an important ingredient for establishing Transit Oriented Districts. To prioritize the most suitable areas, the following set of criteria was applied:

1.3.3.1. *Proximity to consumers*

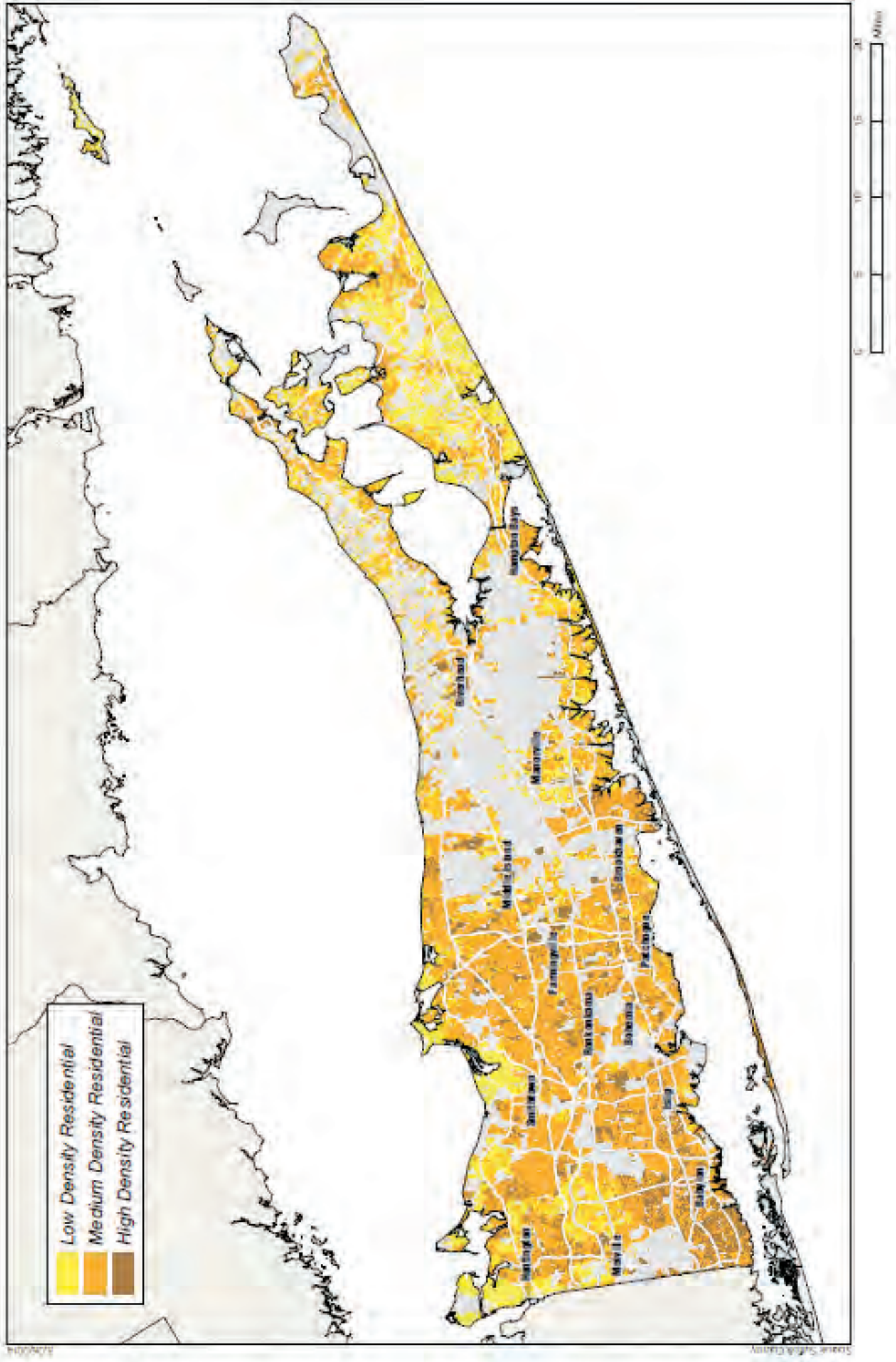
- Proximity to consumers is still the most critical criterion for every retailer. In Suffolk County, most of the western portion would satisfy this criterion. Depending on the type of retail product sold, the trade area will vary. For the purpose of this study only areas that are within five miles of denser residential clusters (non-destination retail) will be considered as priority areas. The residential development density in Suffolk County is shown on **Figure B-12**.

1.3.3.2. *Preferred locations and site access*

In addition to providing goods and services to customers, retail development can also help to redevelop and revitalize an area. It can contribute to an area becoming a successful mixed-use district. The process therefore focuses on the following locations:



Retail/Commercial Land Uses
Figure B-11



- Downtown districts: Areas that are within walking distance of larger populations and other amenities with total of 5,000 square feet of vacant or underutilized properties.
- Distressed shopping centers: In many instances these greyfield¹ sites fulfill the requirements of traditional developers both in terms of access and size. The County's retail vacancy survey is used to identify most suitable areas.
- While areas accessible by public transportation are preferred, the current reality is Suffolk County favors the use of an automobile to conduct shopping trips. Areas within a ½-mile radius of public transportation will receive a high priority ranking, and areas accessible by car within 1 mile of a highway ramp will be considered.

1.3.4. OFFICE USES (R&D, HIGH-TECH, AND OTHER CLUSTERS)

The process to prioritize office areas, including R&D and start-up space, will be similar to that used for industrial areas. However, while the industrial process places a stronger emphasis on the proximity to other industrial uses, the search for the most suitable office areas depends on the availability of labor and connecting future office space to residential neighborhoods via public transportation. The locations of existing office land uses are depicted in **Figure B-13**. To prioritize the most suitable areas, the following set of criteria was applied:

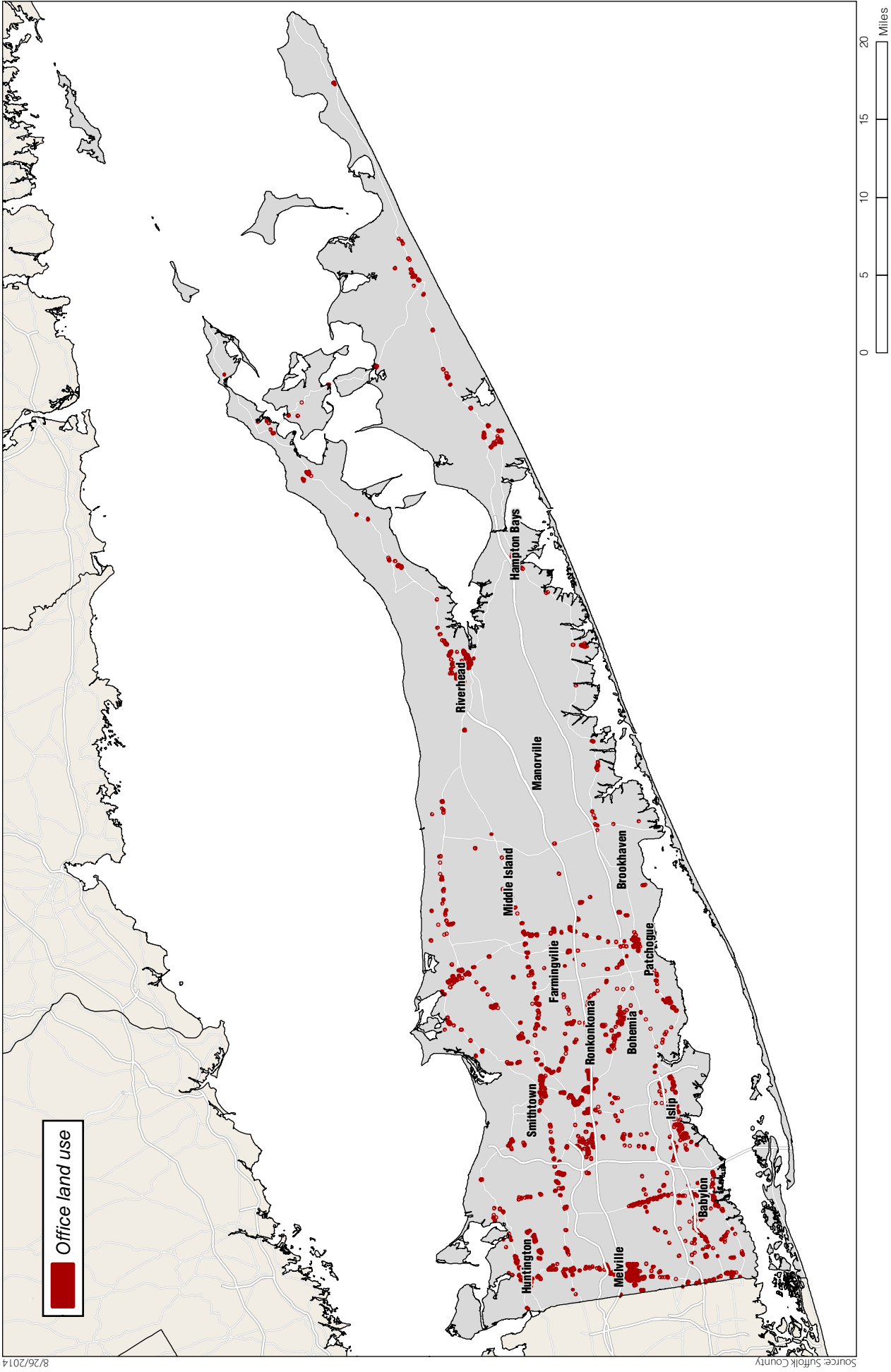
1.3.4.1. Proximity to labor markets

- Labor is one of the most important factors when selecting an office location. Future office locations should either be in close proximity to population centers or close to areas that can be reached via public transportation. The screening should only consider areas that are classified by County to be medium- or high-density residential areas.
- Areas that are within a 30-minute drive time from major population centers should be considered.
- Areas within ¼-mile radius of public transportation should receive higher priority status.

1.3.4.2. Proximity to innovation clusters

- The growing target sectors in Suffolk County will be in need of additional business services. Areas that are close to institutions, incubators, and centers of excellence as well as colleges and universities and other office locations should be considered.

¹ For purposes of this study, a greyfield site is defined as a vacant or underutilized commercial property typically surrounded by a vast expanse of grey asphalt.



Office Land Uses
Figure B-13

1.3.4.3. Accessibility

- Because of the potentially high commute volume, proximity to public transportation and feasibility of additional transit services is crucial to limit congestion effects. Locations close to trains/public transportation (including BRT or shuttle stops) should receive a high priority status.
- Similar to industrial uses, office uses may require access to commercial airports for clients and company leadership. Locations within a 30-minute drive time should be considered.
- Proximity to existing and resilient infrastructure.

1.4. FINDINGS:

Economic activity and growth patterns have changed over the past two decades in Suffolk County. The decline in defense spending at the end of the Cold War in the early 1990s was a crucial turning point for the County. Shortly after many of the defense-industry businesses, such as Grumman, left or closed almost of their facilities in the County, the practice of off-shoring of manufacturing capacities became more prevalent, and also contributed to a changing business landscape in Suffolk County. Generally, smaller companies with more scalable operations were formed by defense workers, as they were better prepared to respond to changes in demand. This adjustment in Suffolk County's industrial base, combined with a number of attractive assets and strengths including its educational institutions, educated workforce, infrastructure and quality of life, enable Suffolk County to adapt to the changes represented by a shift from a manufacturing-based economy to an information- and service-dominated economy, as well as the growing effects of global low-wage competition. However, a number of challenges remain. In particular, retaining and attracting younger people to some of the target industry sectors is a challenge facing businesses in the County. As discussed earlier, to increase the County's supply of technical talent and enhance business retention and creation, the County should foster collaborative partnerships between businesses and academic institutions; substantially increase STEM education; encourage improvements in manufacturing productivity; support advanced technology assistance programs; increase education and training in green manufacturing; encourage young entrepreneurs; and utilize the state's Excelsior tax credit program. It is also more important than ever to consider resiliency and adaptation when planning for economic development.

1.4.1. OVERALL EMPLOYMENT TRENDS AND PROJECTIONS

For the time frame examined in detail in the analyses presented in this chapter, for the period between 1998 and 2011, Suffolk County's employment grew at a higher rate than employment in the U.S. In particular, between the late 1990s and the late 2000s the County experienced strong employment growth when Suffolk County's private sector employment grew by approximately 80,000 employees. This growth in employment coincided with notable population growth.

Over the coming 30 years, Suffolk County's residential population is projected to increase by nearly 200,000 people, according to projections by the Suffolk County Division of Planning and Environment. If labor force participation remains at a similar level as it is today, over 130,000 new jobs will have to be generated in Suffolk County to absorb the additional job seekers.

1.4.2. INDUSTRY SECTOR TRENDS

The analysis of industry/business sector growth trends revealed a dichotomic picture. While the overall growth trend is positive—11 out of 17 sectors for which data was available experienced double-digit growth rates between 1998 and 2011—some key sectors, information and manufacturing sectors in particular, showed a decline in employment.

Suffolk County and the Long Island Economic Development Council have identified four target industry sectors as priorities for concentrated focus because they are the sectors with the highest growth potential, including the following:

- Agriculture;
- Innovation (including information, and health care);
- Advanced Manufacturing; and
- Tourism.

The County and New York State already provide financial and technical assistance for businesses in these industry sectors with the goal of retaining and strengthening these sectors, and attracting new businesses.

The industry/business sector analysis shows that within this group of target sectors, the Health Care subsector (included in the broader "Innovation" sector)—and this sector's related research activities, as well as the Tourism sector have performed well, growing substantially over the past decade. On the other hand, the Information and Manufacturing sectors have experienced a decline between 1998 and 2011. The declining trend in the information sector is of particular concern because this sector plays an important role in innovation industries and

advanced manufacturing. Although manufacturing employment has decreased in Suffolk County over the analysis period from 1998 to 2011, the fact that the decrease was far less pronounced than national trends is indicative of the sector's resiliency within the regional economy. However, the continuation of the current (job-loss contraction) trend in manufacturing could lead to a more pronounced loss of expertise and skills which, if not stopped, will be difficult to reverse and is likely to have a negative effect on other target sectors. For example, advanced metal manufacturing and processing skills, which are needed to produce biomedical machines, could be lost with a continued decline of the manufacturing sector.

1.4.3. LOCATION TRENDS

Employment growth between 2000 and 2010 was not evenly distributed throughout the County. Overall, while the pattern from 2000 remains very similar in 2010, the "center of gravity" for employment has shifted slightly toward the eastern portion of Suffolk County, with more people working in the Central Suffolk County region. In particular, since 1998 there are three areas that have received a relatively large share of the County's employment growth:

- a) The Route 97 corridor between Stony Brook and Patchogue;
- b) The triangular area between Riverhead, Hampton Bays and Manorville; and
- c) The South Fork around Sag Harbor.

In addition to these three major growth clusters/corridors, smaller growth locations such as areas around Melville on Route 110, in the Town of Brookhaven, and in the Town of Islip have also experienced pronounced employment growth.

1.4.4. POLICIES

Suffolk County and other public as well as private stakeholders have long recognized the need for coordinated planning to support an environment where business can thrive. Through studies, initiatives and discrete development projects, Suffolk County's various stakeholders have worked to address the challenges and realize opportunities for economic development and growth in Suffolk County.

A comprehensive review was undertaken of the major studies, programs, and initiatives with an economic development focus, which have been published or implemented since 2000 by government agencies and prominent non-governmental organizations. The result of this review found that nearly all of the studies and initiatives address the Regional Coordination and Collaboration (RCC) policy theme. A majority of the studies/initiatives also address Housing and

Infrastructure policy themes. Approximately half of the studies address Natural Resources, Education and Training, Target Sector-Innovation, and Quality of Life policy themes, while only one or two studies address Agricultural, High-Tech/Green-Tech Industry, Advanced Manufacturing, and Tourism policy themes. **Table B-4** provides a summary of the various plans, programs, studies, projects, and/or initiatives that were reviewed, and indicates which of the policies each of these addressed.

In addition to studies, programs and initiatives, actual projects in various stages of implementation, such as Wyandanch Rising, were identified and matched with policy themes to measure their progress. The analysis found that policy themes such as Housing, Infrastructure, Education and Training, Target Sector (Innovation focus), and Quality of Life are being addressed by a number of concrete projects that are currently underway or have funding commitments.

Other policy themes such as Regional Collaboration and Coordination, Natural Resources, and Target Sectors (i.e., agriculture, tourism, and advanced manufacturing focus) are being addressed by just a few projects. For example, the Natural Resources theme is currently addressed by the Wincoram Commons project, which includes a sewer connection project and wetland mitigation. In addition, there are several plans and initiatives already in place that specifically address protection of natural resources, e.g., local waterfront revitalization plans, the Pine Barren Protection Act, the Peconic Estuary Program, and Carmans River Conservation and Management Plan recently adopted by the Town of Brookhaven and approved by the Suffolk County Planning Commission, as a plan of regional significance). This leads to the conclusion that transfer of development rights (TDR) concepts, cluster zoning, and conservation easements to protect natural resources do not always receive sufficient consideration in proposed projects. In addition, more specific projects are needed which are focused on addressing the Target Sector (tourism, manufacturing, and agriculture focus) policy themes, as well as policies encouraging Regional Collaboration and Coordination.

TABLE B-4

SUMMARY OF PLANS, PROGRAMS, STUDIES AND INITIATIVES EXAMINED/POLICIES ADDRESSED

Plans, Projects, Programs, Studies, and Initiatives	H	RCC	ET	I	TS					NR	RA	QL
					Inn	T	Mfg	A	Tech			
Smart Communities Through Smart Growth: Applying Smart Growth Principles to Suffolk County Towns and Villages	X	X		X						X		X
Smart Growth Policy Plan for Suffolk County	X	X		X						X		X
Shopping Centers and Central Business Districts (CBD), Suffolk County, NY		X			X							
Suffolk County Smart Growth Committee Report: Analysis and Prioritization of the Recommendations of the Smart Growth Policy Plan for Suffolk County	X	X		X						X		
A Review of Selected Growth and Development Areas in Suffolk County, New York		X		X								X
Open Space Acquisition Policy Plan for Suffolk County										X		
Long Island 2035 Regional Comprehensive Sustainability Plan - Technical Report	X	X	X	X	X				X	X	X	X
Suffolk County Comprehensive Plan—2035, Volume 1A												X
Connect Long Island - A Regional Transportation and Development Plan				X								X
A New Vision for Long Island's Economy - The Strategic Economic Development Plan Nassau and Suffolk Counties	X	X	X	X	X	X	X	X				
Long Island Index 2012: Profile Report	X	X							X			
Suffolk County Transfer of Development Rights (TDR) Study – Inventory of Existing Transfer of Development Rights Programs	X	X								X		
Notes:	H=Housing, RCC=Regional Coordination and Collaboration, ET=Education and Training, I=Infrastructure, TS= Target Sector, Inn=Innovation, T=Tourism, Mfg=Manufacturing, A=Agriculture, Tech=Technology, NR=Natural Resources, RA=Resiliency and Adaptation, QL=Quality of Life. For additional detail relative to any of these plans/studies, etc., please refer to Table B-3, above.											

TABLE B-4 (CONT'D)

SUMMARY OF PLANS, PROGRAMS, STUDIES AND INITIATIVES EXAMINED/POLICIES ADDRESSED

Plans, Projects, Programs, Studies, and Initiatives	H	RCC	ET	I	TS					NR	RA	QL
					Inn	T	Mfg	A	Tech			
Cleaner Greener Long Island Regional Sustainability Plan		X									X	
Agricultural and Farmland Protection Plan								X		X		
Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan											X	
Suffolk County Industrial Development Agency (IDA)		X	X		X		X					
Suffolk County Better for Business		X	X	X	X							
Suffolk County Purchase of Development Rights Program (PDR Program)										X		
Suffolk County Agriculture & Fishing Website & E-Newsletter								X				
Suffolk County Affordable Housing Program	X											

Notes: H=Housing, RCC=Regional Coordination and Collaboration, ET=Education and Training, I=Infrastructure, TS= Target Sector, Inn=Innovation, T=Tourism, Mfg=Manufacturing, A=Agriculture, Tech=Technology, NR=Natural Resources, RA=Resiliency and Adaptation, QL=Quality of Life. For additional detail relative to any of these plans/studies, etc., please refer to **Table B-3**, above.

1.4.4.1. Objectives for sustainable economic development

Encouraging employment growth will be essential for Suffolk County and its local governments to maintain their tax base and their ability to provide the high quality of life as is it currently available in Suffolk County. The most promising way for Suffolk County to accomplish economic growth is to focus on the target sectors that take advantage of the County’s existing strengths and assets, such as the availability of high class educational institutions, educated workforce, infrastructure, and high quality of life. Many of the agencies, institutions, and organizations involved in the economic development of Suffolk County center their efforts to support the target sectors on non-planning related projects and initiatives, such as education and training, business incentives, and investment infrastructure. Suffolk County has the opportunity to provide a (planning) framework that will make it easier for businesses to operate, find the right talent and benefit from new ideas, while also enhancing the attractiveness of Suffolk County for current and potential future employers and employees. From a planning perspective, it will be important for the County to develop and support policies and development strategies that will have the following goals:

1. Provide an environment that is attractive for existing and new businesses and employees:

Some target industry sector businesses have difficulty attracting and retaining employees with the required education and skill sets¹. Two major reasons for the lack of available talent are: (1) some young adults are leaving the County; and (2) local trade schools and colleges are unable to produce enough graduates that can satisfy the employment demand generated by the target industry sectors. According to the LIREDC Plan, studies by the Long Island Forum for Technology, and Connect Long Island there is an identified a gap between the skilled employees that companies demand and those available in the regional labor force. In addition, students with engineering and computer science majors are scarce. Providing an environment that will encourage young people to live in Suffolk County will ultimately increase the size of the labor pool available for target industry sector businesses. Currently, one of Suffolk County's challenges relates to the available variety of housing options, with supply falling short of demand for certain types of housing most desired by students, young employees, and seniors, both from a lifestyle as well as cost perspective. Students are often not committed to locating in the area permanently. Recent graduates and young workers typically lack the financial resources to buy single-family homes at prices demanded in Suffolk County. Similarly, seniors are often looking to downsize, partially for convenience, but also sometimes in response to living on a fixed income in retirement, or they are interested in locating closer to conveniences so they are less reliant on driving, but would like to remain in their communities. Rental units or smaller, less expensive ownership units, such as town homes or condos that require less equity, are a better fit than the traditional single-family detached house, for any of these population segments. These particular population segments also prefer a living environment that offers entertainment and dining amenities within close proximity to their home. In particular, while many of the young residents desire these amenities, they are typically not offered within single-family developments. Revitalizing the County's downtowns can help to attract students and young workers, as well as seniors looking to downsize, and breathe new economic vitality into otherwise underutilized downtown areas. While the key obstacle to downtown growth is lack of parking, "Connect Long Island" and transit-oriented, mixed-use developments can help make this issue less of an impediment.

¹ Long Island Economic Development Council.

Also, encouraging residents to live in more densely populated mixed-use areas increases use of public transportation and conserves resources, which ultimately preserves and improves the quality of life of for all of Suffolk County's residents.

2. Strengthen and connect employment centers:

The County has a number of successful business clusters and innovation centers that should be supported through infrastructure investments and incentives that encourage additional housing options.

In addition, business centers need to be connected with each other. Connections between clusters should include physical infrastructure (i.e., public transportation but also roadway infrastructure) and technical infrastructure, such as high speed data connections. Better connected clusters allow for a more efficient exchange of people, goods, data, and ideas. Sharing skill sets through a common labor market, supply chain efficiencies, and cross-application of new technologies across multiple industries are only a few of the benefits than be achieved by better connecting business clusters.

Employment centers also need to be better connected with surrounding residential concentrations through more efficient public transportation options. Connecting residential and employment areas will increase the attractiveness of the business clusters for employees and decrease congestion, which has become an ever-increasing soft cost for conducting business in Suffolk County.

3. Increase coordination and collaboration:

Coordinated planning initiatives across municipal boundaries are essential to foster a more efficient use of resources and to mitigate the potential adverse effects of development and growth in Suffolk County. For example, permitting streamlining such as the County Planning Commission's solar permitting initiative, which was adopted by all ten towns, and the Planning Commission-led East End Wind Code, which was created by town officials working together, enhances economic development and makes it easier to create jobs. Another example is the creation of the Suffolk Unified Permitting Portal (now Submission and Status Terminal), which was developed to speed and make county permitting more transparent, and which was also done in coordination with the towns. An approach already applied by most towns in Suffolk County is the TDR concept. TDR strives to encourage development in the most suitable locations but at the same time protects the County's most delicate resources. However, most programs only allow the transfer of development rights within municipal boundaries while this approach unleashes its greatest potential when applied on a regional level.

A few of the catalyst projects identified by the Long Island Economic Develop Council illustrate the success that can be achieved through regional coordination. In particular, Wyandanch Rising shows how Federal, State, and local coordination can generate momentum that is visible beyond municipal boundaries. With planning efforts funded by the New York State Brownfield Opportunity Area (BOA) program, the project was advanced under the cooperative leadership of the Town of Babylon and Suffolk County. The project's momentum convinced local business leaders of the unique opportunity in this area to create a redeveloped downtown for Wyandanch, with the result that construction of the sewer infrastructure improvements are nearing completion, and construction of the first phase of the mixed-use development commenced in the fall of 2013.

Coordination and collaboration is also one of the central elements of Suffolk County's transportation plan "Connect Long Island," which encourages, and indeed will require collaboration between various government entities. Collaboration and coordination between government, and private initiatives and programs, are also highlighted and supported by initiatives such as Accelerate Long Island, which was created to better match the County's highly educated workforce and education institutions with potential companies and business start-ups in the innovation sector.

4. Plan for Community Resiliency and Climate Adaptation:

In the wake of Superstorm Sandy in October 2012, it is more important than ever to plan for community adaption to climate change and resiliency. Ensuring that systems and facilities are resilient in the face of natural disasters has a direct bearing on the economic prosperity of a region. The more resilient such systems and facilities are, the more likely the region would fare well in a natural or other disaster and be able to move forward without undue economic damage in the aftermath. As was seen during the aftermath of Sandy, disruptions to basic services such as water and electricity can have devastating effects that can put many people out of work for an extended period of time. Also, the costs necessary to repair or replace damaged businesses, housing, and infrastructure can be prohibitive. It is for these reasons that policies, programs, and/or initiatives related to economic development need to also incorporate consideration of how to better achieve resiliency and adaptation to climate change. The New York Rising Community Reconstruction Program has identified community resilience techniques and factors to consider when planning for community redevelopment. In addition, FEMA has issued guidance for integrating local natural hazard mitigation into a community's comprehensive plan. It is imperative that economic development decisions be based on best available

hazard data, including the nature of local hazards, the vulnerability of people and property, and the potential destruction that can be caused by these hazards. Particular care should be given when planning for Suffolk's eight NY Rising Communities: 1) Fire Island, 2) Mastic Beach and Smith Point of Shirley, 3) Oakdale-West Sayville, 4) Village of Amityville and Copiague, 5) Village of Babylon and West Babylon, 6) Village of Lindenhurst, 7) West Gilgo to Captree; and 8) West Islip. Communication and collaboration between planners and emergency managers is crucial for ensuring that appropriate hazard assessment information is considered during future economic development planning. Policies should be developed to aid with post-disaster economic recovery. Technical assistance should be provided to support natural hazard mitigation for vulnerable small businesses. A community's safety and resiliency should be highlighted as a factor to attract potential new businesses to an area. These and other resiliency and climate adaptation techniques and recommendations should be considered when planning for economic development. *

1. INTRODUCTION

Housing provides an essential service—shelter—but it is also a defining element of community. Housing characteristics, including product type, price point, and property taxes, determine who is willing and able to locate in a community. Through public policy initiatives, communities can take a proactive approach and encourage the type(s) of housing desired by their residents. This is of particular importance in Suffolk County, where, in many areas, the limited housing options available prevent communities from attracting or retaining a more diverse population, a critical strategy for fostering and advancing Suffolk County’s economy and overall prosperity.

Many of the housing-related issues in Suffolk County have manifested themselves over the past several decades and are now posing an obstacle for the County on its path to continued, sustainable growth. In many areas, Suffolk County also lacks affordable housing options and thus, some existing as well as potential residents are priced out of the market. In particular, the lack of affordable housing options is a serious threat to Suffolk County’s continued success. In addition, as a result of the disastrous effects of Superstorm Sandy in October 2012, consideration of resiliency and adaption to the effects of climate change has been brought to the forefront of comprehensive local and regional planning efforts. This event has emphasized the importance of ensuring that residential communities are resilient in the face of natural disasters. The more resilient a community is, the less likely it is that there will be irreparable or unforeseen housing damage. As was seen in the aftermath of Sandy, many homes were damaged or destroyed, and the costs necessary to repair or replace housing can be prohibitive. It is for these reasons that policies, programs, and initiatives related to housing need to also incorporate consideration of how to better achieve resiliency and adaptation to the effects of climate change. It is the goal of the analysis presented below to identify the most prevalent housing-type gaps and to provide a guide to prioritize areas most suitable for accommodating future housing needs. This appendix is organized into the four following sections:

- Section 3.1., Demand Conditions Assessment, identifies the key trends that have and will affect economic development opportunities in Suffolk County;
- Section 3.2., Supply Conditions Assessment, serves to assist the County and local municipalities in their efforts to better align past studies, plans, and economic development initiatives and apply findings more effectively when responding to housing challenges. This section also provides guidance for the development of future housing

programs, policies, and projects that will serve to maximize economic opportunities and achieve smart and sustainable growth;

- Section 3.3., Guidelines for Accommodating Growth Potential, presents criteria to identify appropriate potential future priority growth center locations for various housing types, with an emphasis on how these locations would complement existing and potential future uses; and
- Section 3.4., Findings, summarizes the identified current and future economic development opportunities and challenges throughout the County, relative to housing issues.

1.1. DEMAND CONDITIONS ASSESSMENT

This section examines and explains the prevailing housing trends observed since 1950, and provides an outlook for the future through 2045, which is the latest year for which population and employment projections from the New York Metropolitan Transportation Council (NYMTC) have been made. In particular, the section examines how age, income, and household composition shifts have led to a change in demand for housing products in Suffolk County, and notes where within the County the changes are most notable. One example is the generation of baby boomers. As discussed in more detail in “Age Distribution,” below, there is data to support that in most parts of the County their population has grown and many of them want to downsize into smaller, townhouse- or apartment-style units.

1.1.1. DEMOGRAPHIC TRENDS

The following section describes the demographic trends observed in the County since 1950, and describes demographic projections through 2045. Additional demographic analyses can be found in the following recent studies:

- The “Suffolk County Comprehensive Plan 2035, Volume IA” a 2011 report that details historic and recent socioeconomic trends.
- The “Long Island Index Profile Report 2012” has pointed out the changing composition of the population, in particular the increase of the aging population and the flight of younger residents. The profile report also identifies the lack of affordable housing options as a major obstacle in both Suffolk and Nassau Counties.
- Other studies, such as the “Long Island 2035 Report” by the Long Island Regional Planning Council and the “Strategy Paper” by the Long Island Economic Development Council, come to conclusions that are similar to those of the Long Island Index.

- “Long Island’s Rental Crisis,” a report by Regional Plan Association (RPA) from 2013 identifies and illustrates the issues pertaining to affordable housing, with an emphasis on rental housing.

1.1.1.1. Population

From colonial times until World War II, Suffolk’s gradual population growth was primarily due to natural increase. After World War II, the use of the automobile encouraged suburban growth from the west. In 1950, the total County population was 276,000 (compared with its current population of approximately 1.5 million). In the period from 1950 to 1970, Suffolk County developed rapidly, with a relatively large proportion of young, married adults seeking the American Dream moving to the county and having children. By 1960, Suffolk County’s population had more than doubled, and by 1970 its population had quadrupled, increasing to over 1.1 million, with most of the new residents originating from New York City and Nassau County. **Figure C-1** illustrates that the County’s western and central towns were the main recipients of population growth during this period.

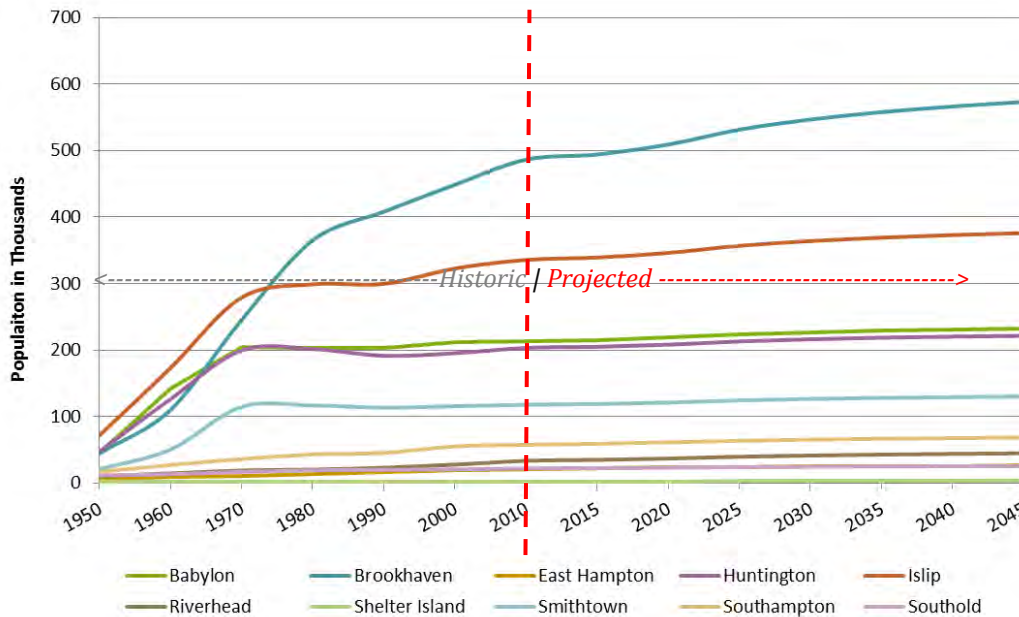


Figure C-1: Historic and Projected Population for Towns in Suffolk County

Sources: U.S. Census, New York Metropolitan Transportation Council (NYMTC), and Suffolk County Division of Planning and Environment

Between 1970 and 1980 Suffolk County still grew by more than 150,000 people, with most of the growth taking place in the Town of Brookhaven, with an increase of approximately 100,000. In the 1970s growth slowed, with the exception of Brookhaven in central Suffolk. In the 1980s, the population remained relatively steady, with fewer than 40,000 people added to the County's residential population.

Over the past two decades, population growth has been the most significant in Brookhaven and Islip, as shown in **Figure C-2**. Meanwhile, relatively modest growth occurred in the other western town and in the eastern towns. As shown in the figure, the population in most of Suffolk's towns is expected to increase only modestly into the future, with the exceptions of Brookhaven and Islip, where population growth is expected to be more significant.

In contrast, many of the western communities lost population over the past 20 years. The only notable exception in the western part of the County is Melville, the center of the Route 110 Corridor. The population in this particular area doubled from approximately 4,000 people in 1990 to over 8,000 in 2010. The Bay Shore area also saw a noticeable increase.

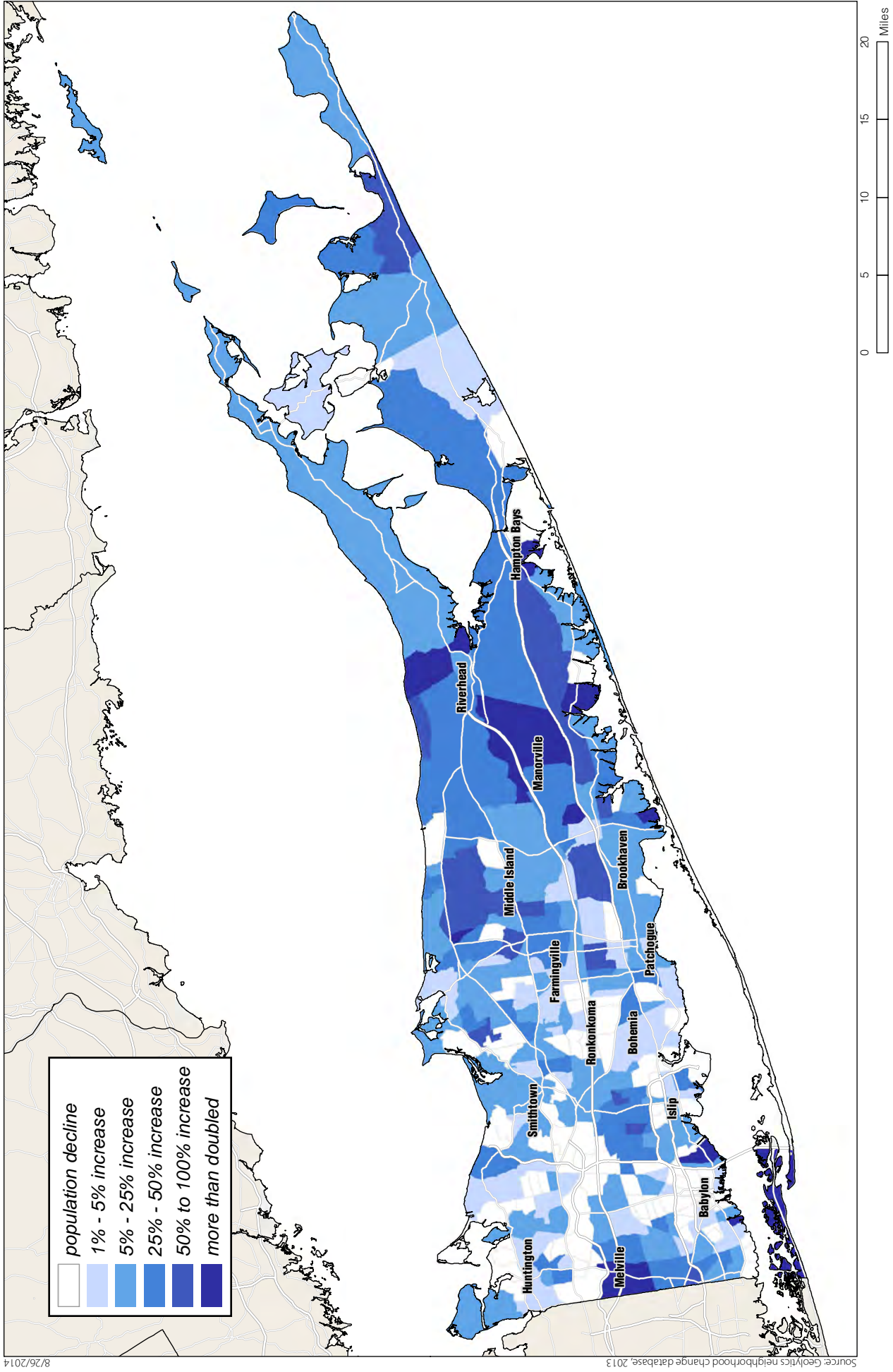
Suffolk County still attracts a substantial number of new residents from outside of the County. Between 2002 and 2011, Suffolk County received on average between 15,000 and 20,000 people annually from outside its borders.¹ The majority (60 percent) of moves to the County were from New York City and Nassau County. Meanwhile, about 10 percent more people than migrated to Suffolk County left the County, creating negative net migration. Of those migrating out of the County the majority moved out of state to areas such as Florida and the Carolinas.

Today, the County's population has narrowly surpassed 1.5 million people and is projected to grow modestly over the coming decades. Despite the recent negative net migration trend, the Suffolk County Division of Planning and Environment estimates that based on its projections, by 2045 Suffolk County's population will reach 1.7 million residents, mainly due to natural increase. Meanwhile, based on current zoning, the County has almost reached full build-out conditions such that the opportunity to develop conventional single-family housing will be limited.

1.1.1.2. *Age Distribution*

Figure C-3 shows the age distribution of Suffolk County residents from 1990 to 2017, which is the latest year for which age projections are available from ESRI, and compares data sets to the 2010 age distribution of the United States for comparative purposes. As shown in the figure, in

¹ Internal Revenue Service: tax filing 2002 to 2011.



8/26/2014

Source: Geolytics neighborhood change database, 2013

Population Growth for Suffolk County, 1990 to 2010
Figure C-2

1990 Suffolk County included a high proportion of “young adults” (ages 19 to 34)—most likely baby boomers and children of the influx of young married adults that moved to the County between 1955 and 1975. This group, as shown in the graph, remained in the County over the decades, representing the largest age group in each decade. While reportedly there was a

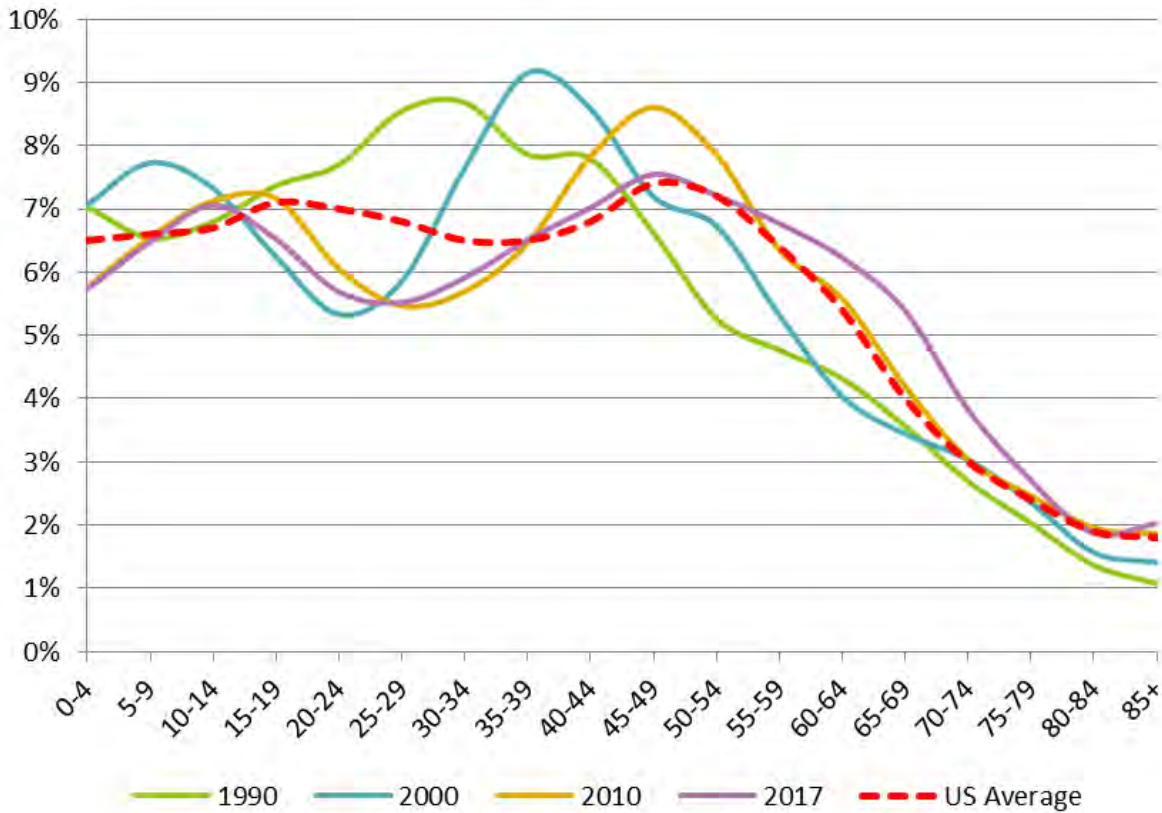


Figure C-3: Age Distribution for Suffolk County: 1990, 2000, 2010, and 2017 (Projected), Compared with U.S. Age Distribution in 2010

Sources: U.S. Census and American Community Survey (ACS)

dearth of births in the County from about 1980 to 1994 (i.e., the baby bust), the graph shows that the proportion of newborns in the County in 1990 actually exceeded the proportion in the nation overall. While the percentage of school-age children as a percent of total population has been reasonably close to the national percentage for the past two decades, the presence of people in their late teens and twenties has deviated substantially. Starting in 2000, the share of young adults began to drastically decline and remained significantly lower over the following decades when compared with the share in the U.S. overall. Nationally, the population in this

young adult age group accounted for approximately 7 percent of the total population in 2010; in Suffolk County it represented about 5.5 percent of total residents. While the County's young adult population may never be quite what it was in the 1990s as a result of the population explosion that occurred in the County from 1955 to 1975 and the baby boomers being of that age at the time, the County's low share of young adults may be attributed in part to other factors. According to the "Connect Long Island," more than two-thirds of young people are somewhat or very likely to leave Long Island within the next five years, a rate three times greater than that at which they left between 1998 and 2008. Also of note, the figure demonstrates that the largest age group today and projected into the future is in the adult category from about ages 40 to 50.

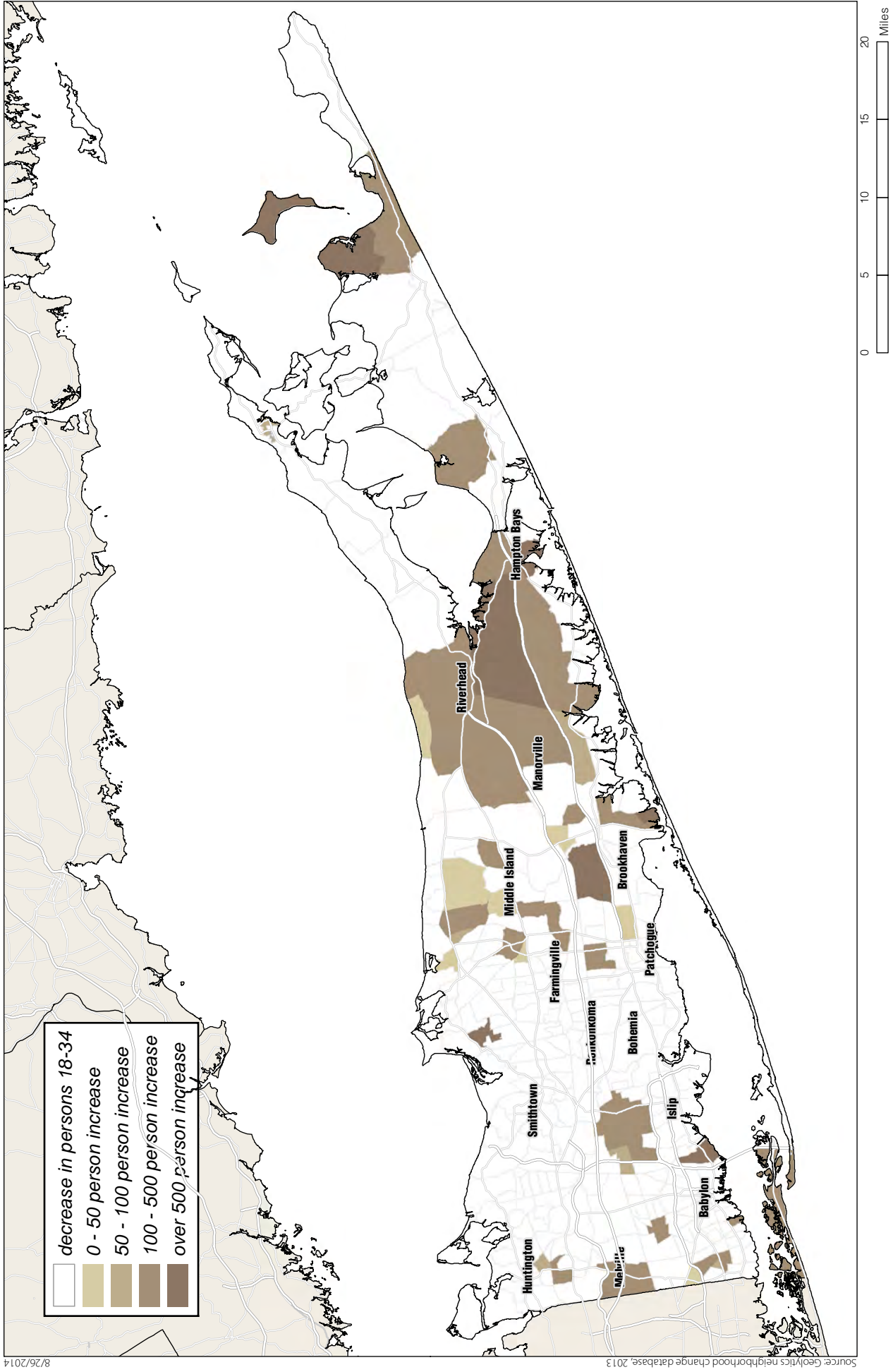
Another trend illustrated in **Figure C-3** is the increasing share of the 55 and older population group in Suffolk County. The share of population aged 55 and older generally grew between 1990 and 2000 and between 2000 and 2010, and it is projected to grow further by 2017.

These age trends are not evenly distributed throughout Suffolk County. For example, as shown in **Figure C-4**, while most of the western portion of the County experienced a stagnation or decrease in 18 to 34 year old residents between 1990 and 2000, areas further east including the triangle between Riverhead, Hampton Bays, and Manorville, saw significant increases; however, this was mostly a function of increasing total population in those areas.

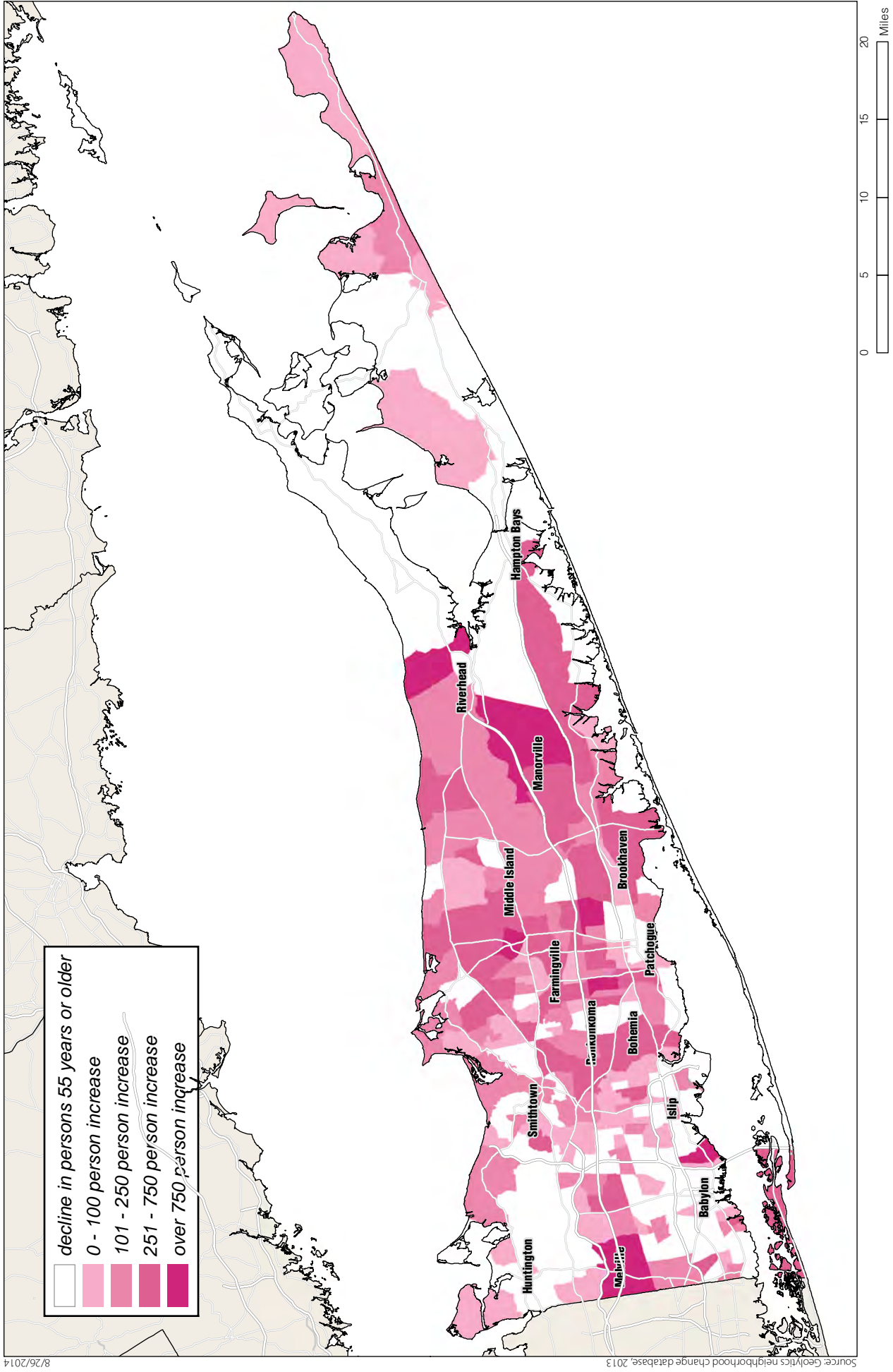
In contrast, older population segments grew more uniformly throughout the County. **Figure C-5** shows that only the far western portions of the County, as well as certain areas on the South and North Forks did not experience growth in the 55 and older population segment. The largest increases were observed in Melville and in areas along the Long Island Expressway, such as Ronkonkoma, Manorville, and Riverhead.

The Long Island Index has mapped detailed age group trends by community, showing changes between 1990 and 2010.¹ Similar to the maps above, the maps produced by the Long Island Index point to a substantial decline in the population segments between the ages of 18 and 34, particularly in the central and western Suffolk County towns. At the same time, the population age 55 and older increased noticeably throughout the County, growing in many communities by more than 25 percent. These trends may be attributed in part due to the aging of the baby boomers and the baby bust generation moving into the young adult age groups, coupled with an apparent recent migration of young adults out of the County.

¹ Long Island Index, Long Island Index Profile Report 2012, page 6.



Change in Population Age 18 to 34, 1990 to 2010
Figure C-4



Change in Population Age 55+, 1990 to 2010
Figure C-5

1.1.1.3. Race

Consistent with trends found in so many counties and cities across the country, the racial profile of Suffolk County has shifted in recent decades, with the Non-Hispanic White population shrinking and various segments of the minority population, particularly the Hispanic population, growing as a percentage of total population. As shown in **Figure C-6**, the County’s Hispanic population grew from 7 to 16 percent between 1990 and 2010, while the Non-Hispanic White population decreased by 13 percentage points, from 85 percent of the total population in 1990 to 72 percent in 2010. In terms of absolute growth, all racial groups grew between 1990 and 2010 with the exception of the Non-Hispanic White population, which declined by almost 62,000 persons over the 20-year period.

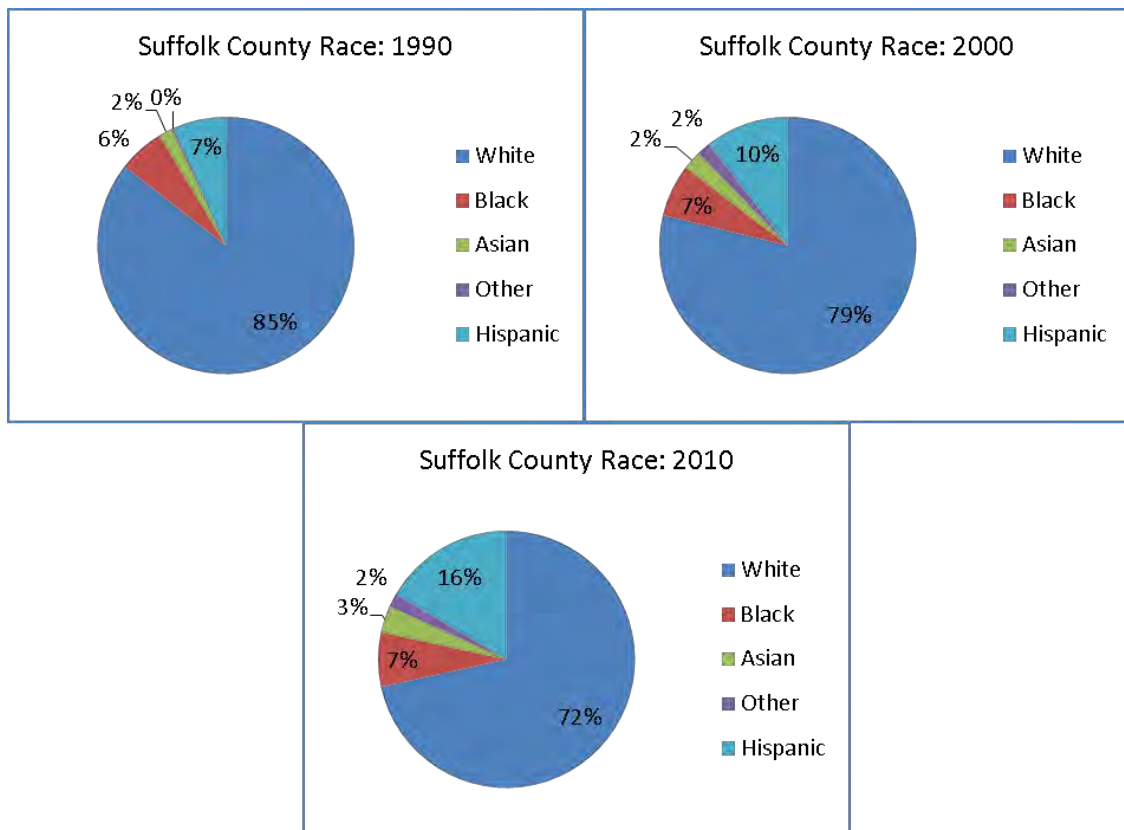


Figure C-6: Racial Profile for Suffolk County: 1990, 2000, and 2010
 Sources: U.S. Census, 1990, 2000, 2010

As indicated above, the proportion of Suffolk County’s Hispanic population grew notably (by about 9 percentage points) between 1990 and 2010. Most of this growth occurred in areas such

as Brentwood, Huntington Station, and much of the Town of Brookhaven, but portions of Riverhead and areas of the South Fork saw a substantial increase in their Hispanic populations as well, as illustrated in **Figure C-7**.

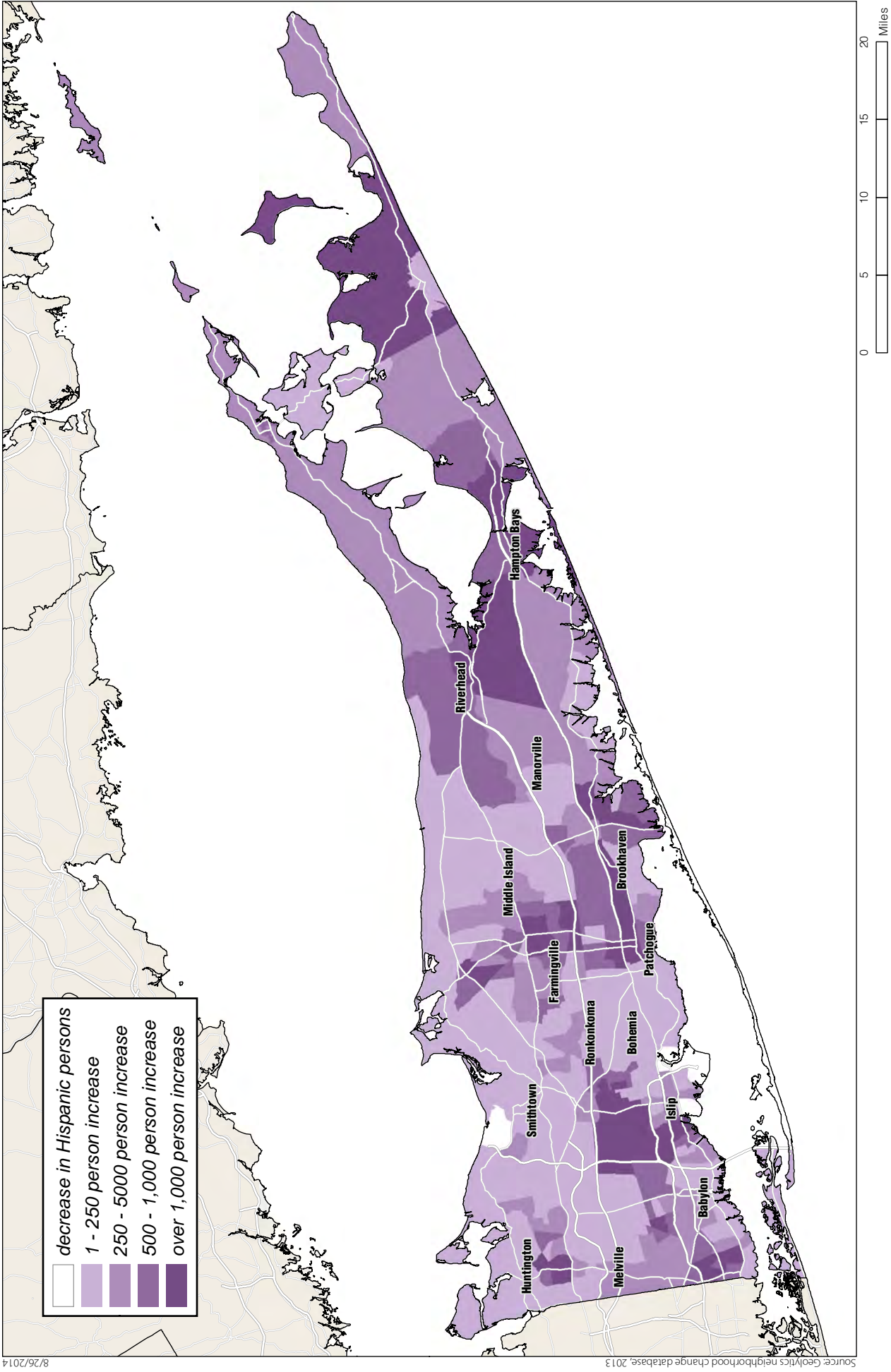
The Non-Hispanic Black population has grown only marginally over the past two decades. Growth centers for African Americans were predominantly in the Towns of Islip, Brookhaven, and Riverhead (see **Figure C-8**).

The percentage of Suffolk County's population that is Non-Hispanic White decreased by 13 percentage points from 1990 to 2010, as indicated in **Figure C-6**. Most of the towns in the western and central portions of the County experienced a loss while towns farther east experienced significant increases, which correlates with total population trends (see **Figure C-9**).

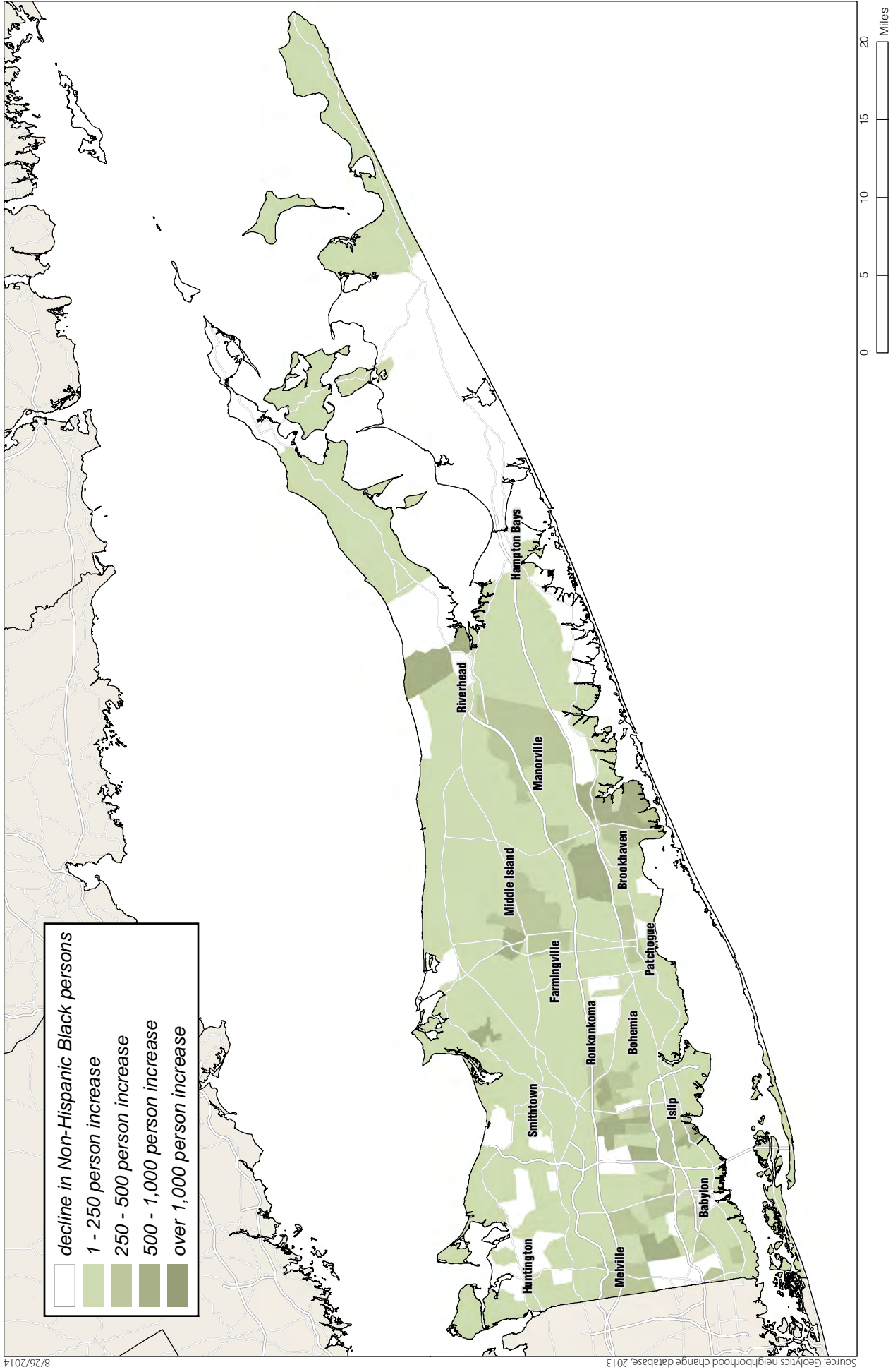
1.1.1.4. Education

Suffolk County's population is highly educated; this highly educated workforce is one of the County's primary community and economic assets. In 2010, 89 percent of the population age 25 and older had obtained at least a high school diploma or more advanced degree (see **Figure C-10**), which was two percentage points above the national average in the United States.

As shown in **Figure C-10**, education levels in Suffolk County have generally increased between 1990 and 2010, reflecting the growing local and national demand for improved skill sets and formal education. In 1990, 59 percent of the population had a high school diploma only (82 percent had at least a high school diploma), while 13 percent had a bachelor's degree only (23 percent had at least a bachelor's degree) and 10 percent had a post-graduate degree. By 2010, the percent of population age 25 and older with a bachelor's degree only and post-graduate degree had increased to 18 percent and 14 percent, respectively (32 percent had at least a bachelor's degree). This move toward higher education reflects the changing nature of the Suffolk County and U.S. economy, where professional and scientific activities have come to play a larger role, while manufacturing industries have declined but still play an important, albeit evolving role.



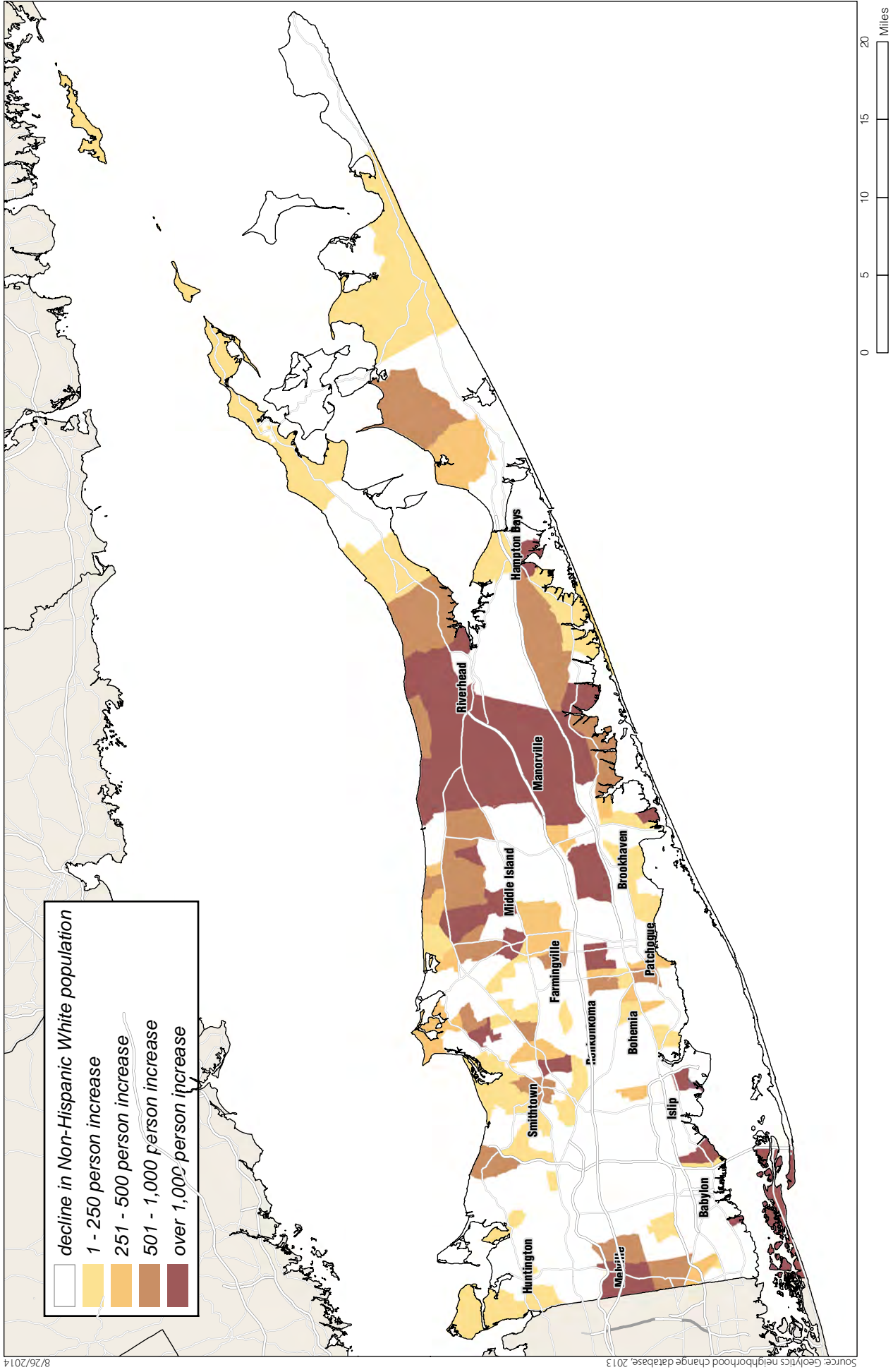
Change in Hispanic Population, 1990 to 2010
Figure C-7



8/26/2014

Source: Geolytics neighborhood change database, 2013

Change in Non-Hispanic Black Population, 1990 to 2010
Figure C-8



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Source: Geolytics neighborhood change database, 2013

Change in Non-Hispanic White Population, 1990 to 2010
Figure C-9

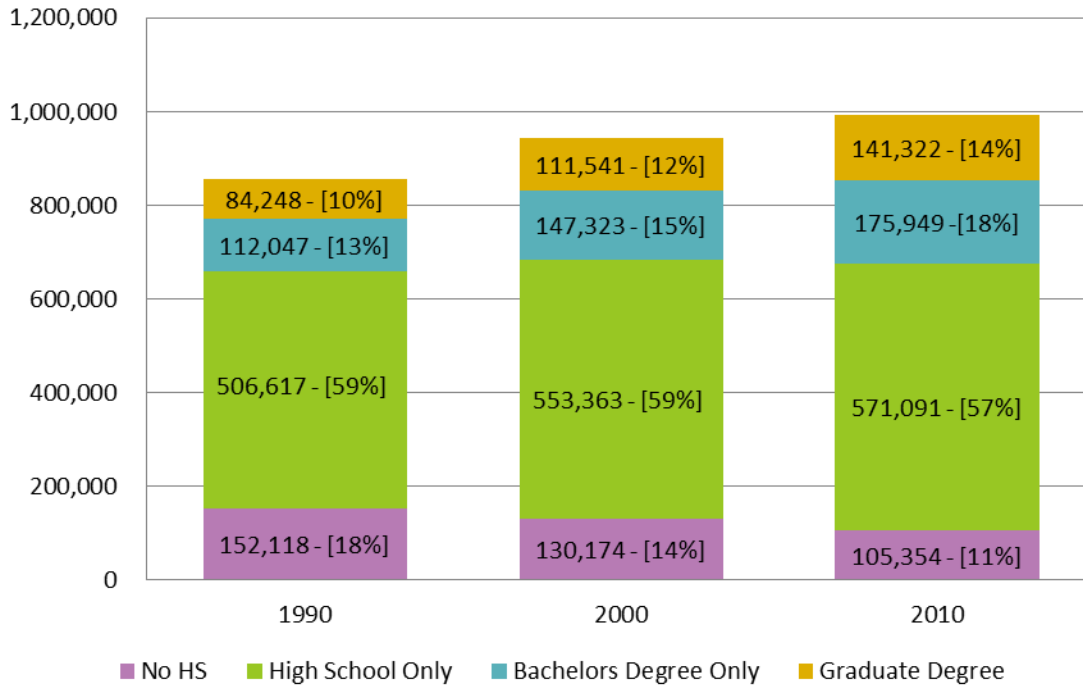
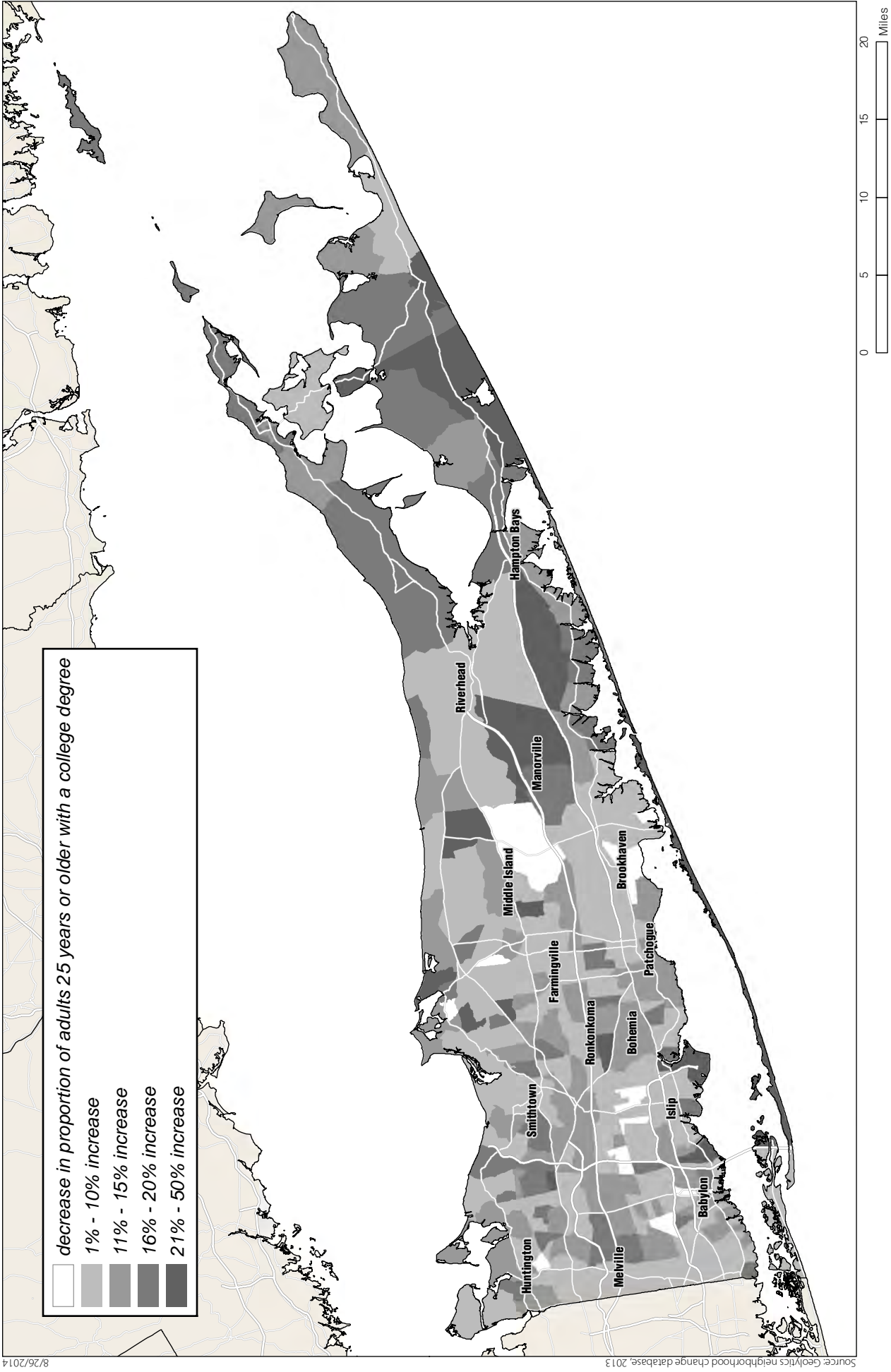


Figure C-10: Educational Attainment for Population 25 Years and Older, Suffolk County: 1990, 2000, and 2006-2010
 Source: U.S. Census and ACS

As **Figure C-11** illustrates, the trend toward higher education is generally consistent throughout the County. With the exception of only a very few census tracts, primarily in Babylon and Central Islip in communities such as Wyandanch and Brentwood, as well as in areas such as Huntington Station and parts of Brookhaven, the proportion of residents with at least a bachelor’s degree has increased in all areas of Suffolk County. The communities that are exceptions could be areas with growth in immigrant populations with lower educational attainment.

The largest increases in population with advanced degrees took place in the areas around Manorville and Hampton Bays, which were also among the places with the highest percentage of population growth. Census tracts on the North and South Forks also exhibited substantial increases in population with advanced degrees.



Percent Change in Population with College Degrees, 1990 to 2006-2010
Figure C-11

1.1.1.5. *Households and average household size*

Between 1990 and 2010, the number of households in Suffolk County increased by approximately 75,000 from 425,000 to 500,000, while the population grew by about 171,000 people. These additional households had an average household size of less than 2.30 persons per household, well below the average household size for all of Suffolk County (2.93 persons per household).

Decreasing household size is a trend that has occurred nationally, and is not particular to Suffolk County. However, the rate of decrease in the County was almost double that of the nation's between 1990 and 2010. During this time, household size nationwide decreased by 1.9 percent compared with 3.6 percent in Suffolk County. This is primarily the result of the County's explosive population growth during the 20-year period from 1955 to 1975. Nevertheless, the average household size in Suffolk County, which was 2.93 persons per household in 2010, has remained about 14 percent larger than the United States average, which was 2.58 persons per household in 2010. Suburban communities tend to have a somewhat higher household size—e.g., Bergen County in New Jersey has an average household size of 2.66 and Rockland County in New York has an average household size of 3.07.

As shown in **Figure C-12**, Southampton and East Hampton are the only towns in Suffolk County that experienced an increase in average household size between 1990 and 2010. Areas in which decreases in household size were particularly pronounced over the 20-year period include Brookhaven and Smithtown, where household size shrunk by approximately 6 and 7 percent, respectively. The reason for the increase in household size in East Hampton and Southampton is likely the increase in Hispanic populations there (which tend to have larger household sizes).

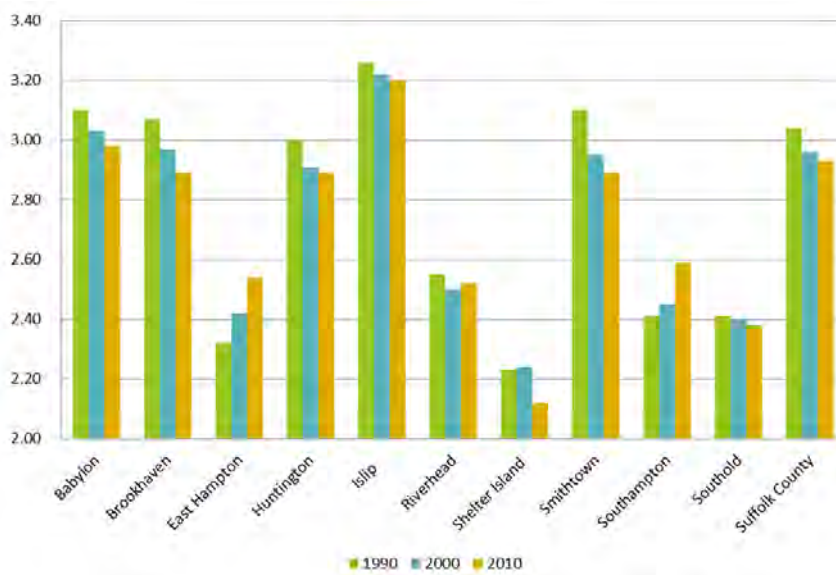


Figure C-12: Average Household Size by Town: 1990, 2000, and 2010

Sources: U.S. Census

It is notable that the County's East End towns, e.g., East Hampton, Riverhead, Shelter Island, Southampton, and Southold have the lowest average household size. This is because there is a larger proportion of older persons and mobile homes in eastern Suffolk, and therefore more one- and two-person households.

The decrease in household size described above is notable in its potential to affect the demand profile of the Suffolk County housing market. Households with fewer members are likely to seek out smaller units and amenities different than those sought by larger households. Developers and communities may need to adjust their housing product mixes to respond adequately to the County's decreasing household sizes.

1.1.1.6. Household composition

Household composition is another indicator that provides insight relative to the potential demand preferences of households in Suffolk County. The composition of Suffolk County households can affect the demand for different housing configurations and provide an indication for the number of bedrooms, garages, and other configurational details.

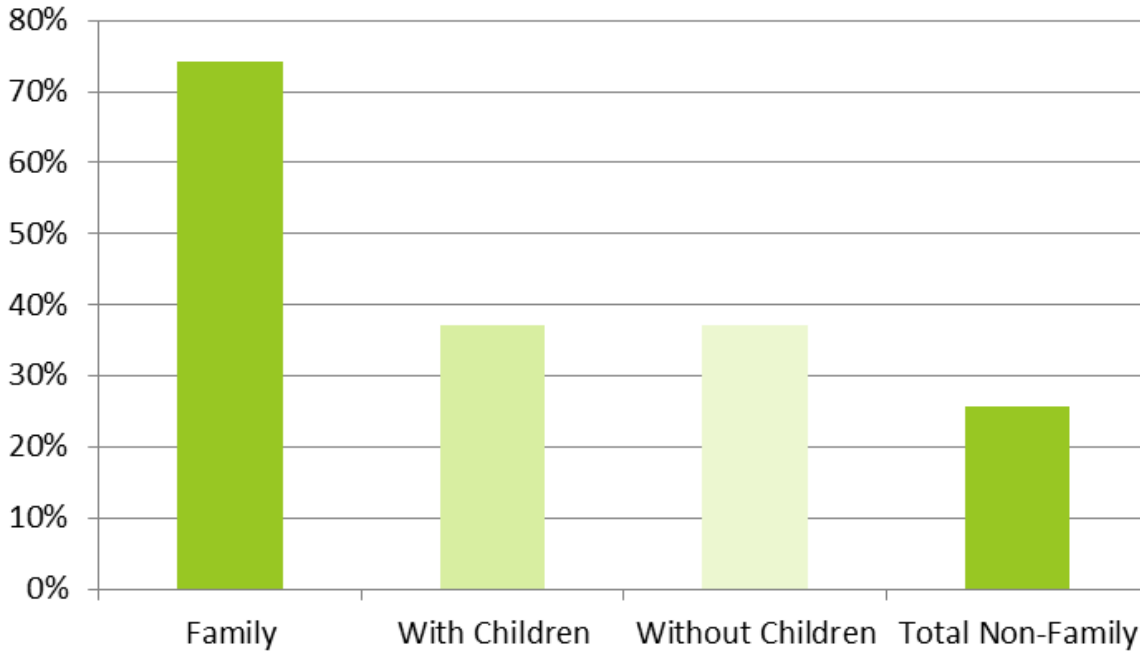


Figure C-13: Household Composition, Suffolk County: 2010

Sources: U.S. Census and ACS

As shown in **Figure C-13**, a majority of people in Suffolk County live in family households (74 percent) while the remaining residents live in non-family households. The family household segment can be divided into households where children under the age of 18 are present and households without children in this age group. In Suffolk County about half of family households or 37 percent of the total households live with children under the age of 18. Non-family households include households with unrelated household members, such as roommates or unmarried couples. They also include one-person households, which represent the vast majority of non-family households (80 percent).

Overall, only 37 percent of all households are family households with children under the age of 18. This segment is also likely to have a preference for single-family housing. However, it's much more common to be in a different type of household such as smaller household units with one person (21 percent of households) and family households with grown-up children or no children (37 percent of households). The remaining 5 percent of households have unrelated members. The present composition suggests that there is ample potential demand for housing options other than single-family homes. Brokers interviewed for this study confirmed this notion, indicating that latent demand for smaller units is high and that the lack of product has contributed to inflated prices for this type of product.

The lack of the desired types of housing products for the changing market in Suffolk County has had a number of undesirable side effects. As described in RPA’s recent study on the housing market on Long Island, the number of young adults between the ages of 20 and 34 who are living with their parents or other older relatives increased substantially between 2000 and 2010, reaching 55 percent in 2010.¹

1.1.1.7. Household income

1.1.1.7.1. Median household income

While incomes in most Suffolk County communities decreased between 1990 and 2010, Suffolk County remains one of the most affluent counties in the nation. As of the 2007–2011 ACS, the median household income in Suffolk County was \$90,150 in 2013 dollars compared with \$50,700 (in 2013 dollars) for all of the U.S. in 2011.

The 2011 median household income in Suffolk County was 6.4 percent lower in constant dollar terms than it was in 1989. As shown in **Figure C-14**, over the course of the approximately 20 year period, median household incomes showed steady increases in only three towns—Riverhead, Southampton, and Southold. Each of these towns experienced increases in median household income of over 10 percent between 1989 and 2007–2011. In contrast, over the same time period median household incomes in the Towns of Babylon and Islip decreased by over 10 percent.

As of 2007–2011, median household income was highest in Smithtown (\$110,510) and Huntington (\$108,710) and lowest in Riverhead (\$71,440) and Shelter Island (\$76,642).

1.1.1.7.2. Household income distribution

As shown in **Figure C-15**, the largest share of Suffolk County households (31 percent) earns between \$50,000 and \$99,999. Approximately 22 percent earns between \$100,000 and \$149,999 annually, and another nearly 21 percent earn more than \$150,000. Combined, these two high-income segments account for approximately 43 percent of the County’s households. Workforce households, i.e., those households earning between \$35,000 and \$100,000 per household,² represent nearly 40 percent of all Suffolk County households. Only about 17 percent of the County’s households have an income of less than \$35,000. In comparison, the

¹ “Long Island’s Rental Housing Crisis,” Regional Plan Association, 2013, page 7.

² Defined as households below the Area Median Income (AMI), which was set at \$105,000 for Nassau and Suffolk Counties and lowest maximum HUD income level for one-person eligible unit.

income group earning less than \$35,000 per year in all of the U.S. accounts for about 36 percent.

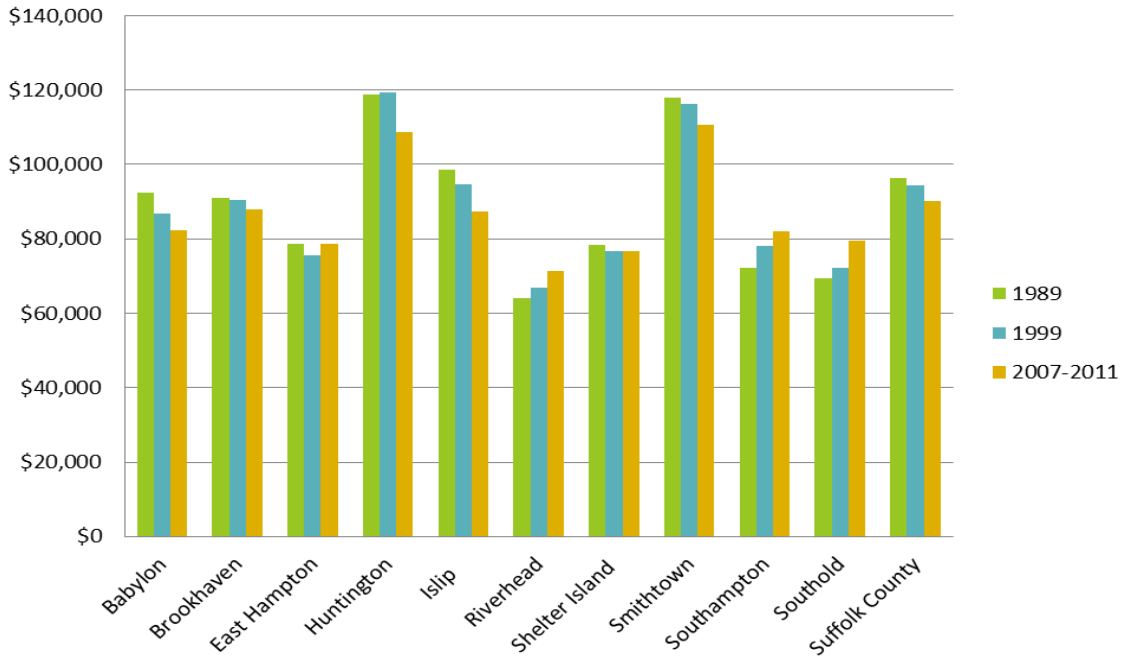


Figure C-14: Median Household Income: 1989, 1999, and 2007-2011 (in 2013 dollars)
Sources: U.S. Census and ACS

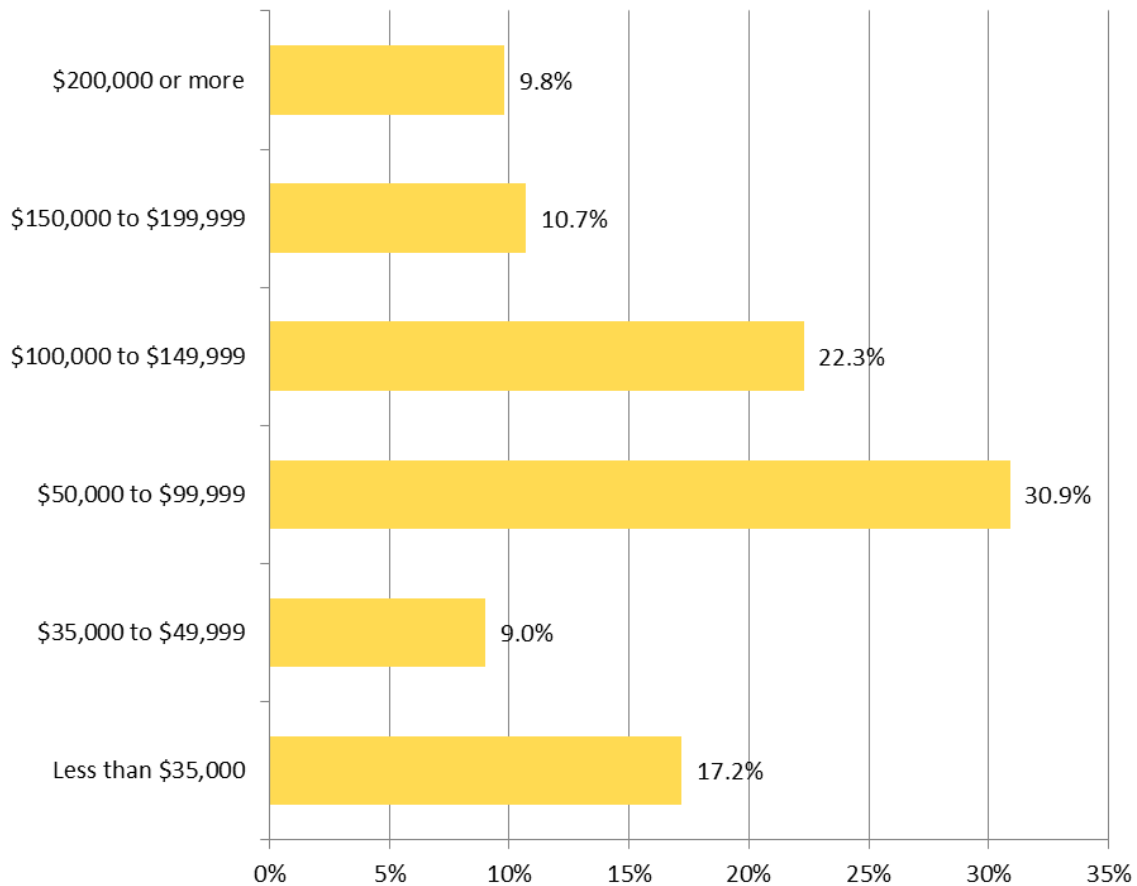


Figure C-15: Suffolk County Household Income Distribution: 2007-2011

Source: U.S. Census and ACS

1.1.1.7.3. Household income spent on housing

A homeowner's housing cost includes a mortgage (principal and interest), plus taxes and insurance. A renter's housing cost includes rent paid for shelter plus utilities. A substantial proportion of households in Suffolk County pay 30 percent or more of their income for housing, a condition that is typically considered a cost burden and indicative of a shortfall in affordable housing. Based on 2007–2011 ACS data, approximately 48 percent of Suffolk County households are "cost burdened," i.e., they are paying 30 percent or more of their household income towards housing.

Renter households in Suffolk County are more likely to be cost burdened than owner households, with 57 percent of renter households paying 30 percent or more of their income towards housing, compared with 46 percent of owner households.

Figure C-16 shows the share of cost burdened households by income bracket. It illustrates that higher-income households tend to be less affected by high housing costs: approximately 34 percent of cost-burdened households in Suffolk County are earning \$75,000 or more annually.

Instead, households in the middle and lower income categories tend to be disproportionately cost burdened. While households earning less than \$75,000 per year only represent 42 percent of households, they account for 65 percent of cost burdened households in Suffolk County. Cost burdened households are most prevalent in the Towns of Islip and Babylon, where 50 and 52 percent of households, respectively, are paying 30 percent or more of their income towards housing.



Figure C-16: Income Distribution of Suffolk County Households Paying 30 Percent or More of Income on Housing: 2007-2011

Source: U.S. Census and ACS

1.2. SUPPLY CONDITIONS ASSESSMENT

While the demographic changes that have occurred over the past two decades have created a new housing demand profile, the supply of units suitable to capture this demand is often unavailable in Suffolk County. This Supply Conditions Assessment analyzes currently available housing stock. In particular, it reveals that prevailing single-family housing developments have consumed much of the County's developable space; therefore, new housing development strategies and approaches may be needed to satisfy the changing demands of the housing market in the County. Current estimates indicate that less than 9 percent of Long Island's total land—about 70,000 acres—is undeveloped and available for development of new residential, commercial or industrial activity,¹ which leaves limited room for any type of development, especially the development of more low-density single-family housing. Most of this land is in eastern Suffolk County, although significant amounts remain in Nassau and western Suffolk. This study assesses trends to analyze whether supply has kept pace with changing market conditions, and identifies housing product segments that are underserved or missing in the current Suffolk County housing market.

1.2.1. TOTAL UNITS

As of 2010, based on U.S. Census data, there were approximately 570,000 housing units in Suffolk County. Of these approximately 500,000 were occupied, yielding a vacancy rate of approximately 12 percent.² As illustrated in **Figure C-17**, Suffolk County's largest town, Brookhaven, contained the largest share of total occupied units (approximately 163,000) and also the largest share of renter-occupied units.

¹ www.rpa.org/pdf/LI2035_Visioning_Initiative_Report.pdf

² The actual vacancy rate is likely to be much lower since the recorded vacancy rate includes seasonal homes.

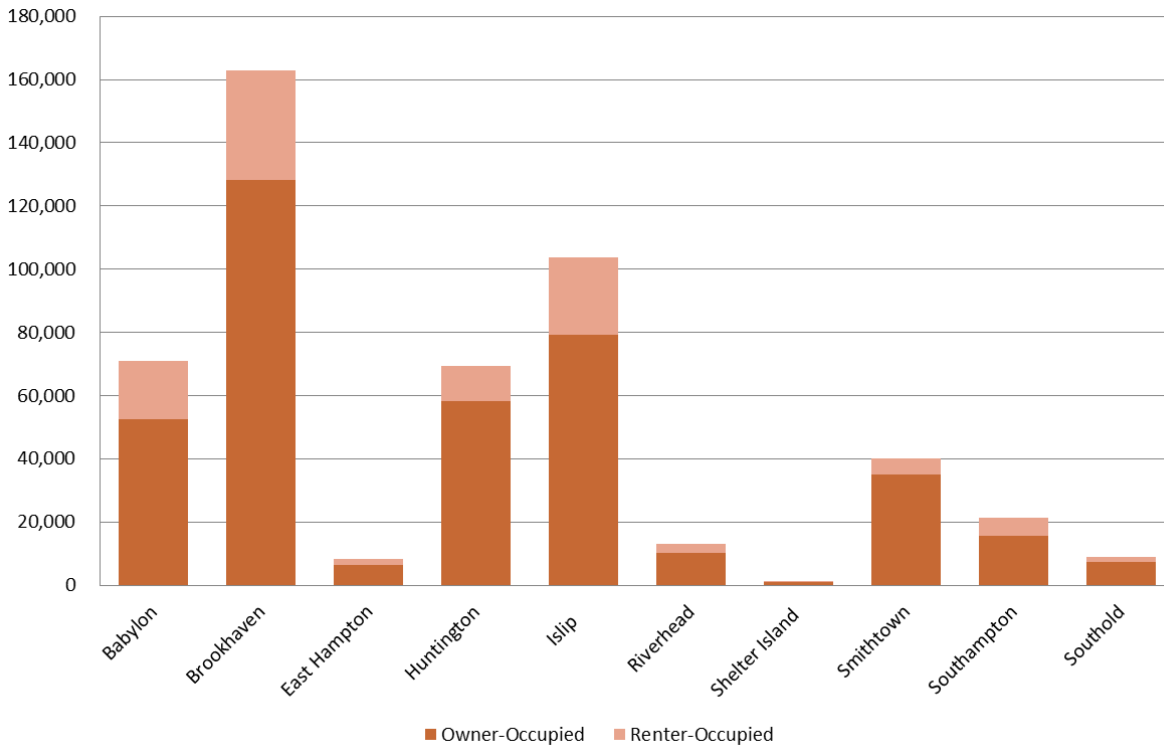


Figure C-17: Total Occupied Housing Units by Tenure: 2010
 Source: U.S. Census

1.2.2. TENURE (RENT VS. OWN)

As shown in **Figure C-18**, the Suffolk County housing stock is heavily dominated by owner-occupied units. As of 2010, approximately 79 percent of the County’s occupied units were owner-occupied. Southampton and Babylon had the lowest owner occupancy rates (approximately 74 percent each) and Smithtown had the highest (87 percent).

As documented in RPA’s 2013 publication “Long Island’s Rental Housing Crisis,” the share of rental units on Long Island (about 21 percent in 2011) is substantially lower than in other suburban communities around New York City, including the New York region (33 percent), Southwest Connecticut (33 percent), the Hudson Valley (34 percent), and Northern New Jersey (37 percent). Based on 2007-2011 ACS data, Suffolk County also had an even lower share of rental units (including both occupied and vacant units) at approximately 18 percent. When compared with similar suburban communities such as Monmouth County, New Jersey

(approximately 23 percent) and Rockland County (29 percent), Suffolk County’s share of rental

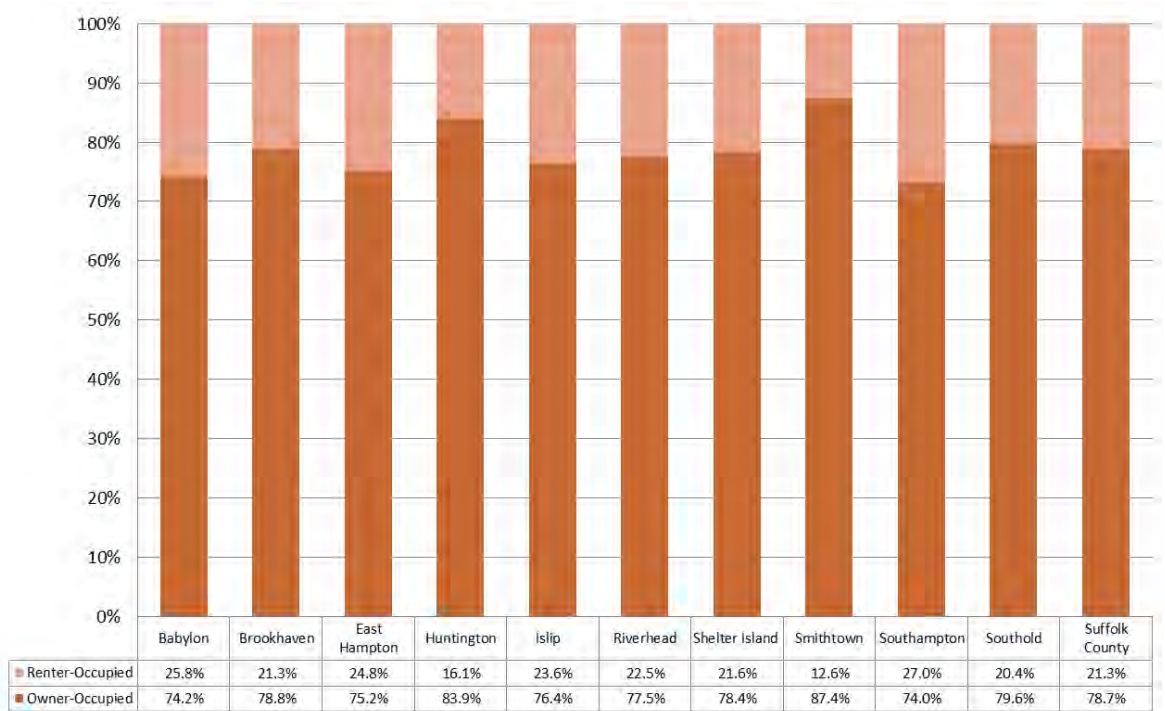


Figure C-18: Housing Tenure: 2010

Source: U.S. Census

units is still lower. Not only that, but the vacancy rate for rental housing on Long Island is very low—approximately 4 percent compared with 6 to 8 percent in these other New York City suburbs—highlighting the difficulty that renters face to find housing.¹ However, Suffolk County’s rental vacancy rate was 6.0 percent in 2007-2011, which was actually slightly higher than the rental vacancy rate in comparable suburbs such as Monmouth County, New Jersey (5.9 percent) and Rockland County, New York (5.3 percent).

RPA’s 2013 publication, “Long Island’s Rental Housing Crisis,” also documents that there is widespread acknowledgment that thousands of people live in illegal apartments throughout Suffolk because of the lack of lawful rental housing stock. The number of these apartments is uncertain; however, in 1989, the Long Island Regional Planning Board estimated that 90,000 illegal apartments were created in the 1980s alone, and it is evident that many more have been created since then as population has increased while the number of new legal rental homes has

¹ RPA, *Long Island’s Rental Housing Crisis*, September, 2013.

lagged. While filling a critical need, illegal apartments can lead to unsafe and overcrowded conditions, and make planning for community services and infrastructure problematic. Legalizing these apartments may result in a more effective and safer use of the existing housing stock.

1.2.3. HOUSING TYPE

1.2.3.1. Single-family housing

Single-family detached housing remains the prevailing housing type in Suffolk County's communities. The vast majority of housing units (80 percent or 452,932 units based on 2006-2010 ACS data) are single-family detached homes. As shown in **Figure C-19**, each Town's share of the County's single-family homes remained relatively the same over the period from 1990 to 2006-2010. The Town of Brookhaven had the largest share of the County's single-family homes in 2006-2010 at 30 percent, as shown in the figure.

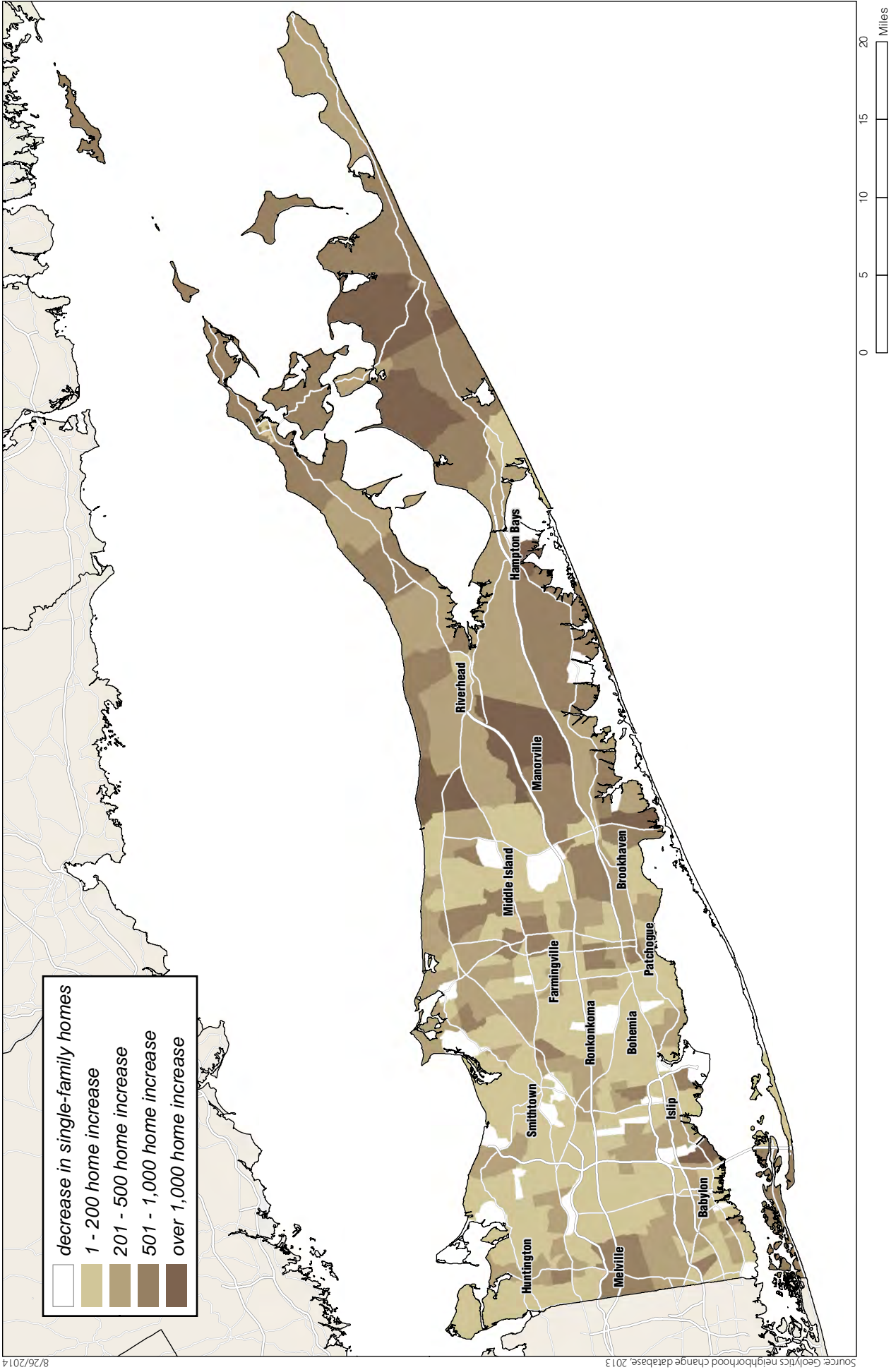
However, the Town with the greatest proportion of single-family homes compared to its total number of housing units was Shelter Island (97.7 percent), followed by Southold (88.8 percent). Meanwhile, Riverhead had the lowest proportion of single-family homes at 70.1 percent.

The number of single-family houses grew in all Suffolk County towns between 1990 and 2006-2010, increasing the total inventory of single-family homes by 63,107 units (16 percent), representing approximately 71 percent of the County's total housing growth during the same period.

Single-family housing growth was highest in Brookhaven and Islip, which gained 23,425 and 8,273 single-family homes, respectively, between 1990 and 2006-2010. Shelter Island (887 units) and Southold (2,412 units) were at the other end of the spectrum with the lowest numbers of additional single-family units. In terms of relative growth, Shelter Island experienced the most growth of single-family units, increasing its stock by approximately 43 percent, followed by Riverhead, which increased its stock of single-family homes by 38 percent (2,950 units) between 1990 and 2006-2010.

Overall, single-family development activity between 1990 and 2006-2010 was concentrated in the eastern portions of Suffolk County (see **Figure C-20**).¹ These were also the areas where the most vacant land was available. Overall, the distribution of single-family housing growth is similar to the population growth pattern in Suffolk County, shown in **Figure C-2**.

¹ This figure includes single-family attached units.



Single-Family Housing by Census Tract, 1990 to 2006-2010
Figure C-20

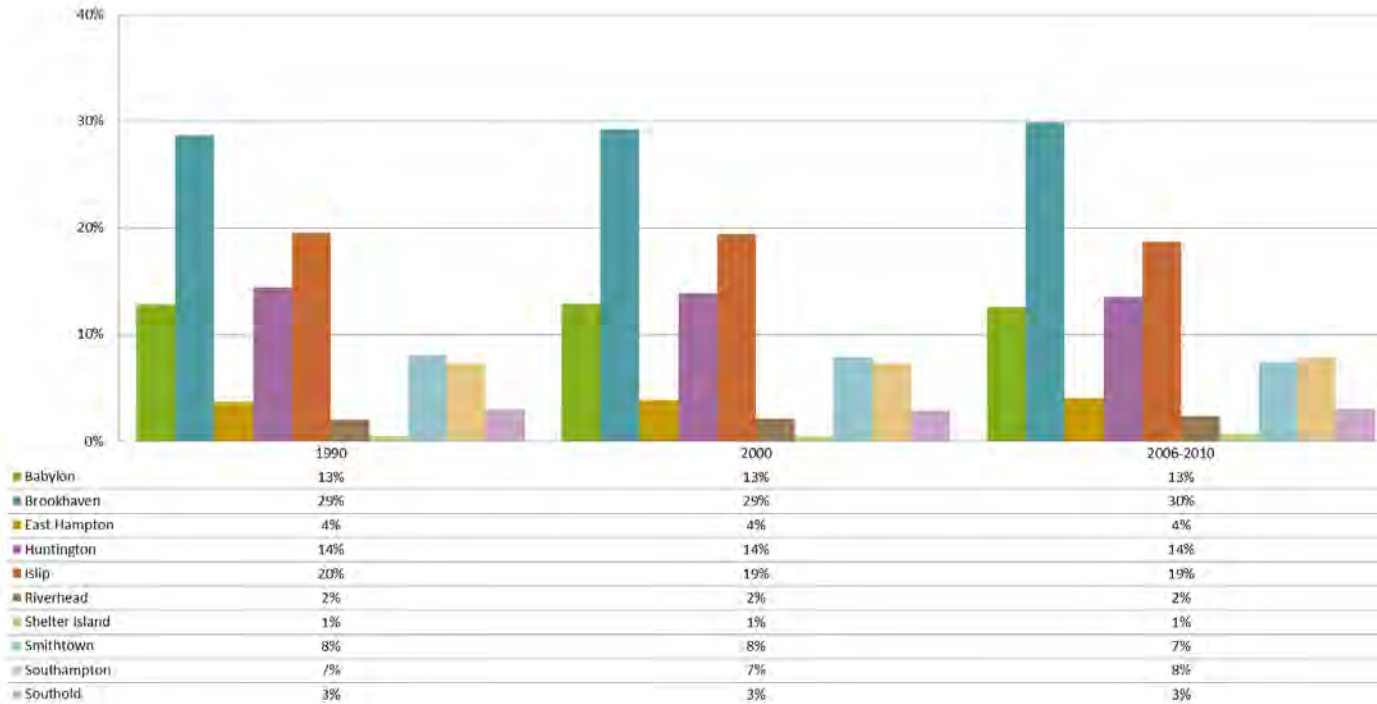


Figure C-19: Single-Family Detached Housing by Town: 1990 to 2006-2010

Sources: U.S. Census and ACS

1.2.3.2. Multi-family housing

For the purpose of this study, multi-family units are defined to include all units that are not single-family detached homes. The majority of multi-family units in Suffolk County tend to be townhouse-style homes or low-rise condominiums. Denser multi-family developments with 10 or more units are rare and do not exceed 5 percent of the total housing stock.

In 1990, there were a total of 91,492 multi-family or other units, not including single-family detached homes, in Suffolk County. By 2006-2010, their number had increased by 19,941 to approximately 111,433 units.

With the exception of Shelter Island, all Suffolk County towns added multi-family housing between 1990 and 2006-2010. However, most towns only added less than 1,000 multi-family units over the course of approximately two decades. The overwhelming majority of multi-family housing units (79 percent or 15,819) were added in only two towns: Brookhaven and Islip. In 2006-2010, multi-family units in these two towns accounted for 57 percent of the total multi-family units in Suffolk County, as shown in **Figure C-21**. Riverhead also added a substantial number of multi-family homes during the period from 1990 to 2006-2010 with 1,539 new multi-family units.

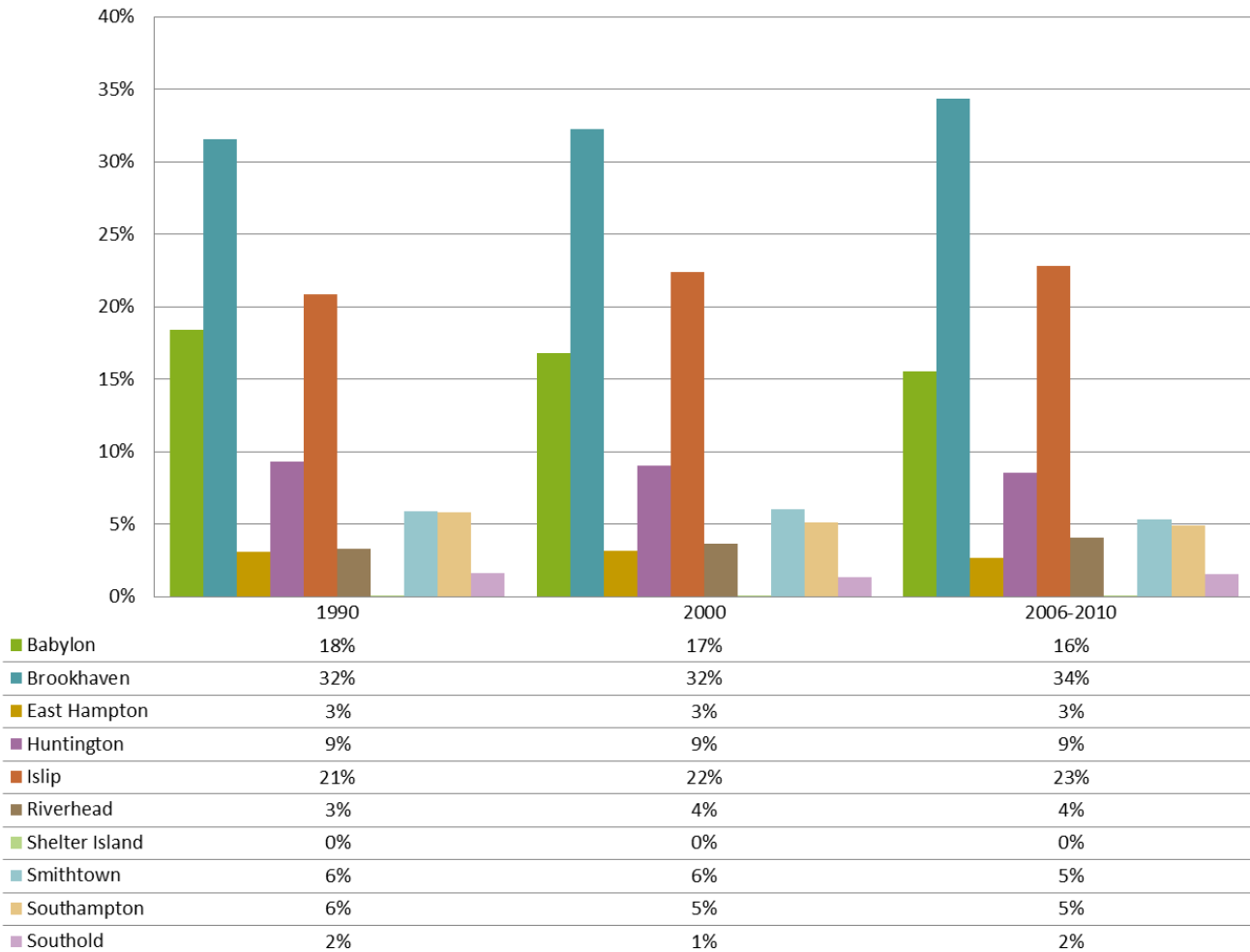
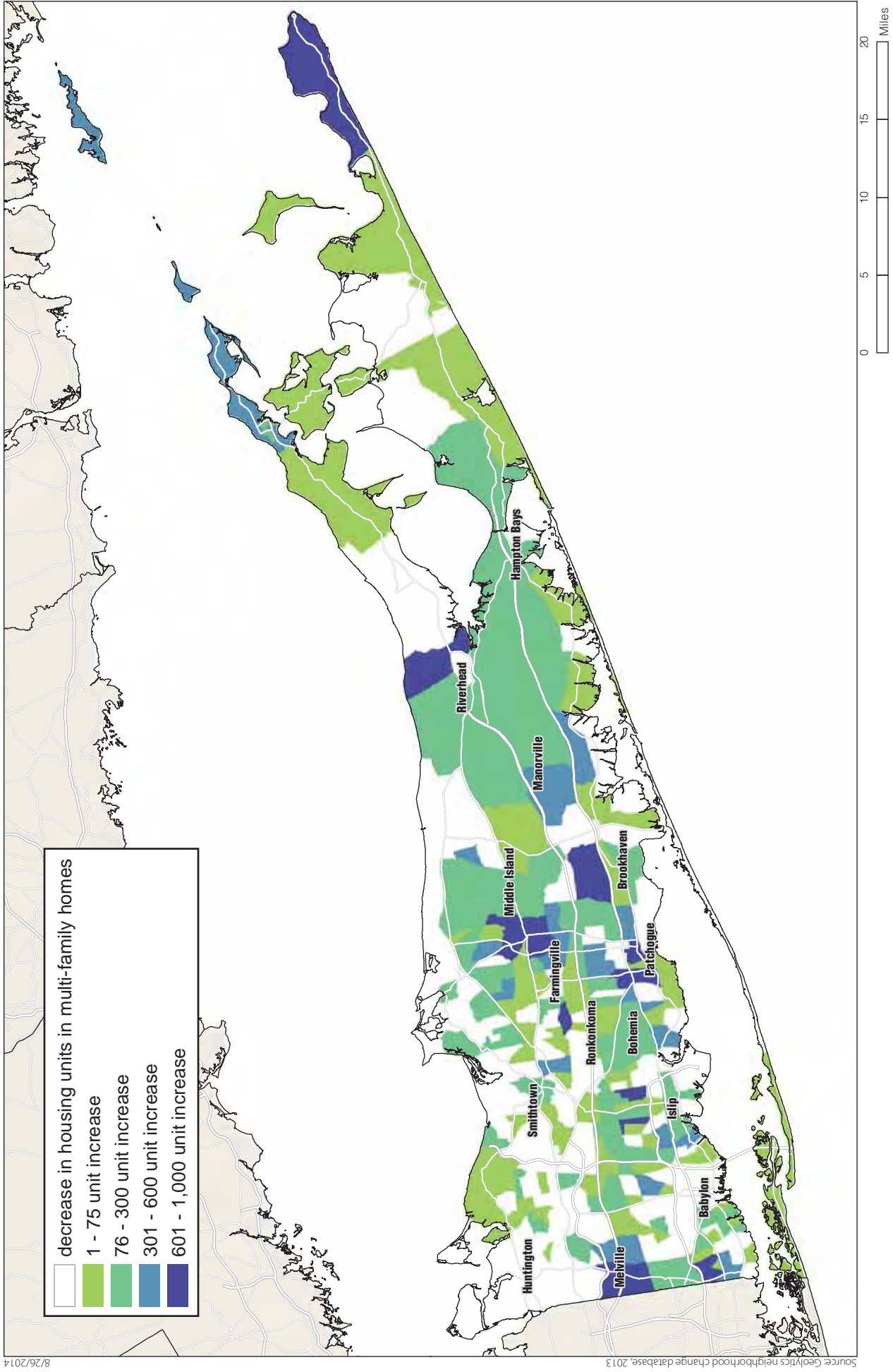


Figure C-21: Multi-Family Housing Units by Town: 1990 to 2006-2010

Source: U.S. Census and ACS

As shown in **Figure C-22**, much of the Towns of Huntington and Smithtown, as well as many areas along the north and south shores, experienced a decrease or only modest increase in multi-family units between 1990 and 2006-2010; however a noticeable increase occurred in Melville. Within the Town of Brookhaven, the areas of Coram, Bellport, and Patchogue gained the highest numbers of multi-family units. To the east of Brookhaven, downtown Riverhead experienced a decrease but areas right around it experienced substantial increases. Also, Montauk and Greenport added substantial numbers of multi-family units.



Multi-Family Housing by Census Tract, 1990 to 2006-2010
Figure C-22

1.2.4. Housing Values

The median housing value for Suffolk County was approximately \$425,000 in 2007-2011 (in 2013 dollars), with median values ranging from around \$400,000 to almost \$900,000 depending on the town (see **Figure C-23**). In general, towns along the north shore and at the eastern end of the County exhibit the highest home values.

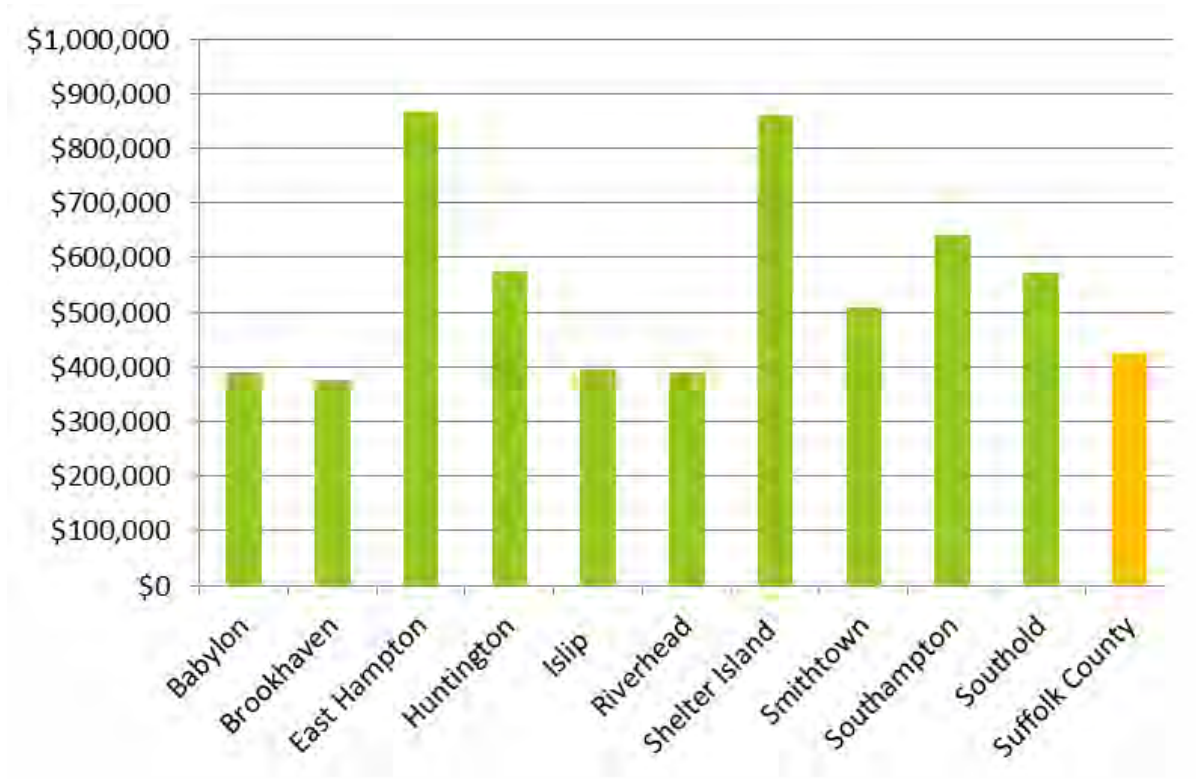


Figure C-23: Median Housing Values by Town: 2007-2011 (2013 dollars)
 Source: ACS

Conversations with Suffolk County real estate brokers confirmed the validity of the 2007-2011 median home values from the U.S. Census Bureau, indicating a countywide average home value of approximately \$430,000. However, real estate professionals noted that home values are currently increasing, fueled by an improving economy and low interest rates.

As shown below in **Table C-1**, more than half of the houses in Suffolk County were valued between \$300,000 and \$500,000 in 2007-2011. Based on current mortgage rate conditions, purchasing a home at these price points would require a monthly mortgage payment of approximately \$1,300 and taxes and insurances costs of an additional \$800 for a \$300,000

home. For a \$500,000 home total costs would be approximately \$3,450.¹ If payments for housing should not exceed 30 percent of household income, households would need to earn at least \$83,000 to afford a \$300,000 home or \$137,400 for a \$500,000 home.

Value trends indicate that home values have started to move above \$500,000 in most Suffolk County towns. In 6 out of the 10 towns, at least half of all homes were valued above \$500,000, making it difficult for medium-income earners to own their homes. As discussed earlier, based on 2007–2011 ACS data, approximately 46 percent of Suffolk County’s owner households are “cost burdened,” i.e., they are paying 30 percent or more of their household income towards housing.

**TABLE C-1
HOME VALUES BY TOWN, SUFFOLK COUNTY: 2007-2011**

	Less than \$70,000	\$70,000 to \$150,000	\$150,000 to \$300,000	\$300,000 to \$500,000	\$500,000 to \$750,000	\$750,000 to \$1,000,000	\$1,000,000 or more
Babylon	2%	2%	15%	67%	12%	2%	1%
Brookhaven	1%	3%	23%	55%	14%	2%	1%
East Hampton	2%	1%	2%	9%	28%	25%	34%
Huntington	1%	1%	4%	36%	32%	15%	10%
Islip	2%	1%	18%	59%	15%	3%	1%
Riverhead	5%	7%	17%	47%	16%	5%	2%
Shelter Island	0%	0%	6%	6%	30%	26%	33%
Smithtown	1%	1%	3%	48%	36%	7%	3%
Southampton	3%	3%	6%	25%	27%	14%	22%
Southold	1%	2%	4%	36%	32%	12%	12%
Suffolk County	2%	2%	15%	51%	20%	6%	5%
Source: ACS.							

1.2.5. Rents

The cost of building in Suffolk County (including construction, maintenance, operation, and taxes) results in high rents, which is of particular significance to younger residents in their twenties and thirties. Individuals in this age bracket are typically in the beginning stages of their careers and may not have the desire to purchase a home, nor the equity necessary to do so. Because of the lack of alternative (rental) product in Suffolk County, younger residents may be forced to leave the County; stay with parents or other family members longer than anticipated; or rent and be cost burdened.

¹ Assumes 20 percent equity contribution and an interest rate of 5 percent for a 30-year fixed-interest loan.

As shown in **Figure C-24**, median contract rents for all rental units are above \$1,300 per month in 8 of the County’s 10 towns. Even in Brookhaven, where for-sale homes tend to be moderately priced (27 percent of 2011 home values were \$300,000 or under), median contract rents have surpassed \$1,400.



Figure C-24: Median Contract Rent by Town: 2007-2011 (2013 dollars)
 Source: ACS

Figure C-25 illustrates that 54 percent of rental properties in the County have a contract rent of \$1,250 or more per month. A household paying 30 percent or less of household income on housing (a non-cost-burdened household) would need to earn approximately \$50,000 or more to afford \$1,250 per month in rent. Given that the median income of renter households in Suffolk County is about \$47,770 per year, based on 2007-2011 ACS data, many are priced out of the market. And considering that two-bedroom apartments in Suffolk County tend to rent for \$2,000 per month or more, according to local real estate brokers, it has become particularly difficult for many family households to find suitable and affordable rental housing.

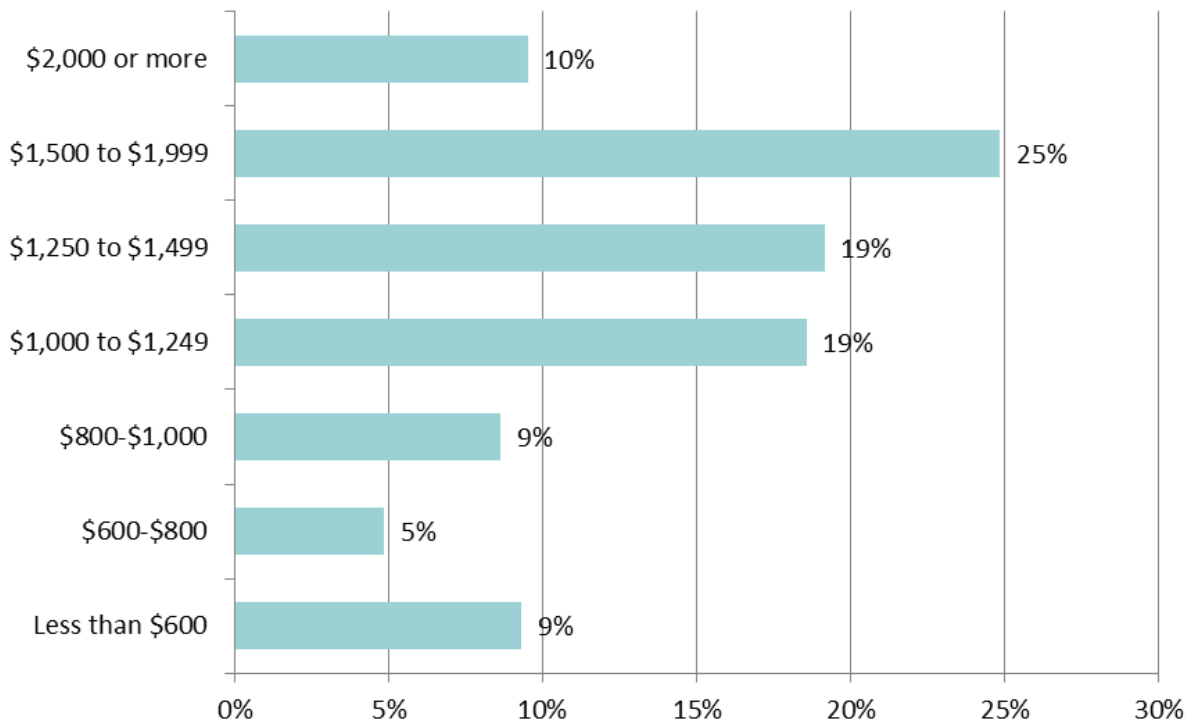


Figure C-25: Contract Rents, Suffolk County: 2007-2011 (2013 dollars)

Source: ACS

1.3. GUIDELINES FOR ACCOMMODATING GROWTH POTENTIAL

This section of the Housing Report, describes Guidelines for Accommodating Growth Potential, which offer a process that helps prioritize areas best suited for residential growth. This will be particularly important in conjunction with potential future economic growth centers. Since most of the trips generated by County residents are to and from work, planning residential growth centers according to workplace locations can help to create an environment that is more productive and creates a higher quality of life.

Overall, the recommendations identify areas that fulfill the suitability criteria for improvements in a larger, exemplary context, without identifying specific individual areas or municipalities as potential receiving areas for population or other housing-related activities. Recommendations are policy-focused and intended to align with policy principles outlined in the “Connect Long Island” policy guidelines.

Suffolk County's population is projected to grow in the mid- and long-term future. At the same time, developable land is becoming increasingly scarce. As indicated earlier, it is estimated that only 9 percent of Long Island's total undeveloped land is available for new development. At the same time, based on interviews with local real estate brokers as well as sources such as RPA's 2013 publication "Long Island's Rental Housing Crisis," demand has shifted toward denser, more downtown-oriented housing options, in an environment that can provide not only housing, but amenities such as shopping areas and proximity to employment centers. This means that the housing development model in Suffolk County will increasingly need to shift away from single-family development on greenfield sites, and toward denser, multi-family housing or mixed-use developments.

Although this shift away from single-family detached homes will be made in part out of necessity, brought on by shrinking developable land, it will in fact be very much in line with current and projected market demands. As highlighted above, household sizes in Suffolk County are decreasing in some areas and the proportion of cost-burdened households has increased, based on a combination of ACS data, a survey by the Long Island Index, and information provided in RPA's 2013 publication "Long Island's Rental Housing Crisis."

To meet housing demand, sustain economic growth and prosperity, and maintain quality of life into the future, it will be critical for Suffolk County to develop new housing strategies that reuse underutilized sites and develop denser housing that consumes fewer resources- and is accessible to a broader range of the population. Therefore, the guidelines presented here are focused on more dense housing forms such as multi-family apartment buildings and townhomes, in locations that take advantage of existing public transportation infrastructure and that help to preserve natural resources.

Outlined below are criteria that may be used to prioritize locations for new housing. The process is based on avoidance and attraction criteria and is intended to serve as guidance to help municipalities and other interested parties within Suffolk County understand how to best advance smart growth planning principles when planning for housing growth.

Similar to the identification of growth centers under Section 2.4, the process does not identify specific locations but provides a range of generic locations that fulfill the priority criteria. The process will focus only on housing that fits within the smart growth framework, e.g., close to public transportation, reuse of underutilized sites, and preference for mixed-use development.

The screening guidelines are focused on a number of key variables, some of which overlap with those described under Section 2.3, Guidelines to Potential Growth Center Locations. Areas that

satisfy multiple criteria would be considered to be better aligned with County development goals, and as more desirable or appropriate for consideration for housing development.

1.3.1. NATURAL RESOURCES

Conservation is one of the major goals in Suffolk County. With increasing development, undeveloped space has become scarce, water resources are under pressure, and areas vulnerable to flooding are being considered for development. Future development must avoid sensitive natural resources but also use them responsibly—as assets that can enhance quality of life.

- Priority is given to development sites located outside the 100-year floodplain.
- Areas with existing sewers are preferred.
- The County is divided into seven different hydrogeological groundwater zones, depending on their importance for the local water supply. Areas outside Zone III (see Appendix B, Figure B-8) are prioritized for new housing development, as these development sites pose the least threat to the County’s water supply.
- New housing development is to be avoided in areas that are immediately adjacent to sensitive natural resources such as wetlands.
- Building new housing within walking distance of existing parks and other publicly accessible open spaces can enhance the quality of life for Suffolk County residents, and decrease reliance on automobiles to access local recreational opportunities. This would be a particular advantage to the County’s growing elderly population, as well as its substantial school-aged (18 and under) population.

1.3.2. PUBLIC TRANSPORTATION

As described in “Connect Long Island,” Long Island is fortunate to have both an extensive rail system in place and proximate town centers that are poised to receive infill development. Given increasing levels of traffic congestion in Suffolk County and growing preferences (particularly among younger demographics) for commuting via public transportation, new housing should be reasonably scaled and prioritized in areas located close to train stations, major bus routes, or Bus Rapid Transit (BRT) stops.

1.3.3. ECONOMIC INFRASTRUCTURE

Jobs play a major role when considering a new home. Residential development closer to jobs clusters can help to minimize traffic and congestion and can also save valuable commute time.

- Priority should be given to new housing located in areas that currently contain high concentrations of both employment and population.
- Locate new housing close to employment growth centers/innovation hubs, but within existing population centers that have residential infrastructure in place (schools, shops, and public transportation, if possible). This helps maximize the potential for short commutes. A shorter distance between the place of residence and the place of work also increases the potential for new public transportation, since investments in new infrastructure are likely to be smaller.
- Place workforce and student-appropriate rental housing in close proximity to local institutions of higher education.

1.3.4. AMENITIES AND SOCIAL INFRASTRUCTURE

Building closer to existing social infrastructure (i.e. community gathering places such as theaters, libraries, cultural attractions, and entertainment uses) helps to both save resources and provide amenities important to many of the new knowledge workers, employed by high-tech sector firms, and which were identified by Suffolk County and other economic development initiatives as one of the sectors to be targeted.

In order to retain the younger worker populations, Suffolk County needs to meet the growing demand for housing in lively downtown settings. Priority should be given to housing development in downtown, mixed-use settings.

Outside downtown contexts, priority should be given to housing situated a short drive or short trip via public transportation away from shopping areas that contain food stores (e.g., grocery) and neighborhood services (dry cleaning, bank). This form of convenience appeals especially to younger and older adults.

1.4. FINDINGS

In many areas of the County, limited housing options and a striking disparity between demand and supply, as supported by data such as from the U.S. Census Bureau as well as RPA's 2013 publication "Long Island's Rental Housing Crisis," are preventing communities from attracting or retaining a more diverse population. Moreover, there is evidence to support that young adults in the 19-34 age bracket are leaving Suffolk County and the County's population of seniors is growing. Given these trends, there is a need for more multi-family, attached rental housing in Suffolk County to help retain younger people, and provide alternative housing options for seniors. Increasing the variety of housing products and the amount of affordable housing

available is critical to Suffolk County's continued economic success and attractiveness as a place to live and work with a high quality of life.

1.4.1. DEMAND CONDITIONS

Shifts in the County's population profile in terms of average age, income, and household composition have led to changes in demand for various types of housing products.

The County's demographic profile has been changing notably over the past two decades. The share of young adults (ages 19 to 34) has decreased over the past two decades, particularly in the central and western Suffolk County towns, while the older population (55+) has increased almost uniformly across the County. This may be attributed to the fact that much of the County's explosive development from 1955 to 1975 occurred in the western and central towns, resulting in the baby bust generation that we see in these parts today. Like much of the United States, Suffolk County is becoming more diverse, with the Non-Hispanic White population shrinking in both absolute and relative terms. In contrast, minority populations, particularly the Hispanic population, are growing with most of this growth occurring in the more densely populated areas in towns on the south shore and in central Suffolk County.

Educational attainment levels in Suffolk County have been increasing, reflecting the changing nature of the County's economy, where professional and scientific activities now play a more prominent role. Between 1990 and 2010, the percentage of Suffolk County residents with a bachelor's degree or higher increased from 23 to 32 percent; this trend toward higher education was generally consistent throughout the County.

Household size and composition trends are pointing toward a greater demand for smaller housing units. While the average household size in Suffolk County (2.93 persons per household) remains higher than the national average (2.58 persons per household), average household size in the County decreased at over twice the national rate between 1990 and 2010. It is also notable that as of 2010, only 37 percent of all households in Suffolk County were family households with children under the age of 18.

With 43 percent of the County's households earning \$100,000 or more annually, Suffolk County is one of the most affluent counties in the nation. However, because of the County's generally high housing costs, approximately 48 percent of all Suffolk County households (owner and renter-occupied) are considered cost-burdened, paying 30 percent or more of their household income towards housing.

1.4.2. SUPPLY CONDITIONS

While the demographic changes that have occurred over the past two decades have created a new housing demand profile, the supply of units suitable to capture this demand is less common in Suffolk County.

As of 2010, there were approximately 570,000 housing units in Suffolk County, with the largest share (175,000 units) located in Brookhaven. In 2010, Suffolk County's housing stock was heavily dominated by owner-occupied units (79 percent of units), particularly as compared to other suburban communities around New York City (69 percent in Rockland County, New York and 75 percent in Monmouth County, New Jersey, for example). Combined with the low vacancy rate for rental housing on Long Island (6 percent based on 2007-2011 ACS data), this condition makes it challenging for many renters to find housing.

Overall, housing development between 1990 and 2010 was concentrated in the eastern portions of Suffolk County. Growth in the development of multi-family housing in recent years has been far outpaced by growth in the development of single-family homes. Between 1990 and 2010, Suffolk County gained 73,450 single-family homes, compared to only 15,100 multi-family units, an overwhelming majority of which (87 percent) were added in two towns: Brookhaven and Islip. However, between 2000 and 2008-2012, 35 percent of the new housing units were not single-family homes, so it seems that the change away from single-family housing units toward building new multi-family housing units is starting to occur.

The median housing value for Suffolk County was approximately \$425,000 in 2011 (in 2013 dollars), with towns along the north shore and at the eastern end of the County generally exhibiting the highest home values. Value trends indicate that home values have started to move above \$500,000 in many Suffolk County towns, making it increasingly difficult for medium-income earners to own their homes. Meanwhile, median contract rents are above \$1,300 per month in 8 of the County's 10 towns, pricing many renters out of the housing market. Two-bedroom apartments in Suffolk County tend to rent for at least \$2,000 per month, making it particularly difficult for many family households to find suitable and affordable rental housing.

In keeping with historical trends, the County's population continues to grow. Based on data supplied by the Suffolk County Division of Planning and Environment, it is estimated that by 2045 Suffolk County's population will grow from its current 1.5 million to about 1.7 million residents. Meanwhile, the County has almost reached full build-out conditions (i.e., under existing zoning), so that the opportunity to develop new conventional single-family housing will

be limited going forward. While the current demand-supply mismatch already is exhibiting a substantial effect on the composition of the County's residential population (e.g., under representation of younger people), if existing trends continue into the future there is the marked potential for the current concerns related to housing to be further magnified.

1.4.2.1. *Objectives for Sustainable Housing Development*

Overall, supply conditions in Suffolk County have not adequately adapted to the County's changing housing market environment. A more diverse population is demanding a greater variety of housing choices. To address the needs of all population segments, Suffolk County needs a more diverse mix of housing options, including a wider range of unit sizes and price points that are better reflective of the socioeconomic profile of the County, including a larger share of rental units.

Available housing options also need to address the changing lifestyle needs of the population. To retain and attract young adults in their 20s and 30s, as well as the 55+ population, housing needs to be located in a mixed-use environment that offers entertainment and amenity options but also encourages the use of public transportation. It is recognized that Suffolk County can encourage a more balanced composition of housing choices into the future by applying smart growth planning principles that promote the development of housing options that are in short supply within the current market. From a planning perspective, it will be important for the County to develop and support policies and development strategies that will have the following goals:

1. Promote and support areas that best accommodate multi-family housing:

Single-family detached housing will be the preferred choice for many Suffolk County residents in the foreseeable future. Additionally, market forces will continue to drive the development and turnover of the County's existing single-family home inventory. While demand for multi-family housing is recognized by communities and developers, overall inventory and development activity of these types of units is still low.

While areas that can accommodate denser housing exist, particularly in downtown areas and in the growth center sites identified by the County, the constraints result from existing zoning, permitting regulations, and the absence of necessary infrastructure, which are often unable to accommodate more diverse and denser housing options. Providing guidelines to towns and other municipalities relative to zoning and land use planning will play an essential role to support and encourage appropriately located denser development. Technical assistance as well educational initiatives that inform municipal governments and

local residents on the favorable cost/benefit aspects of denser housing can foster the implementation of new housing.

Supporting infrastructure development and infrastructure planning projects is another critical aspect when planning for the siting and development of denser housing. In support of this goal, under County law, Section 740-38, B., sewer connection fees are waived when a municipality builds sewer infrastructure with a collection system that sewers an area that includes all of the following: "urban renewal areas;" Empire Zone; and TOD in a downtown with a train station (other requirements that must be satisfied to secure waivers are detailed in the law). The infrastructure demand profile of multi-family developments differs significantly from single-family housing developments. Denser development patterns require infrastructure that can handle increased volumes on smaller footprints. This includes not only (public) transportation and sewer/wastewater infrastructure, but also communication and social infrastructure, which are critical for modern communities. Providing planning support and funding will accelerate the process of developing the wider range of housing types that are being demanded by changes in the market, and ensuring that they are developed in appropriate and desirable locations.

2. Coordinate local efforts on a regional level:

There are a few initiatives underway in Suffolk County to promote new housing. For example, the municipal legislation related to transfer of development rights (TDR) was implemented specifically to encourage affordable housing. However, most legislation requires that the sending and receiving areas of development rights are within the same municipality. A more coordinated regional approach would allow for TDRs to occur across municipal boundaries, to areas within the region with the greatest need and with the necessary infrastructure that is supportive of denser development, while at the same time protecting the County's most important natural assets.

Other initiatives such as Accelerate Long Island and the establishment of State Agency Resource Teams (SART) are successfully applying a regional approach. Accelerate Long Island, for instance, matches scientists throughout Long Island with businesses to encourage the commercialization of research and to encourage entrepreneurship. SART is an effort to share best practices across various practice areas.

Coordinating efforts in regards to multi-family housing can have a similar effect. It would allow stakeholders such as towns and villages to tap into a network of resources and to more efficiently coordinate and pool funding opportunities. It would also allow local

jurisdictions to share best practices and planning concepts and discuss optimal approaches for their application.

3. Plan for Community Resiliency and Climate Adaptation:

In the wake of Superstorm Sandy in October 2012, it is more important than ever to plan for community adaption to climate change and resiliency. Ensuring that communities are resilient in the face of natural disasters has a direct bearing on the economic prosperity of a region. The more resilient communities are, the more likely the region would fare well in a natural or other disaster and be able to move forward without undue housing damage in the aftermath. As was seen during the aftermath of Sandy, many homes were damaged or destroyed, and the costs necessary to repair or replace housing can be prohibitive. It is for these reasons that policies, programs, and initiatives related to housing need to also incorporate consideration of how to better achieve resiliency and adaptation to the effects of climate change. The New York Rising Community Reconstruction Program has identified community resilience techniques and factors to consider when planning for community redevelopment. In addition, FEMA has issued guidance for integrating local natural hazard mitigation into a community's comprehensive plan. It is imperative that housing decisions be based on best available hazard data, including the nature of local hazards, the vulnerability of people and property, and the potential destruction that can be caused by these hazards. Particular care should be given when planning for Suffolk's eight NY Rising Communities: 1) Fire Island, 2) Mastic Beach and Smith Point of Shirley, 3) Oakdale-West Sayville, 4) Village of Amityville and Copiague, 5) Village of Babylon and West Babylon, 6) Village of Lindenhurst, 7) West Gilgo to Captree; and 8) West Islip. Communication and collaboration between planners and emergency managers is crucial for ensuring that appropriate hazard assessment information is considered during future community development planning, particularly in relation to housing. To integrate resiliency and climate change adaption planning into housing decisions, policies may be developed to: acquire housing stock in floodplains or other hazardous areas; address how housing demand is influenced by the desire to site near natural amenities, which can be hazardous; retrofit or replace public and publicly-subsidized affordable housing to reduce damage to inhabitants during a natural disaster; and consider that manufactured homes are particularly vulnerable to high winds. These and other resiliency and climate change adaptation techniques and recommendations should be considered when planning for housing. *



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Suffolk County Executive
Hon. Steven Bellone