Sustainable Strategies for Long Island 2035
December 2010

Long Island
Regional Planning Council
Open Letter to the People of Long Island

The Long Island Regional Planning Council is proud to present the first phase of work from the Long Island 2035 Regional Comprehensive Sustainability Plan, which recognizes the need for Long Island to come together as a region and address the pressing issues challenging the region. Long Island faces an uncertain future if we continue to approach development and growth as we have in the past. Times have changed, new and different challenges and opportunities have arisen, and so our thinking about the way we develop and plan for our future must change as well, or we will find ourselves fiscally, environmentally and socially endangered. This work identifies the most significant challenges facing the region today and in the near future, forecasts the possible dangers we face if we fail to shift the paradigm and ultimately presents strategies to create a sustainable region through 2035 and hopefully beyond.

From the beginning of this process, we involved hundreds of stakeholders to help identify the issues, challenges, assets, opportunities and possible solutions to make Long Island the thriving, exciting, competitive region it once was. Throughout the process, we repeatedly heard the cry of the high taxes, lack of affordable workforce housing, unfriendly business climate and too many layers of government. Many of the strategies presented are aimed at reducing or eliminating these obstacles to economic success and ensuring the quality of life we all cherish for the region.

The region also faces tremendous challenges in the education of our children and the inequities in the K-12 public school system. Our educational system is expensive and some of our public schools simply do not provide the opportunity for all students to realize their potential. We take a collaborative approach to this issue and with the help of our Education Working Group have developed a group of strategies aimed at improving education achievement and assuring equal education opportunities for all, while containing school costs to ease the property tax burden.

We all know Long Island has tremendous assets. We need to act to protect those assets without exploiting them. We must use these assets to attract new economic growth to the region, to keep our youth on the Island and to create sufficient housing options. We must find ways to properly and equitably educate all our children. Finally we must act to enhance environmental, transportation and energy infrastructure to protect our natural resources and support the current and future population of the Island. Long Island has a tremendous opportunity to redefine what it means to live and thrive in a sustainable 21st century suburban community.

This work is just the beginning of a process. The LIRPC has developed the strategies, and will engage governmental and private industry leaders, stakeholders, and the public to first secure recognition that the region is challenged and then to participate in bringing about the solutions. We thank Nassau and Suffolk Counties for their continued support, our Leadership Advisory Cabinet, our various stakeholder groups, our LI 2035 Comprehensive Sustainability Plan consulting team and of course all interested parties who have helped us get to this milestone. We ask that you all continue with us on this all critical mission. The future of Long Island depends upon our success.

Sincerely,

Michael E. White
Execute Director
Long Island Regional Planning Council

John D. Cameron, Jr.
Chair
Long Island Regional Planning Council
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How to use this document
This document is structured in five sections. The opening section includes an Executive Summary and a comprehensive list of all the strategies in this report. This is followed by the four main sections of the report, dedicated to focus areas of the plan:

• Tax & Governance
• Economy
• Environment & Infrastructure
• Equity

Each section begins with an introduction laying out the context and challenges Long Island faces and frames our vision for a sustainable response to these issues. Following the introduction are sections on each key strategy, divided into the following areas:

1. Context
2. Proposed Actions to implement each strategy
3. Implementation Table – agencies, costs, procedures and challenges related to the implementation of the strategy
4. Case Study examples that illustrate how the strategy or action works
5. Linkages to Other Initiatives
6. Roles for LIRPC
Executive Summary

Suburban communities across the country face an uncertain future. The development approach of the 20th century will not sustain our communities in the 21st century – fiscally, environmentally, or socially. Long Island’s modern era evolved out of the shared aspirations of its residents for a new suburban lifestyle. People were drawn to Long Island because it offered them the opportunity to improve the quality of their lives. Long Island’s idyllic beauty – beaches, open space, clean air – offered refuge from the clamour of New York City, though close enough to capture the city’s economic, educational and cultural opportunities. Long Islanders appreciated finding affordable housing, the ability to make a home for their family, and quality of education for their children. People shared a common vision for their suburban community, and grew a system of local government that was led by their peers and afforded them a voice in its governance. The system also left a legacy of racial segregation and economically disadvantaged communities.

Today Long Island faces an affordability crisis that threatens the cherished quality of life in the region. Due to some of the most expensive government and school district costs in the nation, Long Island’s ideals are now threatened by a taxpayer burden that is escalating at a pace too costly to be sustainable. Coupled with an uncertain economic outlook, communities subject to neglect, development patterns that create congestion, a transportation system that has not evolved in decades, and limited choices for housing diversity, the quality of life that made the Long Island dream a reality for so many is now deteriorating.

Despite these challenges, Long Island has a tremendous opportunity to redefine what it means to live in a sustainable 21st century suburban community, recognizing it is possible for Long Island to be affordable and prosperous, bringing a return to economic growth and strength. Our ability to act today – and leave behind the status quo - will have a tremendous impact on the future of the region.
Long Island Sustainability Plan

The Process

Introduction

A regional comprehensive sustainability plan must be comprehensive, integrated, and focused on near-and long-term solutions. It must also enjoy widespread support among leaders and community members who will collectively implement the vision set forth in the plan. The process and approach underpinning the Long Island 2035 Regional Comprehensive Sustainability Plan have ensured input and discussion about each element of our Sustainability Plan. In addition to ongoing dialogue with government officials and stakeholder participants, a combination of data collection, study coordination, independent research and focus group workshops helped ground this Sustainability Plan in the realities of present day Long Island.

Long Island 2035 Regional Visioning Initiative and Workshop

The Long Island Regional Planning Council (LIRPC) along with Nassau and Suffolk Counties launched this bold initiative in 2009, to assess the position of Long Island relative to environmental, social, and economic sustainability. Long Island 2035, the long-term sustainability plan for Long Island, identifies the key opportunity areas and issues of concern among Long Islanders from across the region. Its intent is to ensure Long Island continues to maintain a position of strength and to maintain the quality of life for which Long Island is so well known.

The foundation for the Long Island sustainability planning process was the Long Island 2035 Regional Visioning Initiative funded by the New York Metropolitan Transportation Council (NYMTC) the designated Metropolitan Planning Organization for the region. The purpose of the Regional Visioning Initiative was to help achieve a regional public consensus for where the next generation of Long Islanders could live and work, the transportation systems needed to support these settlements and the institutional actions required to ensure a prosperous, equitable and environmentally sustainable Long Island. The Visioning Initiative was guided by an Executive Committee working with both a Municipal and Stakeholder Committee. The Executive Committee included representatives of the LIRPC, Nassau and Suffolk Counties, NYMTC, the Federal Highway Administration, the New York State Department of Transportation, the Metropolitan Transit Authority and the Long Island Rail Road. The Municipal Committee consisted of town, village and city officials. The Stakeholder Committee included representatives of business, labor, environmental, not-for-profits, community and the civic constituencies.
The components of the Regional Visioning Initiative included:

- An inventory and analysis of local plans and studies
- Lessons learned from other regions
- Analysis and mapping of existing conditions, constraints and opportunities
- Projections of opportunities and trends
- Organization of committees of municipal officials and private stakeholders
- Visioning workshop bringing together participants from across the Island
- Alternative 2035 scenarios to frame development and policy choices

A Visioning Workshop was convened in March 2009 and was attended by elected officials, civic, business and environmental leaders from across the Island. A Findings Report summarizing the results of the Visioning Workshop to find common ground on where to place Long Island’s projected growth in population and employment was completed. A Final Report on the LI 2035 Regional Visioning Initiative which includes the results of the Visioning Workshop and both baseline and alternative scenarios for 2035 was presented in December 2009. The Report consolidates the findings from the Visioning Workshop into alternative growth scenarios and provides an evaluation of their respective impacts on land use, infrastructure, natural resources, equity and other issues facing the Island.

**Long Island 2035 Regional Comprehensive Sustainability Plan**

Utilizing the results of the Regional Visioning Initiative, the Long Island Regional Planning Council’s Long Island 2035 Regional Comprehensive Sustainability Plan process began with a series of charrettes hosted with key government officials and private sector stakeholders representing the diversity of interest groups on Long Island, known as the Leadership Advisory Cabinet. The Leadership Advisory Cabinet (LAC) was an important body for testing and vetting strengths, weaknesses, issues and opportunities facing the region. Through collaborative charrettes the LAC identified a vision, goals and objectives for the Long Island 2035 Regional Comprehensive Sustainability Plan. The focus areas of the plan that address both issues and opportunities were initially grouped into four general areas: Economy, Infrastructure, Human Systems, and the Built and Natural Environments.
The basic elements of the Long Island 2035 Regional Comprehensive Sustainability Plan included:

**Visioning Charrette** – A project kickoff outlining the Plan structure, informing about the most pressing issues and drivers on Long Island, points of intervention and generating some initial goals for the Plan to aspire.

**Data Collection** – A broad set of documents were reviewed, rated and summarized by the local experts on the LI 2035 Sustainability Plan consulting team. All the information collected was catalogued by a range of filters and has become a compelling live link library of all relevant information on Long Island.

**Goal Setting Charrette** – Developed goals, preliminary strategies and actionable initiatives that may be implemented on Long Island to foster long term economic development in a fair and equitable environment, while promoting environmental and resource sustainability.

**Coordination with Active Studies** – It was important that the work of the Long Island 2035 Sustainability Plan was informed by and builds upon the good work being done by numerous organizations and agencies throughout Long Island pertaining to sustainable planning. To this end, a host of organizations on Long Island were engaged to learn more about their work and to share our work with them. A work memorandum summarizing the minutes of these meetings was prepared and exhibits and data collected were to inform the strategy development process.

**Baseline Analysis & Future Forecasting** – The Sustainability Plan consulting team provided baseline conditions, future projections and an analysis of the trends stepping up to the year 2035 for the focus areas of tax and governance, economy, infrastructure, the environment, land development and demographic mix.

**Long Island Information Clearinghouse** – The efforts of the Long Island 2035 Sustainability Plan consulting team also focused on an in-depth review and documentation of existing plans, studies and reports that are all contained in a comprehensive Long Island 2035 Information Clearinghouse. The Clearinghouse, available to interested parties working on Long Island planning issues, includes links to relevant documents, short synopses of major reports, and a searchable database of all resources. The database will help streamline background research efforts for local and regional jurisdictions working on planning initiatives in and around Long Island.
Long Island 2035: Securing a Sustainable Future

Setting the Stage

After the initial set of visioning and goal-setting charrettes, data collection, coordination with active studies, baseline analysis and future forecasting, a series of studies examined the health and vitality of Long Island communities in inclusive thematic areas. The issues revealed from these studies are discussed herein and supported by five Technical Reports that summarize both the methodology and the findings from this analysis. The five Technical Reports are:

- Technical Report – Governance
- Technical Report – Economy
- Technical Report – Infrastructure & Transportation
- Technical Report – Land Use
- Technical Report – Equity
Developing a Response

The Technical Reports revealed that Long Island stands at a crossroads and without ongoing, comprehensive and concerted action, the vitality of Long Island remains at risk. The vision, goals and objectives, along with the findings from the Technical Reports, represent a call to action and the need for development of strategies to address our pressing needs. The Leadership Advisory Cabinet vetted a series of proposed strategies to serve as a work-plan to orient Long Island to a sustainable 21st Century. A draft Sustainable Strategies Report was initially developed and reviewed by the LAC and Stakeholder representatives in early 2010. Guidance from this review resulted in refinement of the Sustainable Strategies and reorganization into the four thematic areas; Tax & Governance, Economy, Environment & Infrastructure and Equity in preparation for broader stakeholder and community workshops. The Draft Sustainable Strategies Report was then shared at four workshops:

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<th>Theme</th>
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<td>Tax &amp; Governance</td>
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<tr>
<td>Economy</td>
<td>July 19, 2010</td>
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<td>Environment &amp; Infrastructure</td>
<td>July 29, 2010</td>
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<tr>
<td>Equity</td>
<td>August 4, 2010</td>
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Each workshop was publicized by the LIRPC and well-attended by individuals, involved stakeholders, local government officials, business people, and representatives of various interest groups and organizations. In each Thematic Area, the Sustainable Strategies were presented, and then an open discussion took place. All comments and questions were recorded and considered for incorporation into the final Sustainable Strategies Report. The Sustainable Strategies themselves and the workshops outlined what steps are necessary to maximize the potential of Long Island’s future and the risks inherent if we do not act.
A Lasting Resource

At the conclusion of the first phase of the development of the Long Island 2035 Regional Comprehensive Sustainability Plan, a substantial body of work exists to inform the development of policies and plans that strengthen the future of the region. This body of work represents the contributions from a vast cross section of Long Island constituencies and is available for the work that remains to be done. The body of work includes all of the following resources:

1. Long Island 2035 Regional Visioning Workshop Findings Report
2. Long Island Regional Visioning Initiative Final Report
3. LI 2035 Sustainable Strategies Report
5. Technical Report – Economy
6. Technical Report – Infrastructure & Transportation
8. Technical Report – Equity
9. Long Island 2035 Rationale for LIRPC Involvement: Crisis and Opportunity in Long Island K through 12 Public Education – Understanding the Cost/Performance Equation and Charting the Future Costs
10. LI 2035 Sustainability Plan – Plan of Action for the K-12 Public Education System – Education Working Group
11. Stakeholder and Community Outreach Workshop (Tax & Governance, Economy, Environment & Infrastructure and Equity)
12. Long Island Carbon Footprint Analysis
13. Information Clearinghouse

This first phase of the Long Island 2035 Regional Comprehensive Sustainability Plan is not the end but the beginning of a conversation about establishing a sustainable future for the region. A future that makes Long Island healthier, stronger and with a higher quality of life that can be enjoyed by people of all generations, income levels, and backgrounds. Long Island will indeed maintain its position as one of the premier communities in the Country for living, working and playing in the 21st century.
Next Steps

The work product of the first phase of the Long Island 2035 Sustainability Plan will be presented for broad public review and comment. In the short term, in addition to advancing the Education Working Group Plan of Action for the K-12 Public Education System, the Long Island Regional Planning Council has developed a list of “first priorities” from the Sustainable Strategies. The next phase of work will include development of near-term action elements respecting each of these priority Strategies. A key framework for advancing the Strategies into action items will be the establishment of “Working Groups” in each one of the four Thematic Areas, modeled after the approach utilized in the development of the Plan of Action for the K-12 Public Education System, presented the Sustainable Strategies as in TG-1.
The Plan

To restore the promise of an affordable, high quality of life for all on Long Island and to position Long Island for the requirements of 21st century communities, the Long Island Sustainability Plan addresses the following:

**Tax and governance reform:** Reforming the ways in which schools and municipalities across the region conceive, plan, deliver and finance services to the communities of Long Island; finding ways to do more with less to reduce the overall costs of education, government and service delivery while improving quality and enhancing living and working opportunities.

**Economic strength:** Increasing the economic activity and competitiveness of Long Island by improving the overall business climate, while expanding regional collaboration on economic growth, job creation, and workforce development.

**Quality of life:** Protecting the things that make Long Island such a treasured place to live and exploring opportunities for future growth and development that enhance, rather than detract from, the island’s quality of life. Long Island’s quality, if not identity, is founded on open space, parks, beaches, farmland and clean drinking water, all of which require protection. Commitment to enhance these qualities includes opportunities to live near work and increase transit access, but also Long Island’s obligation to reduce its environmental footprint and protect against eventual changes associated with climate change.

**Equitable communities:** Expanding access to housing, jobs and high quality education for all, regardless of income, ethnicity or race, through increased inter-jurisdictional collaboration, diversity of housing choice, access to public transit, and linkages to job creation opportunities.

By developing strategic initiatives that address these areas of concern, the Sustainability Plan provides a call to action that LIRPC and partners can proactively advance. Not only do these initiatives provide a blueprint for progress and change, they also serve as a business plan for regional activities to steer the communities of Long Island to a brighter, more prosperous, stronger and sustainable future.
List of Strategies

Everything is interconnected; economic, infrastructure, environmental and social systems affect and influence each other. The strategies of the Long Island 2035 plan reflect these interconnections and respond in an integrated and reinforcing manner. This allows for good decisions to be made and ensures that Long Island moves toward a more economically, environmentally and socially sustainable future. To secure a sustainable future, the LIRPC endorses the following strategies.

**TAX & GOVERNANCE**

Tax and governance strategies for Long Island focus on reducing costs, improving efficiency and streamlining governance and service delivery.

TG-1  Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden
TG-2  Enhance shared services for local governments and school districts
TG-3  Streamline government permitting and approval processes for significant projects
TG-4  Expand healthcare reform coverage and foster cost containment to include Medicaid and Medicare costs
TG-5  Improve voter turnout
**ECONOMY**

To strengthen the economic climate of the region, strategies are focused on high impact initiatives that produce gains in the near to mid-term, and achieve a Long Island with higher paying jobs, a more affordable, business-friendly environment, an industry mix focused on bringing net new dollars into the economy, and the ability to better attract and retain young workers:

E-1  Build consensus for a regional economic strategy and implementing entity  
E-2  Level the economic playing field for business retention and attraction incentives  
E-3  Market Long Island’s assets nationally to attract new businesses and workforce  
E-4  Create a new industry and competitive job base for innovation in home energy efficiency, distributed energy generation and renewable energy technologies  
E-5  Enhance supportive resources for high-tech start-ups  
E-6  Establish mechanisms to train workers for 21st century jobs  
E-7  Stimulate development and preservation of mixed-income workforce housing options  
E-8  Develop a “Buy Long Island First” strategy for promoting Long Island products, goods and services and establish a framework for the networking of local producers and consumers  
E-9  Build the healthcare, life sciences, green energy, brownfields remediation and homeland security industries as growing employment sources
ENVIRONMENT & INFRASTRUCTURE
Responding to existing needs while also anticipating future requirements, infrastructure modernization, improvement and, in some cases, expansion is essential. The following environmental and infrastructure strategies are focused on addressing existing needs, anticipating future growth and protecting Long Island’s natural resources:

Sustainable Transportation
T-1 Create alternative, local, dedicated funding sources for Long Island transportation and environmental infrastructure
T-2 Create vibrant, transit-supported communities
T-3 Establish transit-served job centers
T-4 Implement a meaningful suburban transit system
T-5 Create a dedicated funding source for mobility improvements in transit-supported developments and downtowns
T-6 Pursue the viability of establishing Long Island as a federally-designated Metropolitan Planning Organization (MPO)
T-7 Improve and create new regional connectivity to include off-Island connections and network expansion
T-8 Conduct a feasibility study for a deepwater port on Long Island Sound in eastern Suffolk County
T-9 Take action to manage congestion and make transit competitive
T-10 Expand active transportation options

Environment & Infrastructure
I-1 Implement a plan to protect Long Island’s natural water resources to include the creation of a Long Island Water Resources Management Board
I-2 Develop a regional energy strategy and energy conservation programs to realize an affordable, reliable and diverse low-carbon energy supply
I-3 Create a Long Island-wide “zero waste plan” as part of a regional strategy
I-4 Protect the Island’s beaches and marine resources
I-5 Develop a climate change resilience plan to anticipate sea level rise
I-6 Coordinate an emergency preparedness plan across Long Island

Land Use
L-1 Establish development guidelines that serve to preserve open spaces and protect the natural environment
L-2 Complement town and village land use regulations with overlay guidelines
L-3 Protect farmland and ensure local food access
L-4 Protect neighborhood character and provide for location-compatible and appropriate new development
EQUITY
Providing equitable social, economic and workforce opportunities for all of Long Island’s residents is essential to the long-term sustainability of the Island as an employment center, place of residence and social and cultural outlet. These goals can be achieved through the following strategies:

EQ-1 Develop a fair-share housing plan for creating the necessary next-generation and mixed-income workforce housing for Long Island
EQ-2 Establish an immigrant task force to meet the challenges and seize the opportunities of an emerging immigrant population
EQ-3 Catalyze social and economic development through arts and cultural programs
EQ-4 Establish training, educational and employment centers for technical jobs in low-income and minority communities
EQ-5 Meet the health needs of an aging, diverse and sedentary population

In the end, by providing equitable opportunities for economically, socially and environmentally sustainable livelihoods, a high quality of life for existing and future generations on Long Island can be attained.
TAX & GOVERNANCE
**TAX & GOVERNANCE**

**CONTEXT** Long Island’s system of more than 700 units of general or special purpose local governments is extremely expensive, inefficient, and fragmented. Long Island has more than 2 times the number of local governments in comparison to other New York counties despite an average land area nearly 30% less than the statewide county average. Counties on Long Island have fewer towns but six times as many villages and schools districts and five times as many fire districts as the rest of New York State counties. This layering of government has been one of the reasons behind Long Island’s property tax burden, which is among the most costly in the country and has resulted in stifled economic development.

**CHALLENGES** Long Island faces a number of critical governance challenges:

- **Long Island governance is expensive and the cost is rapidly growing.** Long Island governments and school districts are rapidly becoming too costly to be sustainable, exceeding comparable increases in measures such as the regional Consumer Price Index and personal income.

- **Services are duplicated.** The current governmental structure contains overlapping layers of service delivery. Counties, towns, villages and cities all spend significant amounts on public safety, sanitation, and transportation.

- **The property tax burden is unsustainable and unacceptable.** Property taxes on Long Island are among the highest in the nation, more than 2½ times the national average, and there is a broad consensus in the business community that this represents a serious impediment to business development and job creation.

- **The quality of government services is not monolithic.** Nowhere is this more striking than in the area of primary and secondary education. Long Island is home to some of the best and worst public schools in the state— in some cases only miles from each other.

- **The escalating costs of public benefits and entitlements are unaffordable.** The rising costs of public employee benefits including pension and health coverage as well as Medicaid and Medicare costs are unsustainable for state, local government, and school districts.

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**Example:** In 2005 LI median household income was $86,618 and the median property taxes paid was $6,578 (7.6% of household income). If this trend continues, in 25 years median household income will increase to $227,857 but property taxes will then consume over 14% of household income or $32,897, in 2035.

**Note:**
Median property taxes only include property taxes paid on owner-occupied housing. Median household income only includes households that are owner-occupied housing units. 2005 is first year data is available. Projections are estimated from a limited time period (2005-2009) and assume median property taxes and median household income will continue to grow at their respective average annual growth rate over this time period, 5.5% and 3.3% respectively.

**Sources:** U.S. Census Bureau, Tax Foundation, PFM
ASSETS Long Island’s key assets are supported and often kept in operation through its government delivery system:

- **Nationally-leading public services**, with some of the best schools in the nation;
- Renowned **quality-of-life amenities** such as parks, beaches, farms, and the arts;
- Clean and inexpensive **drinking water**
- Close proximity to the **largest financial market and job & cultural center** in U.S.
- Layers of government which **enhance local control**

VISION The governance sustainability plan seeks to establish an expenditure and revenue model that:

- Maintains, if not strengthens, the positive aspects of **governmental services**;
- **Remedies government’s shortcomings** -- first and foremost by addressing the omnipresent property tax challenge;
- Devises ways to **make government at all levels more affordable** than it is today.

LINKAGES TO OTHER INITIATIVES Improved Long Island governance cannot be achieved without a number of additional strategic initiatives recommended in other sections of the report, including:

- Creating a better business environment and **providing affordable housing** to sustain a productive tax base;
- **Ensuring quality education** by more efficiently deploying property tax revenue and promoting positive outcomes.

OUR PLAN FOR TAX & GOVERNANCE

The Council’s plan recognizes that, for governments on Long Island, sustainability largely means **self-sustainability**. Lobbying for a more equitable share of state and/or federal aid is necessary, but cannot be the only solution. Accordingly, we believe that Long Island should:

TG-1  Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden

TG-2  Enhance shared services for local governments and school districts

TG-3  Streamline government permitting and approval processes for significant projects

TG-4  Expand healthcare reform coverage and foster cost containment to include Medicaid and Medicare costs

TG-5  Improve voter turnout
TG-1  Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden

CONTEXT

Long Island is known for its high-performing schools, although it is widely recognized that high education achievement is not universal. The quality of education and educational opportunities are not the same in all school districts resulting in Long Island having some of the highest achieving schools and some of the persistently lowest achieving schools within the State. Individuals and companies are attracted to our region to a great extent because of the reputation of our public schools. At the same time, our region is burdened by some of the highest property taxes in the nation, the majority of which can be attributed to the school component. Long Island has a high tax reputation that poses a severe impediment to job retention and creation and forces many of our young families to leave the region.

Long Island cannot thrive as a region without a quality and affordable public education system that offers an equal opportunity for success to all students, regardless of race, socio-economic status, community resources or learning abilities.

The goal of the Actions below is to increase academic performance and educational opportunities for all as well as contain costs by building on regional resources and authorities—such as Boards of Cooperative Educational Services (“BOCES”). We recognize that long-standing structures and practices have contributed to racial segregation and concentrations of poverty, leaving certain communities with greater educational burdens and fewer resources to deal with them. The Council urges that a consensus be reached on regional solutions that can be employed as soon as possible to help all school districts overcome systemic impediments to improving the success of all students and easing the property tax burden.

PROPOSED ACTIONS

1.1: Focus the Long Island region’s collective resources, its political muscle, fiscal might and educational expertise on elevating achievement in its persistently lowest achieving school districts that produce students unable to realize their potential and closing the achievement gap among Long Island school districts to enhance our region’s performance. In order to achieve the desired results, this initiative provides consideration of the following options: creating equal educational opportunities between and among school districts by the promotion of collaborative initiatives involving BOCES, institutions of higher education, groupings of local school districts and other cooperative regional assets; application of the “Distinguished Educator” provision of the State Education Law; utilization of available data measuring educational outcomes along with establishing appropriate educational achievement and disparity indices to assess and monitor progress in closing the existing achievement gap among school districts and assure resources be directed to school districts to address disparities and inequalities in educational opportunities; seeking a regional solution as preferable among potential options in the event a change in governance of a school district is contemplated or required; and “regionalization” of the school portion of the commercial/industrial and utility property tax base using a phase-in approach for “Projects of Regional Significance”.

Long Island Sustainability Plan
TG-1  Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden (continued)

PROPOSED ACTIONS

1.2: Pursue State legislation that requires either funding or rescission of unfunded State imposed mandates on our school districts, over and above Federal requirements. The goal of this Action is to promote improved opportunities and outcomes for all students and contain unnecessary costs by introducing objective standards and flexibility in the application of such requirements.

1.3: Replace or expand secondary school course offerings using technology to more efficiently and cost effectively deliver teaching services, as a way to help all school districts meet student needs and educational goals.

1.4: Promote initiatives to restructure Long Island high schools to optimize student opportunities and maximize return on educational investment, with specific consideration of expanding BOCES offerings and creating programming partnerships including internships with Long Island colleges and universities as well as business, labor, trade councils and large employers. The goal of this Action is to provide a rigorous and relevant curriculum for all students, to include assessment of student knowledge to measure academic and career paths in an effort to maximize the regional K-12 education experience.

1.5: Pursue State legislation to further incentivize consolidation of school districts where appropriate. Provide regional and local data to support such initiatives while also securing adequate funding in the form of “transition and reorganization incentive aid” to facilitate such efforts. The goal of this initiative is to improve educational opportunities and providing equitable access to quality education to all students on Long Island, as well as achieving long-term cost savings.

1.6: Petition the New York State Comptroller to provide a comprehensive assessment of the New York State Retirement System with the prime directive of controlling its cost to Long Island school districts and local governments, as well as allowing establishment of appropriate reserves to sustainably fund mandated retirement expenses.

1.7: Work with local governments, school district representatives, BOCES and State government officials to explore and assess alternatives for Long Island school districts and local governments to the current New York State Health Insurance Program coverage for public employees; acknowledge the value of school districts and local governments which have required contribution from employees for health insurance premium costs, encourage more to do so and foster continued work from all to contain health benefit costs.
TG-1 Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden

(continued)

PROPOSED ACTIONS

1.8: Reform and supplement the State’s foundation formula funding to provide equitable distribution of State education aid to Long Island schools to close the gap of government funding and resources among school districts by recognizing, among other things, regional cost and wealth differences.

1.9: Investigate the feasibility and the potential advantage of a regionalized employment structure providing for regional collective bargaining for school district employees for the purpose of achieving cost savings and equitable access by all school districts to the most qualified and experienced personnel.

1.10: Transform schools into multi-functioning neighborhood centers so schools can further maximize return on educational investment and receive financial reimbursement, creating more opportunities for collaboration with local government, organizations and institutions to more efficiently deliver additional services. These services should include expanding adult education and vocational training as well as health care and nutrition programs. Encourage support for regional grant applications seeking funds to implement such initiatives.

1.11: Establish a collaboration between and among school districts, to include school boards, superintendents, administrators, teachers, parents and communities to actively work to support development of workforce housing options which include a variety of types and prices. Advance the development of rental and multi-unit housing demonstrated to be tax positive to school districts and in locations where the existing or improved infrastructure can support such developments. Recognize the fact that such housing options are an essential ingredient for retaining and attracting a strong and diverse workforce while also increasing our tax base.

1.12: The Long Island Regional Planning Council and its Education Working Group will collaborate to implement regional strategies through Actions as provided herein to maintain and improve educational outcomes, increase school district revenues as well as contain costs. This implementation will include development and use of objective metrics to evaluate the outcomes and assess success of these Actions and provide the results of such evaluation in the content of an annual progress report. To the extent that after two (2) years hence these and related Actions do not create adequate results, other and additional area appropriate measures will be presented as part of the solution for Long Island to improve educational opportunities and achievement for all students and control school costs.
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<th>IMPLEMENTATION</th>
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<td><strong>Key steps</strong></td>
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<td><strong>Financing structure</strong></td>
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<td><strong>Challenges</strong></td>
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<td><strong>ROLE FOR LIRPC</strong></td>
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| **LINKAGES TO OTHER INITIATIVES** | Enhance & expand shared services for local governments and school districts |
|  | Establish training, educational, and employment centers for technical jobs in low-income and minority communities |
|  | Meet the health needs of an aging, diverse and sedentary population |
|  | Expand Health Care Reform coverage, cost containment |
**Distance Learning:**

**State of Florida Distance Learning Task Force**

The State of Florida has been a national leader in exploring the potential and problems of distance learning at both the college and secondary levels. Last year, responding to the intense local interest in initiatives that could save money and expand educational opportunities — and to concerns about maintaining high and consistent standards -- the State Legislature created a nine member Distance Learning Task Force. Although its focus primarily was on higher education, its findings can be expanded and applied to secondary schools and to programs joining the two systems — and to Long Island.

The Task Force’s goals were to facilitate maximum affordable access for students, achieve increased cost-effectiveness in the development and delivery of courses, improve instructional techniques, advance technological innovations, and provide accountability for funding and academic achievement. The Task Force’s recommendations include: the formal establishment of a central coordinating entity, the Florida Distance Learning Consortium; the hosting of a state-level learning resource repository; the development of an online registration process; and the promotion of an on-line catalog of course offerings. The Florida findings and recommendations could serve as a model of motivation and action for a similar Long Island entity, organized by its BOCES.

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**Achievement Parity:**

**Elmont High School**

Despite a demographic profile that normally suggests educational trouble, Elmont High School has motivated its students and faculty to achieve. The key, as many studies suggest, is strong, innovative leadership at the district and building level. Elmont had both, a visionary superintendent and a hard-nosed principal. The fact that the principal was black brought the added benefit of being a role model.

Overall, the school leaders emphasized raising expectations and they sold this ethos to parents, sometimes door to door. Academic achievement was celebrated in the buildings even more lavishly than athletic prowess. The superintendent and principal also imparted this spirit on faculty, taking advantage of a wave of retirements to recruit a younger, highly-motivated teacher corps.

The school imposed strict discipline on students; parents were apprised of lagging performance and plans were devised to boost it. As for resources, Elmont had the benefit of being part of a Central High School District with several wealthier communities, so resources could be shifted — in ways most schools can’t — to help the poorer neighbor.

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**Multi-Functioning Neighborhood Centers:**

**Cypress Hills Community School — Brooklyn, NY**

The Cypress Hills Community School was co-founded by the Cypress Hills Local Development Corporation, the New York City Board of Education and local parents. The school serves students in grades K-8, and provides dual language curriculum, parent governance and small class sizes.

The Cypress Hills Community School offers afterschool programs to children from a number of local schools, a school-based community center for adult education with afterschool and summer programs, family counseling, and a community learning center. The school is a model for parental involvement in their children’s schooling, as well as services offered to the parents themselves, from counseling and immigration services to continuing education classes.

The Cypress Hills Local Development Corporation provides housing counseling, community development, economic development, youth and family services, community organizing, the community school, a collegiate prep school and a child care corporation to the local Cypress Hills, Brooklyn community.

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**Rockville Centre School District Tracking Reform**

Long Island’s Rockville Centre School District initiated a detracking reform in the late 1990s that aimed at increasing expectations for all students through across-the-board implementation of the curriculum previously taught only in high-track classes. Changes to curriculums were made gradually and adjusted based on careful evaluation of outcomes.

The reform was part of a goal to improve the district’s rates of Regents diplomas earned. As a result of the district’s detracking reform the Regents passing rate in Rockville Centre jumped to 98% in 2009 while the statewide average was 81%. In addition, initial results from the Rockville Centre program indicate that the program is making strides in decreasing the achievement gap. Statewide, the percentages of African American or Hispanic students and white or Asian American students earning Regents diplomas both increased but the gap between the two groups remained constant. The same indicators from Rockville Centre revealed not only an increase in the percentages earning Regents diplomas but also a decrease in the gap between the two groups.
### CASE STUDIES

#### Grade 12 Innovation: Proposed program for early graduation, National Center on Education and the Economy

In order to ensure that students master a set of basic requirements and to reduce the numbers of high school graduates who need remedial courses when they enroll in college, the National Center on Education and the Economy is proposing a new program modeled largely on systems in high-performing nations including Denmark, England, Finland, France and Singapore. This new system of high school coursework with the accompanying board examinations will be introduced in 2011 allowing 10th graders to get a diploma two years early and immediately enroll in community college.

Students who pass but aspire to attend a selective college may continue with college preparatory courses in their junior and senior years, organizers of the new effort said. Students who fail the 10th-grade tests, known as board exams, can try again at the end of their 11th and 12th grades. The tests would cover not only English and math but also subjects like science and history.

The start-up costs for school districts would be about $500 a student, to buy courses and tests and to train teachers. To defray those costs, the eight states intend to apply for some of the $350 million in federal stimulus money designated for improving public school testing. High school students will begin the new coursework in the fall of 2011 in Connecticut, Kentucky, Maine, New Hampshire, New Mexico, Pennsylvania, Rhode Island and Vermont. The education commissioners of those states have pledged to sign up 10 to 20 schools each for the pilot project, and have begun to reach out to district superintendents.

#### Regional Bargaining: Governmental Mergers

While the concept of regional collective bargaining agreements is unique, some governmental units around the country have merged to create uniform wages and benefits scales, work rules, and job classifications. This approach mirrors the concept of creating a regional single public sector bargaining unit.

In 2003 the City of Louisville and Jefferson County, Kentucky merged into a single general-purpose government – the Metropolitan Government of Louisville-Jefferson County (“Metro”) – overnight creating the 16th largest city in the country. The Metro administration developed a negotiation strategy for each bargaining unit, with strategy components tied to fiscal and service delivery objectives. Metro achieved a significant win in its bargaining with its Police union, with sworn officers accepting raises of 0%, 2%, and 2% over the next three years, plus agreeing to contribute to medical benefits for the first time, achieving millions in savings compared to prior contracts.

The main challenge in implementing the merger was political resistance and perceived loss of local control, and concerns over the allocation of public safety officers in an expanded geographic municipality. However, many advantages resulted. In addition to standardizing wage and hour agreements, the merger brought about efficiencies and cost-effective delivery of services. The merger also facilitated interactions between the government, unions and private sector firms, who going forward only had to interact with one central agency.

#### Cost Containment: Unfunded State Mandates – READ

Regional Educational Advocacy Districts (READ) was created in 2004 by four Westchester County School Districts to consider issues of mutual concern and develop solutions. Comprised of superintendents and school board members, READ has done extensive work on the effects of unfunded mandates on school districts, including creating a school district template for identifying and estimating the cost of unfunded mandates.

READ identified more than 90 mandates (State and Federal) covering a broad range of categories including: Special Education & Special Services, NCLB Requirements/Academic Intervention Services, Transportation, Health & Safety, Buildings & Grounds, Finance, and Professional Development.

Using READ’s unfunded mandate cost template, districts in Westchester County estimated that in FY2007-08 unfunded mandates accounted for 16% of the participating school districts budgets. However, in FY2008-09 unfunded mandates accounted for 19% of the participating school districts budgets. Note: READ did not include benefit costs (retirement, health insurance, etc.) in these calculations. (http://www.read1.org/index.html)
TG-2  Enhance shared services for local governments and school districts

Cooperation in shared services can help erase artificial barriers that increase costs. LIRPC, working with the Counties, could become a regional clearinghouse for innovation and shared services models and initiatives, and as appropriate, a platform for the development of government cost savings initiatives.

CONTEXT

Long Island has a long history and tradition of home rule control, which has resulted in duplicative spending between more than 700 overlapping governments related to public safety, sanitation and transportation. While this current structure is unlikely to be modified in the short-term through consolidation, significant immediate opportunity exists to compel local governments and school districts to coordinate shared services.

PROPOSED ACTIONS

2.1 Near-term: Determine the lead organization for heading the effort. A regional entity such as LIRPC, in collaboration with the Counties, could act as the clearinghouse for innovation initiatives, serving as a regional platform for broad-based shared services and innovation projects. An inventory of past and current innovation ideas and initiatives, research on best practices and public outreach would facilitate a smooth and speedy start-up of shared services initiatives.

2.2 Mid-term: Select specific new shared services initiatives with best opportunities for efficiency gains. Develop a technical policy plan for implementation as well as a methodology for documenting historical costs and determining potential savings for participants. Hold a series of public forums to promote regionalism and innovation goals, and to gain buy-in from key stakeholders.

2.3 Long-term: Implement new shared services initiatives. Use the forum process to regularly engage leaders to explore and cost out shared service initiatives. Publicize success and savings to increase the incentives for participation and the political disincentives for non-participation. With successful implementation, Long Island could serve as a model for shared services initiatives for other governments and regions.

### Units of Local Government, Long Island

<table>
<thead>
<tr>
<th>Units of Local Government</th>
<th>Nassau County</th>
<th>Suffolk County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Town</td>
<td>3</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
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<td>0</td>
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</tr>
<tr>
<td>Village</td>
<td>64</td>
<td>32</td>
<td>96</td>
</tr>
<tr>
<td>Total GPU</td>
<td>70</td>
<td>43</td>
<td>113</td>
</tr>
<tr>
<td>School District</td>
<td>56</td>
<td>69</td>
<td>125</td>
</tr>
<tr>
<td>Total GPU and SDs</td>
<td>126</td>
<td>112</td>
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</tr>
<tr>
<td>Fire District</td>
<td>39</td>
<td>93</td>
<td>132</td>
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<tr>
<td>Special Districts</td>
<td>140</td>
<td>200</td>
<td>340</td>
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<tr>
<td>Total</td>
<td>305</td>
<td>405</td>
<td>710</td>
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</table>

Note: Units of local government only include general purpose and special purpose local governments. Nearly all of these units can impose taxes and/or issue debt. This count does not include other special units (BOCES, Community Colleges, Consolidated Health Districts, and Joint Activity Districts), and local public authorities.
<table>
<thead>
<tr>
<th>IMPLEMENTATION</th>
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<tbody>
<tr>
<td><strong>Responsible entities</strong></td>
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</table>
| **Approvals required** | • State legislation to permit cooperative bidding and shared service agreements between all levels of local government and school districts  
• Some shared service initiatives may require local approval |
| **Key steps** | • Establish LIRPC as regional platform for shared services  
• Identify all statutory impediments to local government and school district shared service  
• Engage state representatives to sponsor legislation to remove shared service impediments  
• Establish schedule of regional shared service forums |
| **Costs** | LIRPC may need project administration and technical support. Cost TBD. |
| **Financing structure** | Options:  
• State Grant  
• Local Government/school district membership fee or pro rata cost share  
• Project revenue |
| **Challenges** | • Requires State legislation  
• LIRPC staff and fiscal capacity  
• Desire for local control  
• Labor union resistance |

**LINKAGES TO OTHER INITIATIVES**

- School & Municipal Savings Initiative: Opportunities for Efficiencies Through Shared Services, a Cooperative Effort by Nassau County, Nassau School Districts & Nassau BOCES (2008), CGR, Hofstra University, PFM

**ROLE FOR LIRPC**

- Act as a shared services research and development center, responsible for generating new ideas, performing outreach to applicable school districts and local governments, maintaining ongoing research on best practices and documenting cost savings through ongoing initiatives
- Outreach should be initiated to all general purpose unit (GPU) local governments through the two participating counties, and to all school districts through the three Boards Of Cooperative Educational Services (BOCES) currently operating on Long Island
- Survey local government officials to determine existing common areas of operation, priorities in potential shared services areas, and ongoing shared services initiatives, and disseminate survey results for districts and BOCES to use in finalizing opportunities
- Apply for grants and state aid to assist in efficiency implementations
- Coordinate a lobbying strategy among participating subdivisions to change or bring improvements to relevant state or local laws and regulations
- Provide or facilitate technical assistance for the preparation of grant funding applications, as well as in changes to State laws and regulations
- Coordinate the consolidation of various government functions

**TAX & GOVERNANCE**

**Nassau County/Nassau BOCES School Shared Services**
Nassau County and Nassau BOCES are currently participating in a $1 million, 21st Century Demonstration Project Grant with the goals of:
• Create immediate savings for participants – potentially $4 million
• Increase the number of participants over time, both school district and municipal
• Identify additional opportunities for shared service savings
• Develop the initiatives as prototypes for savings statewide
• Establish a variety of formats for public information and interaction, to increase public pressure for savings through participation
• The four initial initiatives for implementation and savings include:
  • Information Technology and Telecommunications
  • Internal Audit Services
  • Out-of-District Transportation
  • Purchasing

**Suffolk County Shared Purchasing of Gasoline/Diesel Fuel**
Suffolk County has entered into shared service fuel purchasing agreements with two fire districts, and the Hauppauge school district.
• Through cooperation all take advantage of the economies of scale the County achieves through its high volume purchase.
• Participants avoid the estimated $300,000 to $500,000 tank upgrades and or replacement costs, as well as pumping facility maintenance costs to keep fueling stations up to state standards.

**Suffolk County Shared Purchasing**
Suffolk County is developing a Long Island Purchasing Consortium, inviting Nassau County, local municipalities in both counties, school districts and not-for-profit organizations to take advantage of the benefits and economies of scale. It is believed the local consortium can attract more competitive pricing on supplies, equipment and commodities, from local and regional bidders, than is found on the statewide purchasing list.
Develop a “one-stop shopping” process where permitting and approvals are coordinated and managed in a single forum, adhering to a strict timetable upon which developers and governments can rely and which fosters economic growth.

**CONTEXT**

For major projects with regional significance, the myriad government jurisdictions force potential developers and companies to navigate a costly and time-consuming process, including State Environmental Quality Review Act (SEQRA) and other environmental reviews, municipal zoning, state and local health permits and transportation approvals, and tax and business permits.

Large projects such as The Lighthouse in Nassau County and the Heartland Town Square in Suffolk County as well as a number of small-scale housing development projects on the Island have been delayed for years as a result of the governmental approval process. Pre-permitting and an expedited process are necessary for moving forward with new projects.

**PROPOSED ACTIONS**

**3.1 Near-term:** Convene government, business and state leaders to examine and deliberate the streamlining of project approval procedures. Document the costly regional economic impact of project delays and uncertainty, and research national best practices in comparable areas.

**3.2 Mid-term:** Create a Regional Significant Project Management process, possibly under the auspices of LIRPC. All necessary governmental approvals would be managed in a single forum, following an agreed-upon timetable. The most expeditious and attractive solution for potential developers would be to have local governments voluntarily cede certain approval authority, such as SEQRA, to the regional body, possibly LIRPC. Alternatively, local home-rule prerogatives could suffer less disruption by having all stakeholders consider their individual actions in a common forum.

**3.3 Long-term:** Develop an economic development master plan of priority development projects. Using the mechanism described above, develop a series of project locations whereby all necessary approval actions for a specific type of desired land use have either been pre-approved, or the governing body has stipulated to approve the project on an expedited basis.
### IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>LIRPC, all relevant State and local entities</th>
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</table>
| Approvals required   | • For the actual assignment of permitting powers, enabling State legislation and/or local laws would be required;  
  • County planning entities |
| Key steps            | • Convene a forum on streamlining project approval procedures and develop a consensus;  
  • Development of a process design;  
  • Obtain required approvals and funding  
  • Develop marketing material |
| Costs                | TBD. LIRPC staff and contractual expertise required. Marketing resources needed |
| Financing structure  | • State and Federal Funding;  
  • Local joint funding arrangement, including private sector support;  
  • Fee and project revenue |
| Challenges           | • Political opposition  
  • State legislative enactment  
  • Funding |

### CASE STUDY

**Santa Fe, New Mexico**

By the early 1990s, most residents of Santa Fe, NM could not afford a median priced home and housing costs were 40% above the national average. Complicated development processes and restrictive land use policies also slowed housing development. The City implemented a comprehensive reform initiative in response to these challenges:

- Accelerated the processing of housing developments that included at least 25% affordably priced homes;
- Waived or reduced various impact, processing and permitting fees for affordable housing developments

As a result, nearly one in five new homes built in Santa Fe in the last decade are classified as working family-affordable.

**Suffolk County, New York**

All ten (10) towns in Suffolk County have joined in the development of an online “portal” to various governmental websites where permit documents can be downloaded and filed. The “portal” will be developed to facilitate parallel reviews to coordinate and reduce “application to decision” timelines.

### ROLE FOR LIRPC

- Organize and summon government and business leaders with permitting and zoning purview or interests to a one-time conference and/or an ongoing series of forums to gauge the economic impact of Long Island’s project approval system and begin a dialogue about a new regional approach
- Establish a service center with liaisons to all local governments with a mission of accumulating data, providing assistance, soliciting feedback and offering guidance in the approvals process for regionally-significant projects
- Form agreement for assuming authority from local governments for certain formal and resource-intensive approvals procedures, such as environmental reviews for regionally-significant projects
- Create a regional “one-stop” website with all relevant documentation for permits, inspections and licensing for the myriad of jurisdictions on Long Island

### LINKAGES TO OTHER INITIATIVES

- Literature Review for Streamlined Permitting (2007), Massachusetts Association of Regional Planning Agencies
- Alliance Report on the Summit on Streamlining the Building Regulatory Process Through Interoperability (2003), the National Conference of States on Building Codes and Standards, Inc.
- New York State PBPA, Adirondack Management Plan, New York State Affordable & Workforce Housing Act
TG-4 Expand healthcare reform coverage and foster cost containment to include Medicaid and Medicare costs

In a region with many high-quality healthcare institutions and a heavy public investment in care for the poor and elderly, the fact that one in 10 Long Islanders are without coverage and the high costs paid by individuals and businesses are not justifiable. With the recent passing of Health Care Reform, coverage will be greatly expanded but coverage gaps are expected to continue. We recommend that several existing or emerging non-government programs be expanded to assure that all Long Islanders have access and we continue to support and expand on cost containment initiatives.

CONTEXT
More than 1 in 10 Long Islanders ages 18-64 lacked health insurance coverage as of 2008, including a significant number of people who qualify for government-subsidized programs but aren’t accessing them. Many without coverage seek care in hospital emergency rooms for illnesses that could have been treated or prevented less expensively – and before they became more serious. Children and the elderly have higher rates of coverage due in part to Medicare and Medicaid, federal programs that New York State enriches with its own tax dollars to extend eligibility and offer a broader range of care than most states.

For Long Islanders with employer-based health insurance, family premium contribution percentages increased 7-10% from 2006 to 2008 despite flat median household income. Policy-makers contend that containing costs and bringing more individuals and families onto insurance rolls will improve business competitiveness and the broader economic climate. Recent health care reform legislation is expected to reduce health care costs and the state and local governments will have to work with businesses, insurers and consumers on local responses to support any cost containment efforts.

For example, to help give local small businesses greater “purchasing power” in the insurance market, the region’s largest business group, the Long Island Association, received state permission to create a Health Purchasing Cooperative. To reduce the impact of the fastest rising component of care, prescription drugs, then-Nassau County Comptroller Howard Weitzman established NassauRx, which provided a card to county residents that gave them discounts at most of its pharmacies.

PROPOSED ACTIONS

4.1 Near-term: The Long Island Regional Planning Council should convene a “Healthy Long Island” coalition of policy makers, providers and stakeholders to devise, in the context of Federal Health Care Reform a strategy of enhanced coverage, access and quality for Long Islanders. This strategy would include creating lower-cost coverage products for younger, healthy workers; clarifying the responsibility for the indigent and uninsured in a way that maximizes State and Federal reimbursement; providing an efficient and comprehensive set of care options for older Long Islanders that allow them to live in the least restrictive environment; and providing coordinated pathways to grow job opportunities in the healthcare industry and support technology transfer capacity for promising research.

4.2 Mid-term: The LIRPC should encourage the synthesis of Island-wide initiatives in each of the four areas: quality, access, employer cost and jobs. Lead organizations should be designated and specific actions identified and pursued. Local universities and other research-oriented organizations to come up with “best-practice” examples of ways regions have increased coverage and contained costs.
### IMPLEMENTATION

| Responsible entities | • LIRPC  
|                      | • Major providers and institutions, such as North Shore LIJ Health System  
|                      | • State and local department’s of health  
|                      | • Key business and not-for-profits  
| Approvals required   | • State health and insurance agencies  
|                      | • State legislature  
| Key steps            | • Determining state/local impact of health care reform  
|                      | • Starting research initiatives  
|                      | • Recruiting sponsors for necessary state and federal legislation  
|                      | • Bringing together competing institutions and fragmented jurisdictions to forge consensus  
| Costs                | • Outreach to Medicaid eligibles  
|                      | • Additional insurance coverage  
|                      | • Development, marketing and administration of new insurance product  
| Financing structure  | • Savings from reduced costs, increased access to revenues from state and federal programs  
| Challenges           | • Persuading competitors to work together  
|                      | • Forging consensus on which practices to promote  

### LINKAGES TO OTHER INITIATIVES

- Long Island Association Health Alliance.  
- Nassau County Nassau Rx.  
- Health and Welfare Council of Long Island enrollment initiative  

### CASE STUDY

**Access Health Care Long Island Coalition**

A major network of health and social service providers received a grant from the New York State Health Foundation to organize a bi-county group aimed primarily at easing the enrollment of residents eligible for government-subsidized health care. AHCLIC has received high marks from its underwriters and participants. The network, the Health & Welfare Council of Long Island, administers a coalition that is a classic public-private partnership. It includes a number of independent, not-for-profit agencies, the Nassau and Suffolk Departments of Social Services, "facilitated enrollment" specialists, managed care organizations and community-based groups.

The collaboration has created efficient and simple systems for enrolling, retaining and serving managed care enrollees within the context of the state’s complex regulatory requirements. Its objectives are to increase the number of Long Islanders in state health programs, decrease the error rate in applications that can delay or deny otherwise eligible residents, and shorten the time it takes to confirm eligibility so they can receive care more quickly.

### ROLE FOR LIRPC

- Encouraging research and consensus-building meetings.
TG-5 Improve voter turnout

Voting in state, local and federal elections is a key component to citizenship and engagement on sustainable strategies, yet voter turnout on Long Island has been alarmingly low in recent non-presidential election years and, in particular, school and special district elections. Initiatives to raise awareness, streamline election dates and improve access could significantly boost voter turnout in all elections.

CONTEXT

Voter turnout is considered a key measure of the citizenry’s engagement with the political process. However, numbers in recent years point to disengagement by the majority of eligible voters in non-presidential election years. Especially troubling is a continuing decline in participation, evidenced by turnout in the Nassau County Executive races which dropped from 38% in 2001 to 34% in 2005 and 27% in 2009. Voter turnout is at its lowest in non-November elections.

There are a number of factors that may negatively affect voter turnout, including lack of transparency in the process and results, and low overall awareness. Confusion with registration requirements is also a concern, as State law requires registration no less than 25 days before an election. A variety of non-November elections mandated by State law may also contribute to voter apathy and confusion, especially in Long Island’s fragmented local government system:

<table>
<thead>
<tr>
<th>Election</th>
<th>Date</th>
<th>Year</th>
<th>Area</th>
<th>Election</th>
<th>Turnout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village</td>
<td>Third Tuesday in March</td>
<td>2009</td>
<td>Nassau</td>
<td>November - General</td>
<td>27%</td>
</tr>
<tr>
<td>School Budgets and Board Members</td>
<td>Third Tuesday in May</td>
<td>2009</td>
<td>Suffolk</td>
<td>November - General</td>
<td>20%</td>
</tr>
<tr>
<td>Village</td>
<td>Third Tuesday in May</td>
<td>2008</td>
<td>Nassau</td>
<td>November - General</td>
<td>70%</td>
</tr>
<tr>
<td>School Budgets and Board Members</td>
<td>Third Tuesday in May</td>
<td>2008</td>
<td>Suffolk</td>
<td>November - General</td>
<td>70%</td>
</tr>
<tr>
<td>Village</td>
<td>Third Tuesday in May</td>
<td>2008</td>
<td>New York State</td>
<td>November – General</td>
<td>58%</td>
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<tr>
<td>Village</td>
<td>Third Tuesday in May</td>
<td>2006</td>
<td>Nassau</td>
<td>May – School Budget</td>
<td>16%</td>
</tr>
<tr>
<td>Village</td>
<td>Third Tuesday in May</td>
<td>2006</td>
<td>Suffolk</td>
<td>May – School Budget</td>
<td>20%</td>
</tr>
<tr>
<td>Village</td>
<td>Third Tuesday in May</td>
<td>2006</td>
<td>New York State</td>
<td>May – School Budget</td>
<td>14%</td>
</tr>
</tbody>
</table>

PROPOSED ACTIONS

5.1 Near-term: Initiate a regional voter participation and education campaign. Face-to-face canvassing, direct mailings and phone banking will get infrequent voters to the polls (in a non-partisan manner). Outreach is most valuable in the month leading up to the election. A coalition of cross-county non-profit organizations, contracted with minimal expenditure, may coordinate the effort.

5.2 Mid-term: Realign dates of local elections. Synchronizing the dates that voters approve budgets and elect people to office will generate greater voter interest and participation, simplify election administration, and result in local cost savings. LI may serve as a pilot region for such changes.

5.3 Long-term: Facilitate easier voter registration, most especially through Election Day Registration. Nine states in the U.S. currently allow same-day registration, and LI may serve as a pilot region for a demonstration project in NYS. Same-day registration has been shown to result in higher voter turnout especially among first-time voters.
## IMPLEMENTATION

| Responsible entities | • Regional authority such as LIRPC  
|                      | • All local governments and political subdivisions with elected officials  
|                      | • State Legislature  
|                      | • Voter referendum |

| Approvals required | • State Legislature may have to authorized realignment of local election dates  
|                    | • Election day registration would require an amendment to the NYS Constitution |

| Key steps | • Constitutional amendment has to pass both the Assembly and Senate in two different legislative sessions, and then be put to the voters in a statewide ballot  
|           | • State Election Law would have to be changed to realign local election dates (villages may adopt propositions to hold elections on any date) |

| Costs | • Minimal financial expenditure for same-day voter registration and realignment of election dates  
|       | • Merging local election dates would result in lower local administrative polling costs  
|       | • Realigning local elections may require fiscal years to be modified based on new election dates  
|       | • Voter education and mobilization campaign may require a contractual expenditure |

| Financing structure | • TBD |

| Challenges | • Realigning election dates would raise practical challenges of securing enough machines and coordinating voting locations  
|            | • Election day registration would require anti-fraud mechanisms to be implemented (identification, etc.). |

## CASE STUDY

**Michigan Consolidated Elections**

Legislation approved in Michigan in 2003 reduced the number of dates that federal, state and local elections could be held throughout the State. Members of the public were unhappy with the sheer frequency of elections and confusion of different polling places. Elections were standardized to be conducted by county or township clerks, thereby ensuring that voters received proper instructions and help from trained professionals. Local governments saved the administrative costs of conducting multiple elections by limiting the number of times voters go to the polls each year.

### Election Day Registration in the 2008 Presidential Race

Nine states allow some form of election day registration. These states have reported higher turnout compared to New York. The average turnout for the same-day registration states in 2008 was 69%, compared to 62% for the non-same day registration states (61% in NYS). The states that allow this process have also reported fewer provisional ballots and very few problems with fraud.

## ROLE FOR LIRPC

- LIRPC would be the entity responsible for running or coordinating the near-term voter education and mobilization campaign
- LIRPC could work with local governments to assist in the technical and political facets of election-date realignment
- LIRPC to take a role in educating the public on timing of elections.

## LINKAGES TO OTHER INITIATIVES

- **Economy**: An engaged citizenry is important to creating an educated workforce and a vibrant citizenship climate for businesses
- **Equity**: Voter participation will enhance influence of multiple groups in the democratic process
ECONOMY
ECONOMY

CONTEXT Long Island began its suburban era as a bedroom community to New York City, but quickly evolved in postwar years with a burgeoning aerospace and defense sector, served by a skilled and highly-paid labor force. With great schools and parks, Long Island became known for its affordable, family-oriented quality of life. After the downsizing of the defense industry and the merger of Grumman and Northrop in 1994, Long Island successfully rebounded with growth primarily in the health, education and service sectors. Hundreds of small businesses rushed in to fill the void left by their dominating predecessors, and today, 90% of Long Island businesses have five or less employees.

Looking ahead, how can Long Island ensure a sustainable economy that capitalizes on new opportunities?

CHALLENGES Long Island faces a number of critical economic challenges. We highlight five key issues:

• The quality of Long Island’s jobs are decreasing. Despite increases in total employment on Long Island, growth is occurring primarily in lower wage sectors and declining for higher salaried positions. Average wages increased by 3% on Long Island versus 7% for the U.S. between 1999 and 2007.

• The costs of doing business on Long Island are higher than elsewhere in the region and rising. Of 200 regions in the nation, a 2009 Forbes study ranked Long Island 170th for cost affordability for doing business, based on Long Island’s cost of labor, high taxes, energy, and office space.

• Long Island is becoming more dependent upon population growth to sustain its economy. Nearly 84% of Long Island’s economy today is service industries, 2/3 of which serve the local population, such as retail, health care, education and government. Between 2002 and 2007, locally-driven industries increased by 6%. However, businesses that export products or services beyond the region bring crucial, “new” dollars to Long Island. Yet these export industries declined by 0.2%.

• Long Island has experienced a decline in its younger labor force due to cohort effects and out-migration. Between 1990 and 2007, the 20-34 age cohort went from 24% of the total population to 16%, a reduction of 172,000 young people due to a combination of out-migration and demographic shifts. This loss was disproportionate compared with the state and nation. The impacts of cost of living and job availability for all Island residents, and this age group in particular, certainly warrant attention.

• Lack of preparedness of the future job force. With a substantial portion of Long Island’s skilled employees on the verge of retirement, the next generation of the job force on Long Island is not adequately skilled or prepared to respond to the challenges of a hi-tech and globally competitive economy.

PROXIMITY TO NYC Long Island’s proximity to the largest job center and largest market in the U.S. provides a competitive advantage that can be leveraged for future economic success.

• Employment opportunity. New York City will continue to provide employment opportunities for Long Islanders, including higher wage jobs. Approximately 1/3 of the Nassau workforce commuted to the City for work as of 2000.

• Supporting businesses. Long Island businesses will also continue to play a role in the larger regional economy. The question remains, however, of how Long Island defines that role and leverages its proximity to this global economic center.
**ECONOMY**

**ASSETS** Despite these challenges, we recognize Long Island’s key assets and the role they can play in the future of its economy:

- Well-educated and productive **workforce**
- Proximity to **New York City**, the country’s largest employment hub
- Premier research and academic **institutions**
- **Quality of life** and treasured **natural resources**

**VISION** Our plan emphasizes high-impact initiatives that produce gains in the near to mid term, and achieve a Long Island with:

- **Higher paying** and more **abundant jobs**
- A more **affordable, business-friendly** environment
- An industry mix focused on bringing **net new dollars** into the economy, including more export industry, new funding sources, as well as keeping Long Islanders money on Long Island
- The ability to better attract and retain **young workers**
- **Better educated** and prepared workforce

Our overall strategy is to **improve the general business climate** to allow for a wide range of businesses to succeed, while training the existing and upcoming job force to respond to the needs of the new economy. Nonetheless, we recommend **simultaneous efforts to target business growth in industry sectors** that can capitalize on Long Island’s existing assets and constraints, and raise the bar for job quality on Long Island.

**LINKAGES TO OTHER INITIATIVES** An improved Long Island economy cannot be achieved without these additional strategic initiatives, put forward in other sections of the report, including:

- Reducing the tax burden (see recommendations in the Tax & Governance section of the report)
- Measures to make energy more affordable and increase efficiency opportunities (see recommendations in the Environment & Infrastructure section)
- Transportation infrastructure improvements to increase mobility and access (see recommendations in the Environment & Infrastructure section)

**OUR PLAN FOR THE ECONOMY**

- E-1 Build consensus for a regional economic strategy and implementing entity
- E-2 Level the economic playing field for business retention and attraction incentives
- E-3 Market Long Island’s assets nationally to attract new businesses and workforce
- E-4 Create a new industry and competitive job base for innovation in home energy efficiency, distributed energy generation and renewable energy technologies
- E-5 Enhance supportive resources for high-tech start-ups
- E-6 Establish mechanisms to train workers for 21st century jobs
- E-7 Stimulate development and preservation of mixed-income workforce housing options
- E-8 Develop a “Buy Long Island First” strategy for promoting Long Island products, goods and services and establish a framework for the networking of local producers and consumers
- E-9 Build the healthcare, life sciences, green energy, brownfields remediation and homeland security industries as growing employment sources
E-1  Build consensus for a regional economic strategy and implementing entity

Develop a cohesive vision for the future of Long Island’s economy and pool resources to achieve it.

CONTEXT

There is no cohesive vision or regional strategy for defining Long Island’s economic role within the region or capitalizing on its greatest prospects. Though many reports document ideas for improving the economy, there has not been agreement to adopt an actionable regional strategy. Long Island does not currently take a regional approach to business attraction; rather, municipalities compete at a local level. No central liaison or regional economic development entity exists to provide unified marketing, promotion, and placement services, and high taxes often inhibit business attraction, retention, and development.

There are limited resources to stimulate economic activity for certain types of incentives (grants, low-interest loans, etc.), as well as marketing and business placement resources. It is also not clear on how best these resources should be allocated to produce maximum economic benefit for Long Island, as well as ensure sustainable growth.

PROPOSED ACTIONS

Establish a regional economic strategy, backed by legislative authority, and create a regional entity to facilitate implementation.

1.1 Near-term: LIRPC, the two Counties, towns, cities, IDAs, business groups, and colleges and universities should build consensus for regional participation. This should lead to a common resolution to develop a regional economic strategy, to be voted on by County, Town and City elected officials. The resolution could be structured to allow for voluntary participation in implementation, or require commitment to its implementation and funding should a designated percentage of voting entities approve the plan (see bottom of item 1.2).

1.2 Near-term: LIRPC, State and County economic development departments, IDAs, business groups and Universities and Colleges should collaborate to create a Comprehensive Economic Development Strategy (CEDS) that satisfies the requirements of the US Department of Commerce’s Economic Development Administration. A completed CEDS will open the door for funding opportunities for many entities, public and private, in the region.

1.3 Mid-term: LIRPC, the two Counties, towns, cities, IDAs, business groups, and colleges and universities should collaboratively develop and adopt the economic strategy. The strategy might include: criteria for deeming regionally-significant projects, target growth areas, measures to improve the general business climate, target industry sectors, and potential incentive mechanisms. The strategy will also need to address a process for ensuring a relative “fair share” of funding and benefits (e.g., pooling a portion of incremental commercial tax revenue for redistribution across Long Island).

The strategy will create a governance model for a collaborative entity to execute and oversee plan activities. This entity should have representation from both public and private sectors and oversee the distribution of resources and approvals to regionally-significant projects in an objective and transparent manner, based on the framework established by Strategy TG-3.

County, Town and City elected officials would vote on a common resolution to approve or disapprove of the full suite of proposals in the strategy. The structure of the resolution in 1.1 would determine the voting entities’ requirement or option to participate in implementation. In any case, communities should have an ongoing opportunity to opt into the system.

Additionally, the regional economic strategy would also set up a separate nongovernmental organization to act as a central marketing and business services liaison for Long Island (see Strategy E-3, Market Long Island’s assets nationally to attract new businesses and workforce).

1.4 Mid-term: Explore means for stimulating Long Island business through local preferences for the awarding of contracts from governments and public institutions, ensuring that high quality and low cost are also maximized in the process.
### IMPLEMENTATION

| Responsible entities | • County, Town, and City governments  
|                      | • LIRPC  
|                      | • County and local IDAs  
|                      | • Private sector partners |
| Approvals required   | • Common resolutions by both Counties, and all Towns and Cities |
| Key steps            | • Develop common resolution for Counties, Towns, and Cities to commit to regional strategy  
|                      | • Create committee with representatives from relevant jurisdictions and agencies to draft the regional strategy  
|                      | • Build support among Towns and Cities to vote in favor of plan  
|                      | • Create or designate an entity to implement and provide oversight for the plan |
| Costs                | • Minimal: for staff and consultant time to prepare and agree upon regional strategy |
| Financing structure  | • Options:  
|                      |   • Bi-county funding, either directly or through LIRPC  
|                      |   • County and local IDA funding  
|                      |   • Planning grants from State or Federal governments, or foundations |
| Challenges           | • Requires coordinated action by individual governmental entities  
|                      | • Establishing geographical “fair share” for participation while ensure maximum economic benefits of regional investments |

### CASE STUDY

**Research Triangle Regional Partnership, North Carolina**

Beginning in 1990, the Raleigh / Durham region, comprised of 13 counties, began marketing itself as a regional cluster through the Research Triangle Regional Partnership (RTRP). The RTRP serves as the driver of regional economic development strategy and fosters regional collaboration among all of the county economic development agencies and a substantial number of chambers of commerce and public entities in the region. The organization also helps to address issues that impede the region’s competitiveness in targeted industry clusters. The RTRP is governed by a Board comprised of business leaders in the region, as well as representatives from the county economic development agencies. Its operations are funded by business contributions, as well as revenues from special events and services. Key RTRP functions include:

- Crafting and promoting regional strategies for business attraction and promotion of the innovation economy  
- Marketing the region to businesses in targeted industry clusters  
- Meeting with prospective businesses  
- Providing relocation assistance to businesses  

The organization recently created a $5 million regional marketing strategy – Staying on Top – to create 100,000 jobs in 5 years, and is currently working with the 13 counties to implement the strategy in all of the jurisdictions.

### ROLE FOR LIRPC

- Convene local governments and businesses to create consensus for a regional strategy and entity  
- Advocate to foundations and private partners, and State and Federal governments, for funding for the regional economic strategy
E-2  Level the economic playing field for business retention and attraction incentives

Create a set of government-legislated and locally-supported business retention and attraction incentives that reduce tax, energy costs, and capital investment costs and thus increase competitiveness and create jobs.

CONTEXT

The cost of doing business on Long Island is higher than most regional competitors.

Long Island lacks the range and depth of business attraction and retention incentives present in the metropolitan region. Long Island currently offers incentives such as small business loan funds and gas rate savings, and the newly-enacted NYS Excelsior Jobs Program provides more flexibility for applying incentives across Long Island in the biotechnology, clean energy, financial, and manufacturing industries. But for businesses considering locations in the NYC metro area, Long Island remains at a significant disadvantage for various reasons including high taxes, regulation, energy costs, and lack of affordable housing options.

As prime competition, New Jersey and New York’s outer boroughs offer more comprehensive incentives that apply to far broader geographies. For instance, businesses relocating to NYC’s outer boroughs are eligible for the City’s Relocation & Employment Assistance Program with tax credits of $3,000 per job, as well as tax liability abatements through the Industrial & Commercial Abatement Program.

PROPOSED ACTIONS

2.1  Near-term: Nassau and Suffolk (perhaps in conjunction with other regions or counties of the State) should lobby the State to create a set of competitive incentives, which would directly address the high costs of doing business on Long Island, primarily responding to tax burdens. Such incentives may include:

• Employment tax credits and abatements of future incremental tax revenues generated by new businesses or expansion of existing businesses. In this case, there is no direct cost to the State nor any loss of existing tax base. We recommend that incentives be focused on projects with regional significance and transit-accessible target growth areas (see Strategies T-2 and T-3). Additionally, they should provide preference to “innovation economy” jobs and businesses with real location choices and directly reward new payroll and/or significant capital investment.

• Enhanced tax increment financing (TIF) legislation for regionally-significant projects that expands upon the revenue pool available for financing. LIRPC supports the proposed Schimminger-Stachowski legislation (A.2378 / S.1716), which allows school districts to opt into a proposed municipal TIF, expands the purposes for which TIF can be applied, and provides some ability to use alternate or additional revenue sources. Work with local government to streamline and coordinate Long Island’s property tax assessment system, establishing equity and efficiency in a regional assessment process.

• The Energize New York bill or similar legislation which will create a long-term economic development program through which New York manufacturers and businesses can receive competitively-priced electricity. This allocation-based program will cut energy costs, enable businesses to invest and grow, allow manufacturers to sustain and create jobs, promote improved energy efficiency, and foster significant economic returns to the State.

• Reform State brownfields law to facilitate the timely remediation of contaminated properties in the State.

2.2  Near-term: Long Island’s local governments should also undertake complementary actions that will strengthen the value of the proposed incentives, such as leveraging public sites to offer subsidized land.
### IMPLEMENTATION

| Responsible entities | • LIRPC  
| • County governments |
| Approvals required | • State legislation to apply employment credits and abatements for future incremental revenues  
| • TIF reform via passage of Schimminger-Stachowski, or comparable legislation |
| Key steps | • LIRPC to convene County governments to establish consensus on approach  
| • Analyze comparative regional incentives  
| • Determine proposed structure of incentive programs  
| • Lobby for State legislation of new incentives, potentially in partnership with other regions  
| • County economic development agencies to distribute incentive and verify performance |
| Costs | • Cost of abatement of incremental tax revenues would need to be determined |
| Financing structure | Options:  
| • Abatement or credit of future tax revenues  
| • A new, expanded TIF that also leverages revenues from participating school districts |
| Challenges | • Requires State approval  
| • Near to mid-term market weakness for new development  
| • Complex process to evaluate and validate what portion of new development and revenues are net new  
| • Multi-layered approval process for new development |

### ROLE FOR LIRPC

- Organize local governments to advocate for regionally-significant business incentives  
- Advocate to State government for necessary legislation and enhanced business incentives that can be utilized effectively on Long Island.

### CASE STUDY

**New Jersey Business Incentives**

NJ provides a wide range of State and local incentives for business attraction and retention, which has been an extremely successful resource for economic development.

- The **Economic Redevelopment and Growth Grant** provides a gap-filling incentive grant up to 75% of incremental State and/or local taxes for development projects in qualifying areas. The program leverages incremental revenues from property, parking, hotel, sales, and business income taxes.

- The **Business Employment Incentive Program** provides grants of up to 80% of the total amount of employees’ State income taxes withheld, directed at firms locating or expanding within the state. Since inception in 1996, BEIP has provided more than 275 grants worth approximately $860 million, assisting in the creation of 60,000 new jobs and leveraging more than $10 billion in total investment.

- The **Business Retention and Relocation Assistance Grant** provides employment-based grants of up to $1,500 per job for larger firms expanding at least 250 full-time jobs in the state. NJ has provided 17 BRRAGs that have supported the retention of over 12,000 jobs and more than $1 billion in total investment.

- The newly expanded **Urban Transit Hub Tax Credit Program** provides tax credits for development around urban transit hubs in 9 urban municipalities, equal to 80% to 100% of qualifying capital investments made within an 8-year period.

### LINKAGES TO OTHER INITIATIVES

- Existing incentives offered by Nassau and Suffolk County agencies and IDAs  
- LIPA, National Grid energy incentives  
- Excelsior Jobs Program  
E-3 Market Long Island’s assets nationally to attract new businesses and workforce

Leverage a unified, Island-wide marketing effort to target new business and workforce recruitment.

CONTEXT Long Island has a number of key assets that can serve to attract new businesses, including its well-educated and productive workforce, proximity to New York City, international connectivity, research and academic institutions, education system, great natural resources, and quality of life.

There currently is no one-stop-shop for business attraction on the Island. As stated in Strategy E-1, a regional economic development entity or business consortium is needed to build consensus and serve Long Island’s collective best interests by advancing strategies designed to set priorities, stimulate business, attract and retain firms and jobs, market services, and develop incentives.

Other regions market themselves aggressively to attract businesses and labor force. While Long Island has a number of active marketing campaigns, it is competing against regions that spend far more on economic development marketing. Notable examples include North Carolina’s Research Triangle Research Partnership, a collective of 13 counties, that has pioneered a successful regional approach to business marketing, and the Greater Rochester Enterprise, profiled on the following page.

PROPOSED ACTIONS

3.1 Near-term: Create a vision and set of economic priorities through a regional economic strategy, developed by the public and private sectors under Strategy E-1.

3.2 Near-term: Launch a regional marketing and business liaison through a new entity or an existing organization defined under the regional strategy. The entity should ideally be a nongovernmental organization funded by both the private and public sectors, modeled as an “honest broker” in marketing the region for business, providing information to prospective businesses for the identification of candidate sites and facilitating the support of local government incentives and streamlined approvals (provided by government entities under Strategies TG-3 and E-2).

3.3 Mid-term: Secure funding from a mix of sources, such as corporate sponsorships, County contributions, and State “I Love NY” funds. Similar to the Greater Rochester Enterprise, a privately funded model might prove effective, whereby local companies and institutions contribute as “investors” (see case study). Additionally, the Counties might seek a small additional tax on services utilized by non-Islanders (similar to the current hotel and motel tax) to fund their portion.

3.4 Mid-term: Launch a new “branding” and marketing campaign that helps to execute priorities of the region’s economic plan through campaign messaging and targeting of audiences. A consulting firm would need to be hired to design the campaign and supporting materials.

3.5 Long-term: Expand reach, both locally and abroad. For instance, a regional marketing entity could encourage partnership opportunities between Long Island and New York City organizations, including healthcare, biomedical research and educational institutions, and arts and cultural organizations, with a goal of sparking City-based investment on Long Island. Partnerships could manifest themselves (a) as Long Island satellites of City institutions, or (b) as back-office industry clusters. For example, Long Island might seek to leverage local and regional leading healthcare institutions to lead the push for transferring medical records to electronic format, a major logistical effort for which the federal government has allocated $19 billion.
**IMPLEMENTATION**

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<td>• A new regional alliance of businesses and organizations formally-organized to promote business development</td>
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<td>• A new or existing entity defined under the regional economic plan</td>
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<td>• Secure funding sources</td>
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<td>• Funding from Long Island businesses per Greater Rochester Enterprise’s “investor” board model</td>
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<td>• Funding from new and existing members (towns, businesses)</td>
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<td>• Incremental taxes levied on services utilized by non-Islanders</td>
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<td>• Private investment bonds to be repaid by tax increment financing or alternate future revenues</td>
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<td>• Requires broad private sector support</td>
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<td>• May require additional financial commitments from members</td>
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<td>• Delegating “fair share” of costs and benefits of activities</td>
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**ROLE FOR LIRPC**

- Oversee creation and launch of new marketing entity
- Market Long Island’s assets in the interim, until a regional entity is created
- Convene local governments create a regional vision and strategy for economic development (in conjunction with Strategy #1, or as a stand-alone undertaking)

**CASE STUDY**

**Greater Rochester Enterprise, New York**

The Greater Rochester Enterprise (GRE) is a regional economic development organization that supports business attraction and expansion, as well as entrepreneurship and innovation, throughout the nine-county Greater Rochester region. GRE is a public-private partnership supported by more than 120 local business, government, and non-profit organizations that work together to deliver a unified response to regional economic development opportunities.

GRE provides a singular front for the region in marketing, attracting and retaining businesses, providing a range of business liaison services that:

- Provide demographic, industry and quality of life data to businesses considering the Greater Rochester area
- Identify potential commercial sites and buildings
- Identify and align businesses with available grants, incentives and financing
- Facilitate meetings with appropriate city, county and state agencies
- Coordinate relationships with service providers such as legal, accounting, banking, etc.
- Assist with workforce and recruitment training needs

GRE has successfully created a funding and governance structure that leverages private sources. 80% of GRE’s budget comes from non-governmental investors such as local businesses, universities, not-for-profit organizations and local real estate developers and owners. 35 organizations pay a $50,000 annual contribution to sit on GRE’s investor board and advise on policy direction and service provision.

**LINKAGES TO OTHER INITIATIVES**

- County, Town and IDA business attraction activities
Long Island Sustainability Plan

E-4 Create a new industry and competitive job base for innovation in home energy efficiency, distributed energy generation and renewable energy technologies

Expand the Long Island Green Homes and Building Consortium into a pioneering Island-wide energy program for home and commercial retrofits and onsite or localized renewable energy generation.

CONTEXT

The suburban lifestyle was built on cheap energy. As energy prices increase, single-family homes – which consume 17% of the energy in the U.S. – present a major challenges and opportunities. It is estimated that retrofitting single-family homes to ENERGY STAR standards alone could reduce a home’s energy consumption by a third.

Long Island has a number of exciting initiatives underway to address this challenge; a prime example is Babylon’s Green Homes program, described on the next page. Others include:

- The Long Island Green Homes and Buildings Consortium was established in 2009 to coordinate Island-wide municipal efforts to bring retrofit funding to Long Island. In 2010, the Consortium, comprised of seven towns, will begin a three-year initiative under contract with NYSERDA to market the New York State Green Jobs–Green New York program on Long Island and ensure that at least $20 million in state funds are made available for local residential and commercial retrofits.

- LIPA’s Efficiency Long Island initiative commits $924M over 10 years, to promote energy efficiency and clean generation tech, including the largest commercial solar project in the country. The programs are funded through a proposed energy efficiency charge on customer’s bills.

- Stony Brook’s Advanced Energy Research and Technology Center was recently designated as one of 18 New York Energy Policy Institutes, a 3-year funding allocation to research strategies to improve energy efficiency and reduce carbon emissions.

Given the aggregated savings potential in homes across Long Island, an Island-wide expansion of these efforts will reduce energy bills for residents and businesses, reduce energy generation needs, improve the environment, and create thousands of jobs.

PROPOSED ACTIONS

4.1 Near-term: Collaborate with the Long Island Green Homes and Buildings Consortium to launch a wide-scale residential and commercial retrofit initiative on Long Island through statewide Green Jobs–Green New York. LIRPC will encourage coordination between all local and regional groups working on energy efficiency to support the success of this effort.

4.2 Near-term: Explore funding that might be made available through LIPA’s debt refinancing. Senator Schumer has introduced federal regulation to allow LIPA to refinance nearly $7 billion of outstanding debt at a reduced interest rate, estimated to save ratepayers $150 to $175 million each year. If feasible, LIPA could seek to take on additional debt to fund the retrofit initiative, essentially re-investing a portion of the savings from lower interest rates into energy efficiency retrofits. This would help reduce homeowners’ energy costs over time, and lessen long-term needs for additional generation.

4.3 Near-term: Make ENERGY STAR the standard for new buildings through local energy codes. As of 2009, 10 Long Island towns have increased codes to ENERGY STAR standards.

4.4 Near-term: Encourage investment in distributed energy, to reduce need for additional utility generation, transform the local market for renewable technologies, and create jobs:

- Support feed-in tariffs (FiT). FiTs require utilities to purchase all energy produced by distributed generation sources for a guaranteed period of time, incentivizing investment in renewable resources and reducing dependence on new additional generation.

- Consider additional subsidies for distributed renewable generation sources, in addition to some valuable programs currently offered by LIPA, and explore opportunities for large-scale investment through creative public-private partnerships (e.g. LIPA creates an investment fund, install systems at homes and businesses to be leased by homeowners, with returns created by lease payments and new energy generation).

4.5 Mid-term: Support an expanded engineering, consultant and contractor network to respond to the increased demand for energy audits, retrofits and renewable energy installations. The Consortium should support training programs, including partnering with local institutions to create specialized curriculum (see Strategy E-6). The New York Energy Policy Institute is expected to play a role in the development of programmatic tools and technical resources.
IMPLEMENTATION

| Responsible entities | • Long Island Green Homes and Buildings Consortium  
|                     | • LIPA |
| Approvals required  | • Town budget allocations  
|                     | • DOE approval of EECBG proposals  
|                     | • NYS Energy Research and Development Authority  
|                     | • NYS Department of Energy |
| Key steps           | • Consortium to sign contract with NYSERDA and subcontracts with Consortium members and launch aggressive program marketing  
|                     | • Design and launch training and education program  
|                     | • Lobby Towns to adopt ENERGY STAR standards in building codes  
|                     | • Lobby State legislature and Governor for passage of S2715A |
| Costs               | Costs to be determined by scale of program |
| Financing structure | • Financing for retrofits under Consortium initiative through NYSERDA loan products, with additional exploration of alternate funding including on-bill recovery and PACE programs  
|                     | • Partnership with LIPA Efficiency Long Island programs  
|                     | • Additional debt assumed through LIPA refinancing |
| Challenges          | • Requires cooperation of multiple governments  
|                     | • Allocation of program resources to ensure “fair share”  
|                     | • May require federal legislation, should LIPA funds be utilized |

CASE STUDY

**Long Island Green Homes**

Long Island Green Homes was established in July 2008 to help Babylon homeowners undertake energy-saving retrofits for their homes. The program increases awareness of potential savings opportunities and addresses the upfront costs of energy retrofits.

The program is the first in the nation to take advantage of Property Assessed Clean Energy (PACE) Bonds which allow Babylon to pay for the upfront costs of the retrofits that are then repaid by the homeowner over a 20-year period. The idea is that residents pay for the improvements over time with money saved on energy bills, plus a small 3% administrative fee. The program has been successful, yielding over 300 audits and many energy-saving retrofits.

**National Grid Deep Energy Retrofit Program in Massachusetts**

National Grid is helping Massachusetts residents cut home energy use by 50 percent or more through its Deep Energy Retrofit pilot program. By applying for incentives, customers are able to invest in a comprehensive home energy makeover.

National Grid’s Deep Energy Retrofits help homeowners take advantage of home maintenance projects by investing in long-term increased efficiency measures. Deep Energy Retrofits provide an array of incentive opportunities to help customers seal the home and increase efficiency through super-insulation, high-efficiency windows and doors, and new heating systems.

As of September 2010, two program participants have completed home retrofits in Belchertown and Belmont, Massachusetts. Additional projects are underway or soon to begin in Cohasset, Medford, Millbury, and Milton. Estimated energy savings for the completed Belchertown project alone are 55% or $2,800 per year when compared to a typical 1990s home.

LINKAGES TO OTHER INITIATIVES

• Long Island Green Homes and Building Consortium, 2009 through present  
• LIPA’s Efficiency Long Island initiative, ongoing  
• Weatherization Assistance Program, ongoing  
• ENERGY STAR Homes, ongoing  
• Various NYSERDA programs and incentives, ongoing  
• Stony Brook’s Advanced Energy Research & Technology Center, a NY Energy Policy Institute
**E-5 Enhance supportive resources for high-tech start-ups**

*Leverage partnerships with universities, colleges, hospitals, and research institutions, and facilitate key resources to researchers and start-up businesses, to encourage growth of home-grown technology businesses.*

**CONTEXT**
Long Island was once in the forefront of the tech sector, with Grumman at the forefront of innovation. Long Island still maintains many of the attributes necessary for tech success in the 21st century, including state-of-the-art educational institutions and laboratories, established research and business incubators, a well-educated workforce, and proximity to NYC investors. Long Island, however, faces challenges to growing the tech sector:

- **Declining share of NYSTAR funding** as a percentage of dollars invested throughout New York State.
- **Declining private venture capital**, both as total dollars invested and as a percentage of total U.S. investment, limiting the number and growth of Long Island start-ups.
- **A need to revive regionalism**, given the 1998 dissolution of the Island’s primary biotechnology transfer resource, the Long Island Research Institute (LIRI) and its affiliate, the Long Island Venture Fund, due to withdrawal of State funds.
- **Ineffective technological transfers** from academic and research institutions to enable start up of hi-tech companies.
- **Lack of return mechanisms** to the parent institutions and incubators who, in many cases, have no equity stake in commercialization and do not generate returns from their investments.
- **Competing regions dedicate more public and private resources to these areas**. For example, New York City recently created a $2 million “NYC Seed” fund, as a partnership of 6 city agencies and organizations, to annually provide grants of up to $200,000 to 10 entrepreneurs for development of their technological advances.

**PROPOSED ACTIONS**

**5.1 Near-term:** Coordinate with incubators and universities to create a toolkit and technical assistance to support institutions’ implementation of effective mechanisms for long-term sustainable funding through re-capture of benefits from successful technology commercialization. Institutions can benefit from access to a set of best practices in structuring re-capture agreements and in overcoming researchers’ reluctance to share equity in their discoveries and inventions. Bring together academic and research institutions, economic development officials and venture capitalist industry to develop an effective strategy for development of spin-off of start-up companies from such institutions. Funds captured from these mechanisms could provide a source on-going revenue that reduces the need for public support and/or underwrite future grants for research and development.

**5.2 Mid-term:** Create operational capacity within a regional entity, like the defunct LIRI, to (1) serve as a centralized resource for commercialization of Long Island’s biotech, healthcare, energy and technology research, fusing existing resources and knowledge; (2) act as an advocate and conduit for funding; (3) provide targeted technical assistance to start-ups and small businesses and with a regional approach, seek to increase Long Island’s share of Federal, State, and private funding, such as the Small Business Innovation Research grants through the Small Business Administration; and (4) foster collaboration among key players, which may include networking events, alumni “mentoring” programs, and business resource centers. The regional entity would coordinate closely with Long Island’s regional business marketing entity to market for new investment.

**5.3 Mid-term:** Support creation of a “fund of funds” to fill pre-seed and seed funding gaps. Long Island technology start-ups lack the ready access to funding to fill the investment gap between public or institutional support and private venture capital investment available through entities such as the Long Island Angel Fund, which is prevalent in more developed technology clusters, such as Silicon Valley. Long Island should encourage the creation of an angel fund that could leverage private, institutional, and Federal, State, and local funding. The fund should be structured as a private equity fund to allow for a recapture of grants and an equity stake in the commercialization of products.
IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>Create regional entity for marketing and technical assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Create “fund of funds” to fill pre-seed and seed funding gaps</td>
</tr>
<tr>
<td></td>
<td>• Former LIRI members</td>
</tr>
<tr>
<td></td>
<td>• County and local IDAs</td>
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<tr>
<td></td>
<td>• Technology industry organizations</td>
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<td></td>
<td>• R&amp;D institutions</td>
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<tr>
<td></td>
<td>• Private investors</td>
</tr>
<tr>
<td></td>
<td>• Former LIRI members</td>
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<tr>
<td></td>
<td>• Long Island Angel Network members</td>
</tr>
<tr>
<td></td>
<td>• County and local IDAs</td>
</tr>
<tr>
<td></td>
<td>• R&amp;D institutions</td>
</tr>
<tr>
<td>Approvals required</td>
<td>State legislation to yield a larger proportion of both State and Federal R&amp;D funds for Long Island</td>
</tr>
<tr>
<td>Key steps</td>
<td>State legislation to create fund</td>
</tr>
<tr>
<td></td>
<td>• Enhance existing capacity for support</td>
</tr>
<tr>
<td></td>
<td>• Create toolkit of strategies for value re-capture by institutions</td>
</tr>
<tr>
<td></td>
<td>• Create new strategy for marketing and networking, in coordination with marketing entity identified in Strategy E-3</td>
</tr>
<tr>
<td></td>
<td>• Market and advocate for on-going investment in Long Island’s high-tech sectors at the State and Federal levels</td>
</tr>
<tr>
<td></td>
<td>• Create task force on venture capital funding</td>
</tr>
<tr>
<td></td>
<td>• Identify private and public partners</td>
</tr>
<tr>
<td></td>
<td>• Create funding structure and business plan, including funding priorities and primary implementing entity</td>
</tr>
<tr>
<td></td>
<td>• Identify champions and early investors</td>
</tr>
<tr>
<td></td>
<td>• Market fund to potential grant recipients</td>
</tr>
<tr>
<td>Costs</td>
<td>To be determined</td>
</tr>
<tr>
<td></td>
<td>Size of fund and costs to the public sector to be determined by business plan.</td>
</tr>
<tr>
<td>Financing structure</td>
<td>In exchange for seed or pre-seed capital funding, the investment fund should acquire an equity stake in start-up businesses, aiming for self-sustaining operations in the long-run</td>
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<tr>
<td></td>
<td>Options include:</td>
</tr>
<tr>
<td></td>
<td>• Membership fees</td>
</tr>
<tr>
<td></td>
<td>• Fees for events and conferences</td>
</tr>
<tr>
<td></td>
<td>• Private business investment</td>
</tr>
<tr>
<td></td>
<td>• State and Federal funding</td>
</tr>
<tr>
<td>Challenges</td>
<td>Current State budget deficit</td>
</tr>
<tr>
<td></td>
<td>Long pattern of Long Island’s relatively low share of State operating funds for tech R&amp;D</td>
</tr>
<tr>
<td></td>
<td>Prioritizing limited funding to selected institutions, among Long Island’s assets</td>
</tr>
<tr>
<td></td>
<td>Attracting private investment capital given current economic conditions and unknown outlook over medium-term</td>
</tr>
<tr>
<td></td>
<td>State approval and funding</td>
</tr>
<tr>
<td></td>
<td>Attracting private investment for inventions in pre-prototype phase</td>
</tr>
</tbody>
</table>

CASE STUDY

Massachusetts Life Sciences Investment Funds

In 2008, Massachusetts dedicated $1 billion over 10 years to invest in the life sciences industry. The funds are administered by the Massachusetts Life Sciences Center (MLSC), a quasi-public agency created by the legislature. The Board of the MLSC approves qualified life sciences companies and all investments and tax credit allocations.

The initiative will be funded through bond issues, tax credits, and General Fund spending. $500 million will be allocated to the Life Sciences Investment Fund for a wide range of targeted economic development activities, including financing for new facilities, matching grants to universities and research institutions, workforce training grants, and funding for development and marketing of higher education programs. Another $250 million is set aside for research and education grants, and $250 million for tax credits to certified life sciences companies.

The investments are aimed at building upon the strength of prominent education and medical institutions in Boston and Cambridge, while increasing the presence of life sciences industries throughout the Commonwealth. Early results suggest that the initiative has leveraged $8 in private investment for every $1 in public investment and created 950 jobs.

LINKAGES TO OTHER INITIATIVES

- Stony Brook University Strategic Plan, on-going. Stony Brook high-tech resources, incl. NYS Center for Advanced Technology, Long Island High Technology Incubator, NYS Small Business Development Center, Incubator at Calverton, Stony Brook Software Incubator, CEWIT, SPIR, Office of Technology Licensing and Industry Relations, Center for Emerging Technologies
- Long Island Angel Network, LIFT, the Long Island Venture Fund, and the past Long Island Research Institute
- LI Index 2008, 2009
- Innovate Long Island, Long Island Association, 2006
- Coming out ahead, Long Island Association, 2008-2009

ROLE FOR LIRPC

- Advocate for private and public support for a pre-seed capital fund for Long Island businesses, and call upon private partners to show early and sustaining support
E-6 Establish mechanisms to train workers for 21st century jobs

Partner with schools, BOCES, universities, colleges, businesses, labor unions, trade councils and other industry groups to create training opportunities that are responsive to the needs of priority high-growth Long Island industries.

CONTEXT Long Island faces a challenge to maintain a highly educated and productive workforce that is competitive for the needs of businesses, today and tomorrow. Most businesses cite a well-educated and productive workforce as the number one factor in location decisions. Business groups acknowledge that, with the aging of baby boomers and the ongoing decline of the 20-35 year old labor force, Long Island is in danger of losing its longstanding workforce prominence. Moreover, industry organizations, such as the Long Island Forum for Technology (LIFT), have found that Long Island is producing fewer graduates in math and the sciences than other regions. Long Island must ensure that its existing and future workforce is sufficiently trained for high-priority industries in order to continue to attract and retain businesses.

Recent job growth has been strongest in relatively low wage industry sectors (see charts, right).

Colleges and universities are already forming beneficial ad hoc partnerships, such as Stony Brook’s coordination with the former founders of Cheyenne Software, Motorola, and other companies to reach out to middle school and high school students about the opportunities available with the development of math and science skill sets. Centralizing these functions can build upon these partnerships to attract new businesses and retain businesses struggling with workforce training.

PROPOSED ACTIONS

6.1 Near-term: Create a task force to assess skills needed for high-priority industries.
• Determine high-growth industries. Based on the regional economic strategy developed under Strategy E-1, Nassau and Suffolk should determine high-priority industries that should be targeted for growth off workforce skills on Long Island. Criteria for selection should include growth projections by industry, quality of jobs, and alignment with Long Island’s assets and goals. For example, high-tech industries identified in Strategy E-5 may be appropriate targets.
• Assess workforce skill gaps. The working group should further consult with industry associations and businesses in identified target industries to establish clear training and education needs and identify gaps in skills and education currently being provided to the workforce. The assessment should build upon analysis and consultations completed to date, including a recent assessment of the needs of high-tech sectors completed by LIFT.

6.2 Near-term: Call together a summit of school officials, academic & research institutions and private industry to develop a strategy for improving the K-12 science and mathematics competitiveness in a global economy.

6.3 Mid-term: Create a partnership with a Long Island college or university – most likely one or both of Long Island’s community colleges – and a business or industry group in one or more high-priority industries to provide specialized post-secondary training. The Counties should appoint a liaison between institutions and businesses to align interests in designing a curriculum. This capability could be housed in regional workforce training entities created by the Workforce Investment Act (WIA). Curriculum and length of study should be defined to be both robust in general education and responsive to specific industry needs, and could be linked to students pursuing an alternative 12th grade year. Businesses in the industry should commit to providing hands-on training and internships, and prioritizing hiring from programs in those institutions. Funding should come from both private industry and public sources, and potential federal funding sources should be explored, including WIA programs and newer programs, such as the Green Jobs Innovation Fund.

6.4 Mid-term: Identify mechanisms to provide higher quality math, science, and technical skill starting in middle school and high school. The State Board of Regents and local school districts and universities should identify ways to improve education in these areas. Mechanisms could include elimination of traditional grade 12, introduction of magnet schools for specialized training, or other proven successful vehicles for workforce preparation beginning in secondary school.
## IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>Create task force to assess skills needed for high-priority industries</th>
<th>Create one or more career training programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>County and local IDAs</td>
<td>• County and local IDAs</td>
<td>• College/university partner(s)</td>
</tr>
<tr>
<td>Labor unions</td>
<td>• Labor unions</td>
<td>• Industry partner(s)</td>
</tr>
<tr>
<td>LIRPC</td>
<td>• LIRPC</td>
<td>• Labor unions</td>
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<tr>
<td>BOCES</td>
<td>• BOCES</td>
<td>• County and local IDAs</td>
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<table>
<thead>
<tr>
<th>Approvals required</th>
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<tbody>
<tr>
<td>• No official approvals needed</td>
<td>• County approval for funding for liaison office</td>
<td>• County approval for funding for liaison office</td>
</tr>
<tr>
<td></td>
<td>• College/university approval; if public institution, may require State approval</td>
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<table>
<thead>
<tr>
<th>Key steps</th>
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</thead>
<tbody>
<tr>
<td>• LIRPC to convene County and local IDAs, Long Island Association, and labor unions to establish goals and undertake study for selecting high-priority industries and skill gaps</td>
<td>• Identify industry, labor union, and college/university partners</td>
<td>• Identify industry, labor union, and college/university partners</td>
</tr>
<tr>
<td></td>
<td>• LIRPC or consultant to engage businesses and industry groups in high-priority sectors to identify training and education needs</td>
<td>• Create funding plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Convene institutional-industry working group to plan curriculum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish size of program based on institutional capacity and industry needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Market career academy to new workforce entrants, job seekers, and businesses</td>
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<thead>
<tr>
<th>Costs</th>
<th></th>
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<tbody>
<tr>
<td>• Minimal; limited primarily to resources to hire consultant or research institute</td>
<td>• Include program administrative, instruction, space, and equipment costs</td>
<td></td>
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<table>
<thead>
<tr>
<th>Financing structure</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Bi-County funding</td>
<td>• Public-private on-going funding agreement</td>
<td></td>
</tr>
<tr>
<td>• Explore Federal or State funding sources for workforce investment</td>
<td>• Direct County and institutional costs should be offset with:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Private industry contributions</td>
<td></td>
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<tr>
<td></td>
<td>• State and Federal grants</td>
<td></td>
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<tr>
<td></td>
<td>• Student fees</td>
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<tr>
<th>Challenges</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Requires consensus on high-priority industry attraction between Counties, which might have different goals and objectives for business attraction</td>
<td>• Requires multi-stakeholder coordination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• May require businesses to make internship or hiring commitments</td>
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</tr>
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</table>

## CASE STUDY

**California Centers of Excellence**

California funds ten Centers of Excellence, which coordinate communication between the State’s community colleges and major targeted industries in the State. For example, the Centers for Excellence partnered with digital media research institutions to conduct a survey of executives of video and computer game companies to identify future workforce needs of the sector. Based on the results of the survey, which found that the sector would grow by 21% in the following 12 months and require an additional 4,000-7,000 workers, the Centers of Excellence coordinated a forum between the industry and community college administrators to discuss curricular needs of the industry. As a result of the forum, 18 colleges across the State have adapted course curricula or added tracks to existing courses of study to respond to workforce needs in this growing industry and provide career-oriented education tracks for their students.

## LINKAGES TO OTHER INITIATIVES

- Connect LI: Regional Economic Transformation Strategies, 2009
- Initiatives such as LIFT’s Industry Outreach
- Select high-tech initiatives referenced under E-5
- Long Island Index 2008, 2009
- Innovate Long Island: A new plan for the economic development of the Long Island region, Long Island Association, 2006
- Coming out ahead: How to make Long Island a better place, Long Island Association, 2008-2009
- Long Island Regional Strategic Economic Development Plan, Long Island Regional Planning Board, November 1993

## ROLE FOR LIRPC

- Convene task force to identify high-priority industries for Long Island’s economy (in conjunction with strategies E-3, E-4, E-5 and E-9 or as a stand-alone undertaking)
- Facilitate funding and hiring of a consultant for study of job-training needs in high-priority industries
E-7 Stimulate development and preservation of mixed-income workforce housing options

Develop a regional policy framework that maintains a variety of housing types and prices, while advancing development of rental and multi-unit housing as an essential ingredient for retaining a strong, diverse workforce and increasing our tax base.

CONTEXT Long Island’s communities were once an affordable, attractive alternative for families seeking a suburban lifestyle. Despite the current pause in price escalation, housing on Long Island has become significantly less attainable in comparison to times past and current expectations. From 2000 to 2007, the proportion of Long Islanders that spent more than 35% of their income on housing costs increased from one-quarter to more than a third of households.

Creating mixed-income development can mitigate the high-cost of living for some, and increase supply to everyone’s benefit. However, though the State mandate is to set aside 10% of new multi-family construction for workforce housing, its inclusion is decided at the local level, and is not uniform across jurisdictions. Moreover, there are long-established patterns of racial and income segregation on Long Island, due to past practices such as restrictive deed covenants and other historical patterns.

New construction is only part of the solution. Older neighborhoods near railroad stations are the primary setting for less costly housing on Long Island. Transit-supported development (TSD) and downtown enhancements can inadvertently cause displacement. Strategies are needed to secure existing lower-cost housing as much as to create new mixed-income and workforce housing developments.

PROPOSED ACTIONS

The LIRPC should take a leadership role in creating a regional framework for workforce housing policy.

7.1 Near-term: LIRPC should convene a housing task force to build Island-wide consensus on a set of regional workforce housing goals and fair housing plan, and draft a resource guide for local governments. The goals could be incorporated into the decision-making by Long Island governments with planning approval authority. Create a fair housing toolkit that would identify best practices and policy options that fit the variety of Long Island’s communities, and let localities decide what tools to employ.

7.2 Mid-term: Create a housing trust fund to ensure the preservation and development of affordable housing. Introduction of an aggressive funding mechanism for affordable housing can demonstrate Long Island’s commitment to fair housing and help forestall a challenge similar to the those now raised Westchester and previously in NJ. Options for funding the housing trust fund include: payments in lieu of on-site affordable housing development, CDBG funding, impact fees, and mitigation fees including for commercial development. Funds may also be raised through fees in exchange for density bonuses for developers in target downtown locations. These funds could be utilized to: (1) develop affordable housing units; (2) address foreclosures through counseling, aiding access to existing programs and other technical assistance; (3) create a property trust fund to acquire land for development of affordable housing; (4) provide low-interest loans or grants to affordable housing developers; (5) provide mortgages that reward transit-supported locations; (6) make energy efficiency loans or grants to qualifying homeowners; and (7) leverage housing trust fund projects, grants, and loans provided through HUD, CDBG, and HOME programs as well as New York State DHCR/nyhomes financing.

7.3 Mid-term: Offer streamlined approvals processes in exchange for inclusion of affordable housing in new developments. Localities could offer streamlined approvals (as proposed in Strategy TG-3) in conjunction with incentives and financing, for developers who agree to provide affordable housing units within new mixed-income developments.

1 Source: Long Island Index, 2009
### IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>Create housing trust fund for workforce housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIRPC, County, Town, Village, and Hamlet governments with planning approval authorities</td>
<td>LIRPC, County, City, Town, and Village governments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approvals required</th>
<th>Key steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>No official approvals needed</td>
<td>LIRPC to convene government entities with planning approval authorities to establish discussion forum</td>
</tr>
<tr>
<td>County, Town, and City buy-in desired</td>
<td>LIRPC to undertake study of best practices in workforce housing policy and appropriate regional targets for production</td>
</tr>
<tr>
<td>County, City, Town, and Village approvals likely required</td>
<td>Forum establishes a set of goals and best practices on which they can agree</td>
</tr>
<tr>
<td>County, City, Town, and Village governments</td>
<td>Publish regional goals and resource guide for implementing goals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th>Financing structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relatively minimal, and would include modest consulting costs for regional facilitation and resource guide production</td>
<td>Public funding for study and toolkit</td>
</tr>
<tr>
<td>Minimal</td>
<td>Options:</td>
</tr>
<tr>
<td></td>
<td>• Affordable housing fees</td>
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<td></td>
<td>• CDBG funding</td>
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<td></td>
<td>• Impact fees</td>
</tr>
<tr>
<td></td>
<td>• Mitigation fees from SEQR process</td>
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<td></td>
<td>• Expanded TIF</td>
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<table>
<thead>
<tr>
<th>Challenges</th>
<th>Requires buy-in by multiple governmental units with planning approval authority to be useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depends upon future action by local governments to implement and incorporate goals and approve new policy</td>
<td>Requires coordinated planning resolutions by multiple jurisdictions</td>
</tr>
<tr>
<td>Challenges associated with establishing appropriate production targets by planning entity</td>
<td>Requires buy-in by multiple government units with planning approval authority to be useful</td>
</tr>
</tbody>
</table>

### CASE STUDY

**Chicago Metropolitan Mayors Caucus’ Housing Endorsement Criteria, Illinois**

The Chicago Metropolitan Mayors Caucus (MMC), a collaboration of more than 270 mayors of local municipalities representing more than 8 million residents, created and approved a set of Housing Endorsement Criteria in 2002, outline a set of preferences for ‘sensible’ and ‘attainable’ development.

The MMC has since provided technical support to municipalities to incorporate the Criteria within their development review processes and incentives. The MMC produced a set of documents that provide a toolkit for municipalities to assess their housing needs, design housing policies, and utilize a range of funding mechanisms – all in line with the Criteria. The organization also produced more than 50 case studies to help local municipalities promote development that is ‘sensible and attainable’ under the Housing Endorsement Criteria.

### LINKAGES TO OTHER INITIATIVES

- Long Island Profile: A Summary of Demographic, Economic, and Environmental Trends, Regional Plan Association, 2009
- Organizations such as Long Island Housing Partnership, Long Island Fair Housing, and YIMBY Long Island
- Community Development Corporation of Long Island

### ROLE FOR LIRPC

- Convene workforce housing task force
- Organize local governments to achieve consensus on funding mechanisms for workforce housing trust fund
- Educate populace on importance of affordable and diverse housing options
Develop a “Buy Long Island First” strategy for promoting Long Island products, goods and services and establish a framework for the networking of local producers and consumers

**CONTEXT**
In many ways, Long Island is an untapped source of shops, services, manufacturers, destinations, outdoor spaces, farms, and countless other amenities all accessible via car, train, bus or ferry. With proper coordination, these assets can be collectively marketed both on- and off-Island through a comprehensive “Buy Long Island First” campaign designed to promote local businesses and services and raise awareness among consumers. This will better position Long Island-based businesses to compete with larger chains or off-Island competitors. The financial gains achieved through this initiative will allow local businesses to support other businesses, creating a multiplier effect that will strengthen the local economy. This, in turn, can help to foster a sense of local pride among both businesses and consumers.

With a population of nearly 3 million people, Long Island represents a formidable market with many business, contracting and sales opportunities. A program that supports local businesses and destinations would work to protect and enhance the quality of life on Long Island by facilitating business, creating opportunity, reducing congestion, preserving farmland and open space, and allowing better access to local products and services.

Furthermore, a “Buy Long Island First” campaign would help to advance Strategy L-3 by helping Long Islanders, especially those in underserved communities, gain access to fresh food from on-Island growers and vendors. “Buy Long Island First” could partner with the Long Island Farm Bureau to help brand and promote Island-grown food, inform Islanders of the value of locally-grown food, and foster relationships between farms, vendors, and the public.

**PROPOSED ACTIONS**

8.1 **Near-Term:** Assess the benefits of best “buy local” practices and communicate those to Long Island businesses, chambers of commerce, and business development organizations.

8.2 **Near-Term:** Work with chambers of commerce and business development organizations to start identifying and inventorying local businesses for inclusion in the “Buy Long Island First” program. Categorize the list by industry for convenient reference. The list would be used as the principal clearinghouse for all other businesses to refer to when looking to connect with each other and procure local goods and services.

8.3 **Near-Term:** Partner with the Long Island Farm Bureau to involve Island farms in the campaign. Advance equitable access to locally-grown food.

8.4 **Near-Term:** Convene a working group of interested businesses and chambers to act as charter “Buy Long Island First” members. Utilize the group to begin developing marketing and other promotional strategies that can be implemented. Use seed funding from member organizations to brand the campaign with a logo and website.

8.5 **Near-Term:** Ensure that all member businesses are aware of and participate in ShareLI.com’s collective buying/selling program which markets products and services at discounted rates once a set number of buyers opt-in. Partner with ShareLI.com to create buying and selling opportunities for member businesses.

8.6 **Mid-Term:** Using Nassau County’s “Island Next Door” campaign as a model, incorporate local tourism initiatives into the greater “Buy Long Island First” campaign and market them to a broader region including the Tri-State area, New England, the Mid-Atlantic region and southeastern Canada.

8.7 **Mid-Term:** Build the program out over time with additional members, a more robust website, and refined promotional strategies such as professional branding and regional and national advertising.
**ECONOMY**

**Jersey Fresh**
Jersey Fresh is an advertising and promotional program developed in 1983 to help farmers inform consumers about the availability and variety of fruits and vegetables grown in New Jersey. The program has been successful in raising awareness and has become a benchmark for other states to initiate their own state-grown agricultural marketing programs.

Initially begun as a radio advertising campaign, the Jersey Fresh program has used billboards, television and print ads, and point-of-purchase materials to remind consumers about the availability of locally grown products. The Jersey Fresh message has reached nearly every state in the nation and in countries abroad, with special emphasis on consumers along the Eastern Seaboard from Richmond, Va., to Montreal, Quebec.

**Portland Buy Local**
The highly successful “Portland Buy Local” campaign in Portland, Maine is a consortium of over 250 businesses whose mission is to support locally-owned, independent businesses, maintain community character, provide opportunities for entrepreneurs, build economic strength, and prevent the displacement of community-based businesses by chains.

The campaign focuses on:
- informing citizens of the values provided by community-based businesses and their importance to the local economy;
- group branding, promotion and advertising to elevate the profile of community-based businesses; and
- creating strong relationships with local government and the media to inform local decision-making and give a voice to the locally-owned independent business community.

**ROLE FOR THE LIRPC**
- Convene working group
- Develop list of groups, organizations, businesses, etc. that are already buying Long Island goods and could form the foundation of a “Buy Long Island First” campaign

**LINKAGES TO OTHER INITIATIVES**
- Long Island Farm Bureau “Grown on Long Island”
- ShareLI.com
- New York First: www.nyfirst.ny.gov
- Nassau County’s “Island Next Door” promotions
- Jersey Fresh
- Portland Buy Local, Portland, ME
- Yankee Foliage – tourism promotion for New England region

**IMPLEMENTATION**

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>Convene working group</th>
<th>Establish “Buy Long Island First” program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• LIRPC</td>
<td>• Same</td>
</tr>
<tr>
<td></td>
<td>• Local businesses and chambers of commerce</td>
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<th>Approvals required</th>
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<td>• No official approvals needed</td>
<td>• Collaborate with businesses to agree on best practices for marketing, branding, and promotional methods</td>
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<tr>
<td>• Buy-in from businesses and local chambers of commerce</td>
<td>• More substantial funding required from member businesses if hiring marketing firm</td>
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<table>
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<th>Key steps</th>
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<td>• LIRPC to undertake study of best practices</td>
<td>• More substantial funding required from member businesses if hiring marketing firm</td>
<td></td>
</tr>
<tr>
<td>• LIRPC to convene working group of interested stakeholders</td>
<td>• Requires agreement among all member businesses as to how best to design program</td>
<td></td>
</tr>
<tr>
<td>• Raise necessary funds from member businesses</td>
<td>• Requires additional funding if working with a marketing firm</td>
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<td>• Relatively minimal; could be implemented at first with modest seed funding from charter members</td>
<td>• Requires agreement among all member businesses as to how best to design program</td>
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<tr>
<th>Financing structure</th>
<th>Convene working group</th>
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</thead>
<tbody>
<tr>
<td>• Contributions/fees from member businesses</td>
<td>• Requires agreement among all member businesses as to how best to design program</td>
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<tr>
<td>• Public or foundation funding</td>
<td>• Requires additional funding if working with a marketing firm</td>
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<table>
<thead>
<tr>
<th>Challenges</th>
<th>Convene working group</th>
<th>Establish “Buy Long Island First” program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requires buy-in by multiple businesses and/or business development organizations and/or chambers of commerce to be useful</td>
<td>• Requires agreement among all member businesses as to how best to design program</td>
<td></td>
</tr>
<tr>
<td>• Requires additional funding if working with a marketing firm</td>
<td>• Requires additional funding if working with a marketing firm</td>
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</table>
E-9 Build the healthcare, life sciences, green energy, brownfields remediation and homeland security industries as growing employment sources

Federal, state and local policy makers should look for ways to boost the healthcare, life sciences, green energy, brownfields remediation, and homeland security industries as economic forces, even as they seek to contain costs. Home to renowned institutions and organizations, Long Island is well-poised to develop robust employment sectors in these growing industries.

CONTEXT

Long Island leaders recognize the importance of the growing healthcare, life sciences, green energy and homeland security markets as potential Long Island job growth sectors. At present, healthcare-related industries comprise 10% of the Island’s total workforce. North Shore-LIJ Health Systems, the region’s largest private employer, Nassau University Medical Center, its largest “safety net” hospital, and Stony Brook University Medical Center, the region’s leading state-run facility, along with various other providers, institutions and laboratories constitute major employment sources. As Long Islanders grow older and more ethnically diverse, caregivers require better training in more specialized areas.

Given area energy demand and the Island’s proximity to New York City, major airports, and highways, the green energy, brownfields remediation, and homeland security sectors also represent potentially strong employment sources. Many reports indicate that both are projected to grow for years; homeland security jobs alone have grown from 70,000 jobs in 2000 to 180,000 jobs in 2009 representing 157% growth\(^1\). Furthermore, both sectors provide opportunities for a wide variety of trades, including civil, electrical, and environmental engineers, designers, computer-aided drafters, law enforcement officials, and security guards.

PROPOSED ACTIONS

9.1 Near-term: State and federal lawmakers must ensure that the Stony Brook and Hofstra North Shore-LIJ Schools of Medicine have the resources needed to train high-level health care professionals who will remain on Long Island and focus on its specific problems and to become centers of research, along with Cold Spring Harbor Laboratory and the North Shore-LIJ Feinstein Institute, that can solve the region’s problems.

9.2 Near-term: Leverage the Advanced Energy Research and Technology Center’s (AERTC) Advanced Energy Conference to discuss strategies for the incubation of the green energy sector on Long Island.

9.3 Near-term: Work with state and local government to facilitate remediation of brownfields in downtowns and transit-supported communities.

9.4 Mid-term: Work with Brookhaven National Laboratory’s Energy Sciences & Technology (EST) Department to address ways to make Long Island a leader in renewable energy and energy and infrastructure security.

9.5 Mid-term: Work with local schools, colleges and universities to promote STEM (science, technology, engineering, math) professions.

9.6 Mid-term: As part of a broader initiative, education officials should redesign high school, BOCES, and college and university curricula, including better use of Grade 12, to offer basic training to students in the healthcare, life sciences, green energy, brownfields remediation, and homeland security industries.

\(^1\) Source: U.S. Office of Personnel Management
**IMPLEMENTATION**

| Responsible entities | • Major health care organizations and educational institutions  
|                     | • Unions  
|                     | • State and federal lawmakers  
|                     | • State and local school authorities  
|                     | • Long Island colleges and universities  
|                     | • MTA  
|                     | • Long Island business organizations (LIFT, LIA, LISTNET, etc.)  
| Approvals required  | • State Regents and local districts  
|                     | • State health department  
|                     | • Federal and State law enforcement agencies  
| Key steps           | • Bringing together stakeholders  
| Costs               | • Funding various training and development programs  
|                     | • Additional public transportation costs  
| Financing structure | • To be determined  
| Challenges          | • Forging cooperation between labor and management  
|                     | • Adding housing and transportation options  

**CASE STUDY**

**California “Allied Health” Workforce Initiative – Health care as an employment source**

Even in the midst of fiscal crisis the State of California has created a unique public-private partnership aimed at reducing critical health care worker shortages. The California partnership, announced in 2009, is being led by the State Labor and Workforce Development Agency, the state public university system, the California Hospital Association and its member teaching hospitals. The initiative kicked off in Fall 2009 in large community colleges, and is focused on generating funding and innovation for training in the “allied health” workforce, which includes lab technicians, dental hygienists, physical assistants and others. The $32 million partnership is receiving half its funding from Federal Stimulus and grant programs, and the other half from matching funds or in-kind contributions.

The partnership has the explicit goal of training professionals in the medical fields in which the State has identified forthcoming shortages, and has the added advantage of a diversity of funding streams to ensure commitment and stability. The initiative will train 5,000 students over three years in the State’s community colleges and technical schools.

This collaboration could easily be replicated on a large regional scale such as in Long Island. The Island already is home to the higher education institutions necessary to train allied health workers, or any other subset of the medical field projected to be in shortage in the next 5-10 years. As in California, a diverse mix of State and Federal public funding sources, including Federal Stimulus grants, could supplement modest, private, in-kind contributions and local government support. This model could also be used to create a unique new training or educational entity as described in this initiative.

**LINKAGES TO OTHER INITIATIVES**

- Molloy College nursing PhD program
- BOCES allied health training programs
- Morrelly Homeland Security Center
- Long Island University's Homeland Security Management Institute
- Community college and SUNY workforce development programs
- NYIT Green Energy Program

**ROLE FOR LIRPC**

- Convener, promoter, educator
ENVIRONMENT & INFRASTRUCTURE
ENVIRONMENT & INFRASTRUCTURE

CONTEXT Infrastructure provides the ultimate foundation for economic development and prosperity. Cities across the world — including London, Vancouver, New York, Denver, and Portland, Oregon — have demonstrated that rebuilding and reorienting infrastructure toward sustainable systems can be a catalyst for positive change and sustained economic growth. In these cities, infrastructure has been the foundation of new standards for livable communities. During the last century, Long Island served as the model for the ideals and benefits of the suburban lifestyle. Today, however, rethinking infrastructure and society is necessary to position Long Island at the forefront of the 21st century economy. Through LI 2035, it has the opportunity to again serve as an example to the work of a new era of sustainable living, characterized by a high quality of life, protection of our natural resources and supported by sustainable infrastructure.

Long Island enjoys a well-connected roadway and highway system, some of the highest quality drinking water in the world, over 400 miles of shoreline, and a commuter rail service that provides good access to New York City. While providing a solid foundation, much of the infrastructure serving the needs of Long Island communities has become outdated and is in need of repair. Decaying infrastructure serves as a barrier to progress. Of particular concern is disproportionately high resource consumption, carbon-intensive energy sources, and waste generation rates that are some of the highest in the nation. Chronic traffic congestion is constant – the result of limited access to mass transit, low-density development and inadequate connections off Long Island and public infrastructure. These challenges, while daunting, provide a unique opportunity for a positive change in direction.

Investing in infrastructure upgrades and expansions as well as recalibrating resource use and reuse can provide Long Island the opportunity to lead regions across the country in a new paradigm for sustainable suburban communities. Long Island can become a leader for other regions by increasing coordination between agencies and building on its strengths, including tremendous natural resources, the LIRR services into New York City and initiatives such as the waste-to-energy programs.

ASSETS

• Abundant and inexpensive water supply from the aquifer
• Reliable power generation and distribution
• Dominant single family housing supply and significant commercial development provide greater opportunity to engage in energy retrofits and decentralized renewable energy programs
• Long Island Railroad provides frequent commuter service to NYC
• Long Island’s highway and arterial grid, while congested at times, provides quality access to all points of the Island
• Beaches, marine resources, parks and open space

CHALLENGES

• Water: Potential threats of aquifer contamination and over-pumping
• Sewer: Lack of strategic planning and investment. Inadequate sewer provision in Suffolk County
• Energy: Very high rates, and limited access to wider supply including renewables and natural gas
• Waste: Above average waste generation, high cost and impact of hauling waste off-Island, and low recycling rates
• Global warming: Increasing pressure to reduce reliance on carbon and vulnerability to sea level rise
• Transportation: Lack of viable alternatives to the automobile, single-purpose LIRR, congested roadways, lack of financing for transportation and transit projects, limited connections between Long Island and the rest of the region
• Freight: Lack of freight capacity on rail and roads
ENVIRONMENT & INFRASTRUCTURE

VISION
The Environment & Infrastructure plan emphasizes initiatives which:

- **Protect Long Island’s aquifer**
- **Reposition transit** for intra-Island travel & NYC commuter service
- **Accommodate new growth sustainably through pedestrian and transit-supported development** which can reinforce the role of transit and lead the way to walkable and bicycle-friendly neighborhoods
- **Consolidate infrastructure providers** in waste and water
- Seek opportunities to **diversify the energy supply** & establish programs for renewable energy supply
- Provide increasing emphasis on **conservation of resources**
- **Secure significant financing for major improvements** that enhance Long Island’s connections to the greater region’s transportation infrastructure.

LINKAGES TO OTHER INITIATIVES
Improving infrastructure on Long Island both supports and requires other initiatives set forth in this report.

- Market Long Island’s assets nationally
- Streamline governmental permitting
- Transit-supported development and job centers
- Build consensus for regional economic strategy

OUR PLAN FOR ENVIRONMENT & INFRASTRUCTURE

**Sustainable Transportation**

T-1 Create alternative, local, dedicated funding sources for Long Island transportation and environmental infrastructure
T-2 Create vibrant, transit-supported communities
T-3 Establish transit-served job centers
T-4 Implement a meaningful suburban transit system
T-5 Create a dedicated funding source for mobility improvements in transit-supported developments and downtowns
T-6 Pursue the viability of establishing Long Island as a federally-designated Metropolitan Planning Organization (MPO)
T-7 Improve and create new regional connectivity to include off-Island connections and network expansion
T-8 Conduct a feasibility study for a deepwater port on Long Island Sound in eastern Suffolk County
T-9 Take action to manage congestion and make transit competitive
T-10 Expand active transportation options

**Environment & Infrastructure**

I-1 Implement a plan to protect Long Island’s natural water resources to include the creation of a Long Island Water Resources Management Board
I-2 Develop a regional energy strategy and energy conservation programs to realize an affordable, reliable and diverse low-carbon energy supply
I-3 Create a Long Island-wide “zero waste plan” as part of a regional strategy
I-4 Protect the Island’s beaches and marine resources
I-5 Develop a climate change resilience plan to anticipate sea level rise
I-6 Coordinate an emergency preparedness plan across Long Island

**Land Use**

L-1 Establish development guidelines that serve to preserve open spaces and protect the natural environment
L-2 Complement town and village land use regulations with overlay guidelines
L-3 Protect farmland and ensure local food access
L-4 Protect neighborhood character and provide for location-compatible and appropriate new development
T-1 Create alternative, local, dedicated funding sources for Long Island transportation and environmental infrastructure

By creating dedicated local funding sources for Long Island, Nassau and Suffolk Counties, along with local municipalities, can work together to construct and maintain needed transportation and environmental systems and leveraging state and federal funding opportunities.

CONTEXT

Infrastructure and transportation projects across the country rely heavily on state and federal funding. A previous transportation strategy laid out a plan to direct our MPO to authorize more funding toward these projects. Creating an independent, locally controlled and voter-approved revenue stream (via a local infrastructure bank, user fees, impact fees, sales taxes, or other mutually agreed-upon sources) can direct needed revenues to critical infrastructure. By creating local revenues streams, Long Island policy makers can channel local funds to high priority projects and, at the same time, use local dollars to leverage state and federal funds. Should local funding options become available, the revenues are typically administered by a local transportation authority that consists of a policy board (consisting of elected officials and appropriate stakeholders) and a small staff to oversee fund administration and regulatory compliance. Nassau and Suffolk Counties could benefit by working together to form a self-help coalition to investigate and, if desired, advance a series of local self-help initiatives to fund transportation infrastructure projects. Such projects would be doubly beneficial by improving regional mobility and acting as catalysts for economic development.

PROPOSED ACTIONS

1.1 Near-term: Bring representatives from the counties and municipalities together to discuss possibilities for establishing local funding sources through creating local revenue streams, through various alternatives including user fees on consumed resources such as gasoline/diesel, natural gas, water, etc.

1.2 Near-term: Pursue the feasibility of utilizing public pension funds, public-private partnerships and privatization to facilitate the construction and improvement of major public infrastructure projects.

1.3 Mid-term: Create the Long Island Regional Infrastructure Bank. The primary purpose will be to promote regionally-significant projects by assisting in financing the public infrastructure required. Recognizing that the cost of the necessary water, sewer, roads, rail, power and other public amenities may be significant for major economic development projects, the Bank would provide a vehicle to spread those costs over surrounding localities, which are likely to benefit from the project. Moreover the Bank can be an important tool for promoting economic development on the Island as well as a platform for inter-municipal cooperation in project approvals.

1.4 Mid-term: Create the Long Island Self-Help Coalition. Made up of representatives from the two counties and, if appropriate, municipalities, this coalition will campaign for funding measures identified earlier. These campaigns will promote the measures to the public in order to increase awareness.

1.5 Mid-term: Implement identified system to provide a dedicated funding source for necessary infrastructure construction.

1.6 Mid-term: Place identified revenue and bond measures on the ballots for local residents to vote on during upcoming elections.

1.7 Long-term: Seek bond money for approved projects using approved revenue streams as backing.
The Coalition is a nonprofit group that represents the voters of nineteen counties in southern California. Self-help counties in California have raised billions of dollars in revenue to augment state and federal funding for the design, construction and operation of transportation infrastructure projects. These counties are able to successfully obtain voter approval of taxes and fees even in hard economic times.

Current California law requires counties to enact such programs if two-thirds of the voters in the county vote in favor of the program. A recent study by Dr. William G. Hamm states that the counties that have approved the self-help program enjoy two sets of advantages: (1) they have more money to fund transportation projects; (2) they have more control over how their transportation projects are designed and delivered and are less dependent on the California Department of Transportation.

In 2008, Los Angeles County was able to pass Measure R which created a $40 billion transportation improvement program. The Los Angeles County Metropolitan Transportation Authority (LACMTA) used this money to develop the LA 30/10 Initiative. 30/10’s goal is to construct 30 years’ worth of transit projects in just 10 years. Long-term revenue from Measure R will be used as collateral for long-term bonds and a federal loan which will allow LACMTA to build 12 key mass transit projects in 10 years. Accelerating construction of these projects will result in substantial cost savings. Furthermore, since transportation projects act as catalysts for economic development, the 30/10 Initiative will produce hundreds of thousands of jobs and reduce traffic congestion and emissions. The 30/10 Initiative is an unprecedented step forward for LA County and a national model of progress.

**LINKAGES TO OTHER INITIATIVES**

- New York State Co-Funding Initiative

**ROLE FOR LIRPC**

- Bring state, county and municipal officials together to discuss the creation of a coalition and potential initiatives to pursue funding alternatives for infrastructure expansions and enhancements
T-2 Create vibrant, transit-supported communities

Create vibrant, transit-supported communities that unlock the development potential around transit stations and in traditional downtowns to develop walkable and safe communities that can accommodate growth on Long Island while protecting the Island’s natural resources and existing single family home communities.

CONTEXT

Among young and aging populations, demand is growing for compact, pedestrian-friendly communities that are close to transit. Transit-supported communities (TSCs) are beneficial because they:

- create vibrant, walkable communities;
- attract young workers;
- produce fewer school-age children per unit;
- generate greater incremental revenues when compared to single-family development;
- encourage transit use; and
- decrease traffic congestion.

In addition to meeting consumer demand, transit-supported communities allow for compact growth in and around rail station areas, creating more development within a short walk of transit and more clusters of development along transit corridors. This form of growth allows more people to live on Long Island without adding to the burden of Long Island roadways. It also adds to the mix of housing on the Island, creating more choice and more availability of housing stock across pricing categories and housing types. With the clustering of worksites at station areas as well, it can be easier to live and work in transit corridors and use the LIRR to travel from home to work. This growth strategy will also boost LIRR ridership by creating reverse commute markets and establishing more consistent, all-day, bi-directional use of the railroad. Currently, however, only 19% of Nassau’s population and 6% of Suffolk’s population are located within a half-mile (10-minute walk) of a transit station.

PROPOSED ACTIONS

2.1 Near-term: Create a “Vibrant Communities” development toolkit, to include: (1) guidelines for compact, walkable, mixed-use, transit-supported development; (2) model regulations for infill redevelopment as well as site- and area-specific designs that reflect local context and preference; (3) an evaluation of the real municipal budgetary implications of multi-unit and transit-supported development; and (4) methods to coordinate infrastructure investment.

2.2 Near-term: Work with Long Island Communities and LI Index to identify priority areas. Once the highest priority areas are identified, work closely with local jurisdictions to implement the Vibrant Communities toolkit and prioritize necessary infrastructure investments to these areas.

2.3 Mid-term: Develop Vibrant Communities incentive zoning and zoning changes. Work with local communities to develop zoning that supports transit-supported and/or compact, mixed-use development and apply zoning approach in priority areas.

2.4 Mid-term: Incorporate equity strategies into plans for Vibrant Communities and transit-supported or downtown revitalization. Include strategies to preserve the affordability of the existing housing stock, upgrade deteriorated units, and include affordable units in new developments.

2.5 Mid-term: Support the creation of a funding and planning mechanism for structured parking around LIRR train stations. Structured parking frees land for development and provides opportunities for transit-supported infill development and the creation of more livable communities.
**IMPLEMENTATION**

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>Create Vibrant Communities toolkit</th>
<th>Encourage creation of Vibrant Communities through incentive zoning and zoning changes</th>
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</thead>
<tbody>
<tr>
<td>• LIRPC</td>
<td>• Town planning departments</td>
<td>• LIRPC to convene Vibrant Communities task force and hire consultant to lead toolkit creation, if necessary</td>
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<tr>
<td>• County Planning Departments</td>
<td>• County planning departments</td>
<td>• County Planning Departments to undertake studies of redevelopment opportunities under various Vibrant Communities criteria, if not currently completed</td>
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<tr>
<td>• State government</td>
<td>• State government</td>
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<th>Approvals required</th>
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<tr>
<td></td>
<td>• Town/City Planning approvals needed for individual projects</td>
<td>• Conduct financial analysis to determine incentive zoning levels necessary to incentivize inclusion of public benefits, and appropriate levels of fees-in-lieu</td>
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<tr>
<th>Key steps</th>
<th>• LIRPC to convene Vibrant Communities task force and hire consultant to lead toolkit creation, if necessary</th>
<th>• Option: encourage creation of foundation-supported fund to provide planning challenge grants to Cities/Towns for TSC planning</th>
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<tbody>
<tr>
<td></td>
<td>• County Planning Departments to undertake studies of redevelopment opportunities under various Vibrant Communities criteria, if not currently completed</td>
<td>• Enact Town/City resolution for incentive zoning policy</td>
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<tr>
<td></td>
<td>• Convene working group to achieve consensus on Vibrant Communities criteria.</td>
<td>• Track progress and document successes</td>
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<th>Costs</th>
<th>• Minimal; limited primarily to resources to hire consultant or research institute</th>
<th>• Minimal; financial costs limited to staff time for financial analysis and policy formation</th>
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<tr>
<th>Financing structure</th>
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</table>

<table>
<thead>
<tr>
<th>Challenges</th>
<th>• Requires bi-County coordination</th>
<th>• Requires action by 17 Towns and Cities for full impact</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• Presence of brownfields in some downtown areas</td>
<td>• Presence of brownfields in some downtown areas</td>
</tr>
</tbody>
</table>

**LINKAGES TO OTHER INITIATIVES**

- Brownfields Smart Growth “Spotlight Communities” Initiative: Wyandanch Rising
- Mineola Community Planning Committee (Mineola Comprehensive Master Plan and Development Incentive Overlay District)

**CASE STUDY**

**Rosslyn/Ballston Metro Corridor – Arlington, VA**

Metro opened the Orange Line serving the Rosslyn-Ballston Corridor in 1979 with five below-grade stations. Before Metro, the corridor was comprised of (1) low-density retail that was losing business to new malls in Fairfax County; (2) declining population as families moved to suburbs; and (3) disinvestment in residential neighborhoods. Arlington County saw the Metro investment as a basis for the intensive redevelopment of an underutilized commercial spine.

When Metro was being planned, Arlington County established the following development goals: (1) achieve a 50/50 tax base mix of residential and commercial development; (2) preserve existing single-family and garden apartment residential areas; (3) encourage mixed-use development; and (4) concentrate development around Metro stations.

The sector plans set goals for types of use, open space, infrastructure and design. Each plan concentrated high-density development within the Metro subway corridors, focused growth within a walkable radius of the stations, and preserved established neighborhoods and natural areas. Arlington’s urban villages emphasize pedestrian access and safety, and incorporate public art, “pocket” parks, wide sidewalks, bike lanes, street trees, traffic calming elements, and street-level retail.

Sub-area sector plans were developed to focus about ¼-mile around each station. They used special exception site plans as the approval mechanism. Included in the plans were the overall vision for each sub-area, desired public improvements, retail locations, urban design standards, public infrastructure needs, and open space and streetscape standards.

Today, the corridor has over 18.3 million square feet of office space, 3.4 million square feet of retail/commercial space, over 3,000 hotel rooms, and 22,500 residential units. If developed following a typical suburban model, this could consume over 14 square miles of open space as opposed to the two square mile Rosslyn-Ballston corridor. Metro ridership doubled in the corridor between 1991 and 2002, and the corridor contains 8% of the county’s land area and generates 33% of its property tax revenue.

**ROLE FOR LIRPC**

- Work with the Towns of Babylon and Brookhaven and other towns that are studying transit-supported communities to create an Island-wide guide to transit-supported development and make a strong case for NYMTC funding
- Build upon LIRPC efforts to promote economic development and government efficiency with tax increment financing (TIF) reform legislation
T-3 Establish transit-served job centers

Locate new jobs in job centers that use land and infrastructure efficiently, and offer easier commutes for the workforce while offering the potential for place-making and branding.

CONTEXT

Long Island’s primary employment centers are highway-focused, favoring automobile commutes and resulting in low-density development that is difficult to reach by other forms of transportation. Projected employment growth demands new and expanded job locations, preferably in walkable communities in close proximity to transit or around existing job centers where “nodes” or “concentrators” can be created to attract and support more sustainable modes of transportation such as walking, biking, bus rapid transit (BRT) or rail transit. While not all businesses are optimally sited in centers, those that are gain advantage from being in close proximity to suppliers, support services, and allied businesses and will see multiple benefits from commercial density.

Traffic makes workers and employers more open to transit use than ever before. Attracting riders to transit and carpools requires alternate modes that compare favorably to driving alone. Safe, clean and accessible rail and bus networks – some of the most costly commuter transit systems available – are already in place. The challenge, then, is to coordinate and strategically allow growth in close proximity to these systems and in areas where mixed-use, walkable development patterns allow a “park once” experience whereby people can walk or use other modes for trips after parking at work. The creation of true employment centers with transit access and a pleasant working environment will only enhance quality of life on Long Island.

PROPOSED ACTIONS

3.1 Near-term: Create a Vibrant Communities development toolkit (see Strategy T-2). This will provide guidelines and model regulations for infill redevelopment. The toolkit may include zoning and design guidance for a variety of job centers with: (1) mix housing, retail, services, jobs and transit service; and (2) those with stand-alone employment uses less suited to mixed-use development.

3.2 Near-term: Create sustainable mobility strategies for existing and new job centers and corridors. Investigate techniques that promote employment density, the evolution of vehicle technology and alternative right of way use. These strategies should also address bridging the gap between existing transit and centers for places like the Nassau Hub, Riverhead Tanger Outlets and building transit connectivity on job corridors like Route 110 and Northern Boulevard.

3.3 Mid-term: Direct incentives and strategic investments to designated job centers. Prioritize funding for infrastructure expansion or modernization to designated job centers.
### IMPLEMENTATION

| Responsible entities | • LIRPC  
|                     | • Long Island Association  
|                     | • Long Island Development Corporation  |
| Approvals required  | • NY State DOT  
|                     | • County/local transportation/planning departments  
|                     | • Business associations/departments  |
| Key steps           | • Create development toolkit  
|                     | • Create sustainable mobility strategies  
|                     | • Direct incentive and strategic investment to job centers  |
| Costs               | • Medium - attract businesses, improve transit infrastructure, build job centers  |
| Financing structure | • Federal/state funding for transit improvements  
|                     | • Tax incentives/state grants for business attraction & job center creation  |
| Challenges          | • Attracting businesses and workforce to Long Island  
|                     | • Collaboration between businesses, the community, and transportation agencies  |

### CASE STUDY

**Tysons Corner in Fairfax County, Virginia**

Located halfway between Washington DC and Dulles International Airport, Tysons Corner serves as the central business district of Fairfax County, Virginia. With approximately 27 million square feet of office space, Tysons Corner is the 12th largest business district in the country by square footage. Historically, the ratio of employees to residents has been unbalanced and congestion high due to the area’s auto-oriented design. In 2008, Fairfax County officials took a proactive step to shape the future of Tysons, unanimously voting to approve a 40-year plan to create transit-oriented development around four previously proposed stations of the Washington Metro’s Silver Line.

This plan results from the Board of Supervisors’ decision to update a 1994 plan in which the transit stations were proposed. The Board’s objectives were to promote mixed use, better facilitate transit-oriented development, enhance pedestrian connections, enhance worksite access to transit, increase transit utilization among area workers, increase the residential component of the density mix, improve the functionality of Tysons, and provide for amenities such as parks and public spaces. According to the plan, by the year 2050, Tysons Corner will be an urban center with 200,000 jobs and 100,000 residents. Additionally, 75% of development will be within a walkable half mile of the new Metro stations, which are supported by community shuttles, feeder bus service, and extensive pedestrian and bicycle networks. One of the key elements of the plan’s framework is to enhance Tysons as major employment center of the County and economic engine of the region. The plan is beginning to become reality as the construction of the Silver Line began in February of 2010.

### ROLE FOR LIRPC

- Partner with local municipalities to help them craft tax incentives which allow for the creation of transit-served job centers
- Work with the Towns of Babylon and Huntington on the Route 110 BRT Study to assess how new transit service can assist in the creation and enhancement of employment centers
- Collaborate with economic and business development organizations

### LINKAGES TO OTHER INITIATIVES

- Mineola Community Planning Committee (Mineola Comprehensive Master Plan and Development Incentive Overlay District)
- Route 110 BRT Corridor
T-4 Implement a meaningful suburban transit system

Offer a meaningful alternative to the automobile by creating a transit system that effectively serves existing and new centers and expands the availability of sustainable transportation modes.

CONTEXT
Long Island’s transit service is predominantly focused on providing access to New York City. The public transit system was originally developed around the commuter railroad, and the bus system subsequently developed to support the LIRR, bringing commuters to rail stations and expanding to serve other key destinations. If growth occurs across the LIRR corridors, LIRR coupled with a network of bus services could provide meaningful options for residents and workers traveling from center to center across the region. Increasing LIRR’s level-of-service aligns well with previously defined Economy strategies. Linkages to BRT create opportunities for expanded transit service on key north-south corridors. Promoting transit-supported development and high-density job centers encourages reverse commuting and increases in the walk, bike, and transit mode shares while also creating an urban fabric easily served by public transit.

PROPOSED ACTIONS

4.1 Near-term: Advocate for LIRR third track on the Main Line, second track from Farmingdale to Ronkonkoma and sustained funding for a regional bus system

4.2 Near-term: Convene a Long Island Mobility Summit. Identify areas of opportunity for transit network expansion, north/south and east/west corridors with potential for BRT, supporting policies and responsibility for implementation.

4.3 Near-term: Take an integrated approach to transportation on Long Island. Jointly develop a ridership-based transit policy between MTA and Suffolk County Transit that provides a framework for the efficient and effective expenditure of transit funds and a framework for realizing the highest return on investment. Also, investigate the creation of a new Long Island-dedicated transit agency.

4.4 Near-term: Change the service plan of LIRR to respond to changing travel needs. The MTA should investigate the financial and operational feasibility of expanding service for key off-peak periods including reverse peak and midday service for major employment and shopping destinations on Long Island. Service improvements should be phased with development program.

4.5 Mid-term: Create a network management program on select corridors on Long Island. Network management programs allow for orchestrated street improvements that would normally occur separately, such as utility upgrades or transit installations, to occur simultaneously. This reduces costs, construction times and impacts on Long Island’s residents and businesses.

4.6 Mid-term: Identify and prioritize a list of potential north-south and east-west corridors as candidates for BRT or enhanced bus service. Those of highest priority start as pilot projects, focusing on: (1) traffic impacts; (2) demographic and population analysis; (3) identification of present and future business and retail hubs; (4) financial feasibility. Should align with development program.

4.7 Long-term: Increase capacity on LIRR’s Main Line. Additional track between various locations can increase the level of service and capacity. This would also facilitate transit commuting to Long Island job centers and encourage suburb to suburb commuting.

4.8 Long-term: Reopen the LIRR Central Branch which could serve significant office buildings in Garden City and environs.
### IMPLEMENTATION

| Responsible entities                  | • Suffolk County Bus  
|                                     | • Long Island Railroad  
|                                     | • MTA – Long Island Bus  
|                                     | • County planning/transportation departments  
|                                     | • LIRPC  
| Approvals required                  | • NYMTC  
|                                     | • Local, county transportation departments  
|                                     | • NY State DOT  
| Key steps                           | • LIRPC to hold Long Island Mobility Summit  
|                                     | • Changes to LIRR service/infrastructure  
|                                     | • BRT framework & pilot program  
| Costs                               | • Significant capital costs  
| Financing structure                 | • State/local budgets for transportation improvements  
|                                     | • Federal funding through NYMTC  
|                                     | • MTA capital improvement budget  
|                                     | • LIRR operating budget  
| Challenges                          | • Coordination of MTA and county and town agencies  
|                                     | • Public adoption of bus as a transportation mode  
|                                     | • Federal/state funding approval  

### LINKAGES TO OTHER INITIATIVES

- LIRR Main Line 3rd Track Project
- LIRR 2nd Track between Farmingdale and Ronkonkoma stations
- LIRR East Side Access to Grand Central Terminal
- Route 110 BRT Study
- Access to the Region’s Core (ARC)
- Long Island Accessibility Study, NYMTC

### CASE STUDY

**Transit City, Toronto, Ontario**

A collaborative effort between the City of Toronto and the Toronto Transit Commission (TTC), Transit City is an initiative to expand public transportation to better serve the greater Toronto region and bring transit to areas that currently lack a high quality public transit system. The initiative was also undertaken to provide better transit service in communities identified through a program called “Places to Grow” which pinpoints priority growth areas in the region and supports pedestrian-, bicycle-, and transit-friendly policies. The overall strategy is to protect areas that are currently characterized as single family while staunching the continued urban sprawl to outlying areas. Together, the complementary initiatives will bring more frequent, reliable and high quality transit services to existing communities under growing change or new communities being developed.

The initiative was announced in 2007 and builds upon the City’s emphasis on transit, bicycle, and pedestrian infrastructure as part of an overall sustainable development approach. One LRT line is already in operation and two others are under construction. At the same time, development is unfolding in priority areas and other areas are being planned to grow in a more sustainable manner. Transit City calls for the construction of eight new Light Rail Transit (LRT) lines that will serve communities that do not currently have access to rapid public transit. Connections will be expanded to existing subway, bus, and LRT routes. Transit vehicles will operate in dedicated lanes that are separated from traffic, resulting in a fast, safe, and reliable alternative to the automobile.

### ROLE FOR LIRPC

- Collaborate with local municipalities and transit agencies to improve transit-service for all Long Islanders
- Partner with the existing Route 110 BRT Study team to develop a set of best practices guidelines for application on future Long Island corridors
T-5 Create a dedicated funding source for mobility improvements in transit-supported developments and downtowns

Ensure the availability of Federal and State funding for major infrastructure improvements and work to develop a framework to attract funds that spur design and construction of new systems.

CONTEXT

The Metropolitan Planning Organization (MPO) for the New York Region, the New York Metropolitan Transportation Council (NYMTC), has the ability to shape policies that guide the funding for transportation projects. The environment for receiving federal funds is becoming more competitive as more sophisticated cases are made by regional agencies to justify allocation for major projects. Through the Regional Transportation Plan, the MPO can explore the establishment of a sustainable mobility fund and dedicate a funding source to projects in vibrant downtowns or those that sustain transit operations and expansion. It is important to create a vision for Long Island that is supported by focused transportation infrastructure improvements, and to seek federal money to support those investments. Encourage the MPO to prioritize funds towards pedestrian, bicycle, and transit improvements in Long Island, particularly those improvements in transit-supported developments or downtown areas that would promote walkable, vibrant communities.

PROPOSED ACTIONS

5.1 Near-term: Work with the MPO to develop a funding framework that can be adhered to in the future, following the Regional Transportation Plan that is in place. Once strategies have been put in place to develop regional participation and transit-supported development, Long Island will have the tools necessary to present an educated and informed case to the federal government on why their dollars will be put to good use in the region.

5.2 Near-term: Encourage the MPO and other local entities to pursue federal stimulus money for Long Island. This short-term financing could be used for station upgrades, bus network improvements, and planning studies for larger projects.

5.3 Near-term: Work with the MPO to secure a portion of the $100 million in grants available from other Federal agencies. The FTA, EPA and HUD have funding available for use by communities that are committed to creating sustainable and intelligent infrastructure.

5.4 Near-term: Study the feasibility of forming a Long Island MPO (see Strategy T-6).

5.5 Long-term: Prioritize transportation funding toward growth areas around Long Island that are focused on transit-supported development and robust transit networks.
### IMPLEMENTATION

| Responsible entities | MPO  
| County planning departments  
| LIRPC |
| Approvals required | Local, county transportation departments  
| NY State DOT |
| Key steps | Develop framework for county/MPO coordination  
| Prioritize projects across counties/agencies |
| Costs | Not Applicable |
| Financing structure | MPO distribution of federal transit dollars |
| Challenges | Establishing relationship between counties and MPO  
| Overcoming current emphasis on highway projects for federal funding |

### CASE STUDY

**Metropolitan Transportation Commission, San Francisco, CA**

The Metropolitan Transportation Commission (MTC) in San Francisco, CA, has established capital planning grants for a variety of transportation and transit-supported infrastructure. The $27 million per year Transportation for Livable Communities (TLC) Program provides capital grants to small-scale transportation projects that promote walking, bicycling and public transit use. The Housing Incentive Program (HIP), which was added in 2000, promotes compact housing in the vicinity of public transit hubs. MTC recognizes the impacts that improved pedestrian environments and access to transit, supported through TLC projects, can benefit economic development in the region. The TLC is funded through the federal Congestion Management and Air Quality Improvement and the federal Transportation Enhancement Act. Funding for transit expansion projects is provided through the State Transportation Improvement Program (STIP).

### ROLE FOR LIRPC

- Partner with local municipalities to prepare a unified set of priorities for funding regional transit projects
T-6 Pursue the viability of establishing Long Island as a federally-designated Metropolitan Planning Organization (MPO)

As this report makes clear, Long Island needs to improve its transportation infrastructure. The creation of a dedicated, locally-hosted Metropolitan Planning Organization for Nassau and Suffolk Counties would help Long Island’s decision makers focus on this need and better position Long Island for a fair share of federal transportation dollars in the future.

**CONTEXT**

Since the 1970s, federal transportation legislation has mandated that all urbanized areas with a population over 50,000 must have a designated Metropolitan Planning Organization (MPO) in order to qualify for federal transportation funding. Currently, Nassau and Suffolk Counties fall within the jurisdiction of the New York Metropolitan Transportation Council (NYMTC), the MPO for the greater New York City metropolitan area which encompasses New York’s five boroughs and Putnam, Westchester, and Rockland Counties in the lower Hudson Valley. Together with Long Island, this is a region of 2,440 square miles and a population of 12.6 million, or approximately 65% of New York State’s population. In a region of this size, transportation projects critical to Long Island’s growth and development compete with other major projects under NYMTC authority. And as indicated in Strategy T-5, the process for receiving federal funds has become increasingly competitive and sophisticated. Therefore, a locally-hosted Long Island MPO would be better poised to advance a more sustainable vision for Long Island by shaping transportation policy and guiding infrastructure funding. Given Long Island’s population of nearly 3 million (2009 U.S. Census), a local MPO would represent one of the largest in the country. Only 11% of all MPOs in the United States represent populations over 1 million.

An MPO is designated by an agreement among the Governor, cities, and local governments representing at least 75% of the affected population. Federal guidelines do not include explicit requirements for setting jurisdictional boundaries; the MPO and the Governor approve the boundary.

**PROPOSED ACTIONS**

6.1 **Near-term:** Further investigate all necessary first steps in creating a new MPO and research all MPO responsibilities. Reach out to other MPOs in New York for advice. Send letters of intent to the Governor, the NYSDOT, county and local officials, and NYMTC.

6.2 **Near-term:** Convene a meeting with the LIRPC, the NYSDOT, and county and local officials to discuss intent and need. Separation from an existing MPO would involve redesignation of the existing MPO (NYMTC). A request for redesignation requires formal agreement between the Governor and representatives of local jurisdictions that together comprise at least 75 percent of the population of the MPO. In New York State, the DOT acts on the behalf of the Governor for matters relating to MPOs.

6.3 **Near-term:** Develop a proposal for board membership structure, a necessary step in gaining MPO approval from the DOT and representatives of local jurisdictions.

6.4 **Mid-term:** To further build consensus for a locally-hosted MPO, draft a plan outlining need and necessary steps and compile a formal package of documentation to support designation of the MPO. Distribute to the DOT and county and local officials.

6.5 **Mid-term:** Gain approval, establish the MPO, and develop a work plan, tasks and a schedule for the creation of a Long-Range Transportation Plan (LRTP) and a Transportation Improvement Program (TIP). Hire a Director and begin staffing.
Follow the 1990 decennial census, the urbanized population of the Ithaca area in upstate New York surpassed the 50,000-person threshold for designation as an urbanized area. According to federal mandates, a dedicated MPO was needed in order for the region to qualify for federal transportation funding.

In response, county planning officials spent two months researching MPO responsibilities along with different models that existed in New York State. In November of 1991, Tompkins County officials formally expressed the interest of the county and the urbanized area’s municipalities to form an MPO. County officials met with NYSDOT’s Transit Division and Urban Planning Division Staff to discuss the possibility of the county hosting the MPO. The DOT initially recommended that the MPO be hosted by the state rather than the county. In an effort to bolster a locally-hosted model, Tompkins County drafted “A Plan for Establishing the Ithaca MPO” and distributed it to the area’s municipalities and Cornell University in January 1992. The Plan outlined a possible hosting arrangement including the MPO’s use of office space and sources of budget revenue.

In March 1992, the DOT approved the creation of the Ithaca-Tompkins County Transportation Council (ITCTC). The full process of forming the MPO after the initial expression of interest by the county had taken roughly seven months.

### IMPLEMENTATION

**Responsible entities**
- LIRPC
- NYSDOT/Governor
- County and local governments
- NYMTC

**Approvals required**
- NYSDOT (representing the Governor)
- County and local governments representing at least 75% of the affected population

**Key steps**
- See “Proposed Actions” on previous page

**Costs**
- To be determined

**Financing structure**
- Federal and State financing
- Funding from counties and municipalities looking to conduct planning studies
- Federal transit funding

**Challenges**
- Communicating need to the NYSDOT/Governor, county and local officials, and NYMTC
- Gaining required support from local agencies

### CASE STUDY

**Ithaca-Tompkins County Transportation Council**

Following the 1990 decennial census, the urbanized population of the Ithaca area in upstate New York surpassed the 50,000-person threshold for designation as an urbanized area. According to federal mandates, a dedicated MPO was needed in order for the region to qualify for federal transportation funding.

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### LINKAGES TO OTHER INITIATIVES

- Federal Highway Administration “Metropolitan Planning” website [www.fhwa.dot.gov/planning/metro](http://www.fhwa.dot.gov/planning/metro)
- FHA/FTA Transportation Planning Capacity Building Resources [www.planning.dot.gov](http://www.planning.dot.gov)
- Association of Metropolitan Planning Organizations (AMPO)
To relieve congestion throughout the region, provide alternatives to corridors through New York City with new cross Sound connections, cross harbor links, and increase Long Island’s transit, road, water and airport capacity and connectivity.

**CONTEXT**

Most Long Island road-based and rail-based vehicles pass through New York City to access mainland New York and other states. This lengthens travel times between important regional employment destinations, increasing the cost of doing business and reducing the accessibility of Long Island as an employment and cultural center. Freight access is similarly restricted, as the only suitable limited access roadway that permits truck traffic is the Long Island Expressway. Moving freight by rail has proven to be more time and cost effective while also having environmental advantages. Suffolk County is New York State’s leading agricultural county in the state in product sales. Enhanced off-Island shipping of these and other Long Island products will improve their marketability off-Island. Within the region, Long Island’s domestic flight offerings are comparatively limited, resulting in increased traffic to larger New York City airports that provide more service.

**PROPOSED ACTIONS**

**7.1 Near-term:** Convene a Long Island Mobility Summit. Work with local stakeholders to prioritize specific congestion issues and develop a shortlist of proposed improvements and congestion solutions.

**7.2 Mid-term:** Investigate the benefits and impacts of the expansion of Long Island MacArthur Airport (ISP) and Republic Airport. The expansion of either airport has the potential for economic and transportation benefits.

**7.3 Long-term:** Continue to investigate the feasibility and benefits of large scale infrastructure improvements, such as the Cross Sound Link. Implement LIRR Mainline capacity (additional track) improvements to complement the East Side Access project (under construction), facilitate reverse commuting and improve freight transportation options. These initiatives can relieve congestion on Long Island and promote economic development in the region.

**7.4 Long-term:** Increase freight access and options. Projects such as the Cross Harbor Freight Tunnel and creation of Rail/Truck Intermodal Terminal(s) would provide an opportunity to link the nation’s rail freight system and relieve truck congestion on regional and local roadways.

**7.5 Long-term:** Advance the “freight village” model, a fusion of land use and transportation planning to cluster freight dependent companies around a concentration of shared transportation infrastructure. Freight villages would allow rail or waterborne transportation to reduce truck traffic and the cost and impact of goods movement.
In May 2006, the Brisbane City Council awarded the RiverCity Motorway consortium a 45 year concession for the Brisbane North South Bypass Tunnel (NSBT). The project was demonstrated as necessary because of the region’s high population growth with no improvements to connections across Brisbane River since the 1980’s. Further, it had been proven that a majority of the northbound and southbound vehicles in Brisbane are actually bypassing the central city area. Currently these vehicles pass through the City, navigating 18 sets of traffic lights and adding significantly to urban congestion. The tunnel will provide a direct link between arterials to the north and south of Brisbane, freeing up space on Brisbane’s surface streets and generating time savings for bypass traffic of up to one third of total travel time.

**IMPLEMENTATION**

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<th>Responsible entities</th>
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<tr>
<td>• New York State DOT</td>
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<td>• New York City DOT</td>
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<td>• Towns of Islip and Babylon</td>
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<td>• MTA/LIRR</td>
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<td>• Port Authority of NY/NJ</td>
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<th>Key steps</th>
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<tr>
<td>• LIRPC to hold Long Island Mobility Summit</td>
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<td>• Major investment Studies/EIS</td>
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<tr>
<td>• Federal/state funding approval process</td>
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<td>• Local community support and stakeholder buy-in</td>
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<td>• Costs very high, long-term timeframe</td>
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<td>• Siting rail/truck terminal(s)</td>
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**ROLE FOR LIRPC**

- Convene a meeting with NYCDOT, NYSDOT, NYMTC, MTA/LIRR and local transportation officials to discuss regional congestion and implications for Long Island
- Collaborate with the Port Authority and owners of Islip and Republic Airports to develop an analysis of benefits of possible airport expansion to respond to public opposition.

**CASE STUDY**

**Brisbane North-South Bypass, Australia**

In May 2006, the Brisbane City Council awarded the RiverCity Motorway consortium a 45 year concession for the Brisbane North South Bypass Tunnel (NSBT). The project was demonstrated as necessary because of the region’s high population growth with no improvements to connections across Brisbane River since the 1980’s. Further, it had been proven that a majority of the northbound and southbound vehicles in Brisbane are actually bypassing the central city area. Currently these vehicles pass through the City, navigating 18 sets of traffic lights and adding significantly to urban congestion. The tunnel will provide a direct link between arterials to the north and south of Brisbane, freeing up space on Brisbane’s surface streets and generating time savings for bypass traffic of up to one third of total travel time.

**LINKAGES TO OTHER INITIATIVES**

- LIRR East Side Access to Grand Central Terminal
- LIRR Mainline Capacity Improvement
- Development of a Deepwater Port on Long Island Sound
- Cross-Harbor Freight Tunnel
- Long Island Cross-Sound Link
- Access to the Region’s Core (ARC)
The creation of a deepwater port could provide Long Island with a cost-efficient, environmentally-friendly means of transporting goods to and from Long Island without traveling through New York City. This could open up new global opportunities for Long Island’s agriculture and manufacturing industries.

CONTEXT

Suffolk County is New York State’s leading agricultural county in product sales. Enhanced off-Island shipping of these and other Long Island products will improve their marketability off-Island. Importing materials onto Long Island could have a similar economic benefit. Enabling the import/export of materials will reduce truck traffic on Long Island’s roads, easing pressure on congested roadways, improving local air quality, and reducing some of the potential environmental effects of increased economic activity that would result from the strategies in this report.

PROPOSED ACTIONS

8.1 Near-term: Conduct a feasibility study to determine market for a deepwater port, and identify potential sites. Assess feasibility of direct marine transfer of imports from the major New York City metropolitan area Ports of Newark and Elizabeth. Investigate feasibility of transfer of goods at the port site itself, an intermodal terminal/freight village on the LIRR, and the possibility of moving waste off-Island via rail.

8.2 Mid-term: Conduct EIS for port/terminal site(s) recommended in Feasibility Study.

8.3 Mid-term: After completion of an EIS and identification of a port location, develop plan for the implementation and operations of the port including the identification or creation of an appropriate agency to oversee port construction and operations.


8.5 Long-term: Construct and operate port.
PORT OF WILMINGTON, DELAWARE

The Port of Wilmington is a deepwater port on the Delaware River that handles approximately 400 vessels and 4 million tons of cargo each year. Although the Port imports and exports a variety of cargo, it imports more fresh fruit than any other port in North America. Access to and from the Port is provided by the Norfolk Southern and CSX Transportation rail lines and Interstate 95. Originally owned by the City of Wilmington, the Port was purchased by the State of Delaware in 1995 and is now operated by the Diamond State Port Corporation. A Local and Regional Economic Impact study prepared in 2007 by Martin Associates estimates that from 2000 to 2006, the marine activity through the Port of Wilmington generated over $2.2 billion in revenue and $180 million in state and local taxes for the regional economy.

**IMPLEMENTATION**

| Responsible entities | • Port Authority of NY and NJ  
|                      | • NY Metropolitan Transportation Council  
|                      | • MTA/LIRR  
|                      | • New York State DOT |

| Approvals required | • United States DOT/US Coast Guard  
|                    | • United States Army Corps of Engineers  
|                    | • United States Customs Service, Environmental Protection Agency, Maritime Administration, National Oceanic and Atmospheric Administration  
|                    | • New York State DEC  
|                    | • New York State Department of State  
|                    | • Local Township |

| Key steps | • Confirm market and identify port/terminal site (s)  
|          | • EIS/Mitigation of Impacts  
|          | • Construction |

| Costs | • Significant Costs |

| Financing structure | • NYMTC, Federal, State |

| Challenges | • Multi-agency coordination  
|            | • Local public opposition to port/terminal site  
|            | • Mitigation of dredging/environmental and wildlife issues  
|            | • Availability of land for terminal  
|            | • Obtaining construction funding |

**CASE STUDY**

**Port of Wilmington, Delaware**

The Port of Wilmington is a deepwater port on the Delaware River that handles approximately 400 vessels and 4 million tons of cargo each year. Although the Port imports and exports a variety of cargo, it imports more fresh fruit than any other port in North America. Access to and from the Port is provided by the Norfolk Southern and CSX Transportation rail lines and Interstate 95. Originally owned by the City of Wilmington, the Port was purchased by the State of Delaware in 1995 and is now operated by the Diamond State Port Corporation. A Local and Regional Economic Impact study prepared in 2007 by Martin Associates estimates that from 2000 to 2006, the marine activity through the Port of Wilmington generated over $2.2 billion in revenue and $180 million in state and local taxes for the regional economy.

**ROLE FOR LIRPC**

• Interagency coordination  
• Seek funding for Feasibility Study  
• Conduct Public Outreach Program to present regional benefits and challenges of a deepwater port  
• Obtain construction funding

**LINKAGES TO OTHER INITIATIVES**

• Regional Connectivity  
• Sustaining local agriculture  
• Regional economic development
T-9 Take action to manage congestion and make transit competitive

To manage congestion and incentivize alternative modes of transportation, research techniques successful in other regions and determine ways to make them effective on Long Island.

CONTEXT

Long Island’s roads are congested, and while the LIRR provides efficient peak-hour commuting service to New York City, transit is uncompetitive on the Island for reverse commuting and discretionary trips. Additionally, the spread-out, suburban land uses common on Long Island promote single-occupancy vehicle use for commuting. Many residents prefer or have no options but to drive to a park-and-ride for LIRR service or straight to work, resulting in congestion on major highways, arterials, and secondary/tertiary roadways. There is an opportunity to reduce and manage the congestion on Long Island’s roads while increasing transit awareness and attractiveness.

PROPOSED ACTIONS

9.1 Near-term: Long Island Mobility Summit. This portion of the summit will be an opportunity for local leaders, the community and transportation agencies to discuss ways to manage congestion.

9.2 Near-term: Analyze the potential impacts of Intelligent Transportation Systems (ITS) such as dynamic tolling, congestion charging, carpool lanes, and other congestion mitigations that can improve traffic flow on highways and freeways.

9.3 Near-term: LIRPC to work with transportation officials and local businesses, schools, and residents to devise travel demand management strategies. For key trip generators such as large employers, institutions, schools, etc., develop Transportation Demand Management (TDM) options that are appropriate for Long Island (parking management, flex delivery schedules, downtown circulators/car-share, etc.) and assist in moving discretionary trips out of the peak.

9.4 Mid-term: Make affordable adjustments to the existing roadway network, where appropriate. Technological improvements to roads including ramp metering, dynamic messaging, email/phone alerts, and physical improvements such as traffic calming and pedestrian/bike-friendly intersection redesigns are examples of cost effective solutions.

9.5 Long-term: Investigate the viability of High-Occupancy Toll (HOT) lanes. These HOT lanes dynamically adjust tolls on express lanes of major highways based on congestion to promote car-pooling and off-peak trips.
**Long Island Sustainability Plan**

**IMPLEMENTATION**

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<th>Responsible entities</th>
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<td>• NY State DOT</td>
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<td>• Local planning/transportation depart</td>
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<td>• FHWA</td>
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<th>Key steps</th>
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<td>• LIRPC to hold Long Island Mobility Summit</td>
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<td>• Identify technologies for ITS solutions</td>
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<td>• Identify key capital projects</td>
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<td>• Set up funding/revenue mechanisms</td>
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<td>• Based on technologies and programs selected for implementation</td>
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<th>Financing structure</th>
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<td>• Federal/state/county/local transportation funding</td>
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<td>• Possible public-private partnership (PPP)</td>
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<td>• Bonds for toll roads</td>
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<td>• Establishing funding mechanism</td>
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<td>• Differing standards for roadways/HOV</td>
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<td>• Public adoption/comfort with new tolling technology</td>
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<td>• Public opposition to new tolls and fees</td>
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**CASE STUDY**

**Capital Beltway HOT Lanes Project, Washington D.C.**

The Capital Beltway HOT Lanes Project on Interstate 495 in the Washington D.C. area is part of a $1.9 billion public-private investment to relieve congestion and improve the efficiency of the region’s transportation system. The HOT lanes allow free access to buses, carpools of three or more people, motorcycles, and emergency vehicles, while providing an option to low-occupancy vehicles that pay a toll to utilize the lanes. The toll rates adjust throughout the day to regulate demand for the HOT lanes, ranging from $0.10 to $1.00 per mile. Electronic signs display the rates and users pay the toll using an electronic EZPass. Upon completion, the project will have expanded the regional HOV network to 70 miles of HOV/Bus/HOT lanes. A major component of the project is providing access to and from the HOT lanes at the intersection of I-495 and I-66.

**TDM Strategies, Arlington, VA**

In 1990 Arlington issued a Transportation Demand Management Policy Statement. The statement provides guidelines and actions for reducing peak-hour congestion, many of which are focused on reducing the number of single-occupancy vehicle trips that are made. Strategies include: (1) ridesharing promotion; (2) parking management; (3) transit promotion; (4) on-site construction measures; (5) mutually agreed off-site provisions or contributions; (6) lease agreements, and (7) monitoring and compliance. The document also includes a matrix of strategies according to which types of land uses they may be appropriate for. Federal and State sources provide 76% of the funding for the TDM program. Arlington has found that TDM provides health, mobility, environmental, quality of life, and economic benefits to individuals, businesses, and the overall community.

**LINKAGES TO OTHER INITIATIVES**

- Sagtikos Corridor Truck Bypass
- NYSDOT Managed-Use Lane Study

**ROLE FOR LIRPC**

- Collaborate with EZPass, NY State Thruway Authority, and local transportation agencies to understand how innovative tolling technologies can help mitigate congestion on Long Island
- Develop a TDM case study portfolio for use by local agencies & municipalities investigating the local impacts of its implementation
T-10 Expand active transportation options

*To expand sustainable mobility options; improve transit access and provide high quality pedestrian and bicycle networks in station areas, downtowns and new development areas on Long Island.*

**CONTEXT**

The auto-centric environment that has been created on Long Island in the past has led to an uninviting environment for pedestrians and bicyclists. Even the areas surrounding transit stations are predominantly reserved for the automobile user. The implementation of transit-supported development and job-center strategies provides a unique opportunity to improve the walk and bike modal shift on Long Island, especially in downtowns, new developments and transit station areas. Pedestrian and bicycle networks can also connect existing residential communities to town and transit-supported centers.

**PROPOSED ACTIONS**

10.1 **Near-term:** Convene a Long Island Mobility Summit. Meet with local stakeholders in order to prioritize pedestrian and bicycle infrastructure improvements to create Vibrant Downtowns. Base these enhancements on safety concerns, connectivity, access to transit and major employment and retail destinations, constructability and cost.

10.2 **Near-term:** Develop best practice street design guidelines so all planned new developments incorporate pedestrian and bike infrastructure.

10.3 **Mid-term:** Improve pedestrian and bicycle access to transit. Integrate high quality pedestrian and bicycle infrastructure into the designs for new stations, existing LIRR Stations and downtowns, that are interesting and inviting to non-auto commuters.

10.4 **Mid-term:** Create land use and street design guidelines to promote walking and cycling. Develop land use guidelines that encourage dense, mixed-use development, especially in downtowns and areas surrounding transit stations. Ensure that guidelines for the improvement of existing streets and the development of new streets encourage multi-modal road networks, where appropriate.

10.5 **Long-term:** Create a long-term planning and capitol program. This program will help to develop region-wide pedestrian and bike systems and strengthen access to the transit network.
NYC Guidelines and Improvements

In 2009, the New York City Department of Transportation (DOT) issued its first set of street design guidelines. The manual encourages a shift away from utilitarian road construction and toward designing streets for all modes of transportation, with emphasis on pedestrian and bicycle priorities. While the guidelines do not supersede any laws or regulations, DOT is using the manual to review all existing development plans to ensure that they are aligned with the recommendations they put forth. The Street Design Manual includes suggestions for “pedestrianizing” streets, adding public plazas in underutilized street spaces, opportunities for public art additions, improving bicycle connectivity and parking, and creating complete streets.

In 2009 the Bicycle Access to Office Buildings Law was passed. The Law aims to increase bicycle commuting by providing safe bicycle parking within or near commercial buildings.

Prior to 2006, New York City had approximately 400 miles of Class I and II bicycle lanes and paths. The issue, however, was that the bicycle network was disconnected. DOT set out on an ambitious effort to improve connectivity, adding 200 miles of lanes and paths between 2006 and 2009. Since 2005, bicycle commuting has more than doubled.

LINKAGES TO OTHER INITIATIVES

- Patchogue Pedestrian Emphasis Area
- Nassau Hub Transportation Improvements
- Nassau-Suffolk TCC’s Pedestrian-Bicycle Plan, NYMTC
- LIRR Access to Stations Study
- Long Island Accessibility Study, NYMTC

ROLE FOR LIRPC

- Work with the MPO to explore and attract pedestrian and bicycle funding, including NYS Department of Transportation’s Local Safe Streets and Traffic Calming Grant Program
- Partner with towns and villages on their potential pedestrian improvement plans to create Island-wide guidelines and best-practices
While water is an abundant resource for Long Island, there is only one aquifer system to serve the water needs of everyone on Long Island now and in the future. One Island, one aquifer system. Creating a regional water quality management board responsible for overseeing the management of water and wastewater for Long Island can preserve the aquifer now and in the future.

I-1 Implement a plan to protect Long Island’s natural water resources to include the creation of a Long Island Water Resources Management Board

CONTEXT

There are increasing threats to the aquifer from septic tanks, saltwater intrusion, fertilizers, historic dumping of chemicals by past industry and leaking underground storage tanks. Contaminated properties threaten the Island’s water drinking supply and must be remediated. Having one regional water board will allow for better practices, coordination, and possible expansion of a connected water distribution system and sewage infrastructure. Consolidated and coordinated infrastructure will provide opportunities for compact development, brownfield remediation, increased funding opportunities for expansion/upgrades, decrease in septic system contamination, and reduction in water and wastewater treatment costs.

PROPOSED ACTIONS

1.1 Near-term: Creation of a Long Island Water Resources Management Board (LIWRMB) to control the well pumping, treatment, distribution and usage costs of potable water and collection and treatment of wastewater.

1.2 Near-term: Water rates to be structured to penalize over-consumption and allow for the recovery in rates of conservation programs while requiring water measurable conservation with reporting.

1.3 Near-term: LIWRMB to review on-going feasibility studies and develop additional ones for connecting potable water infrastructure between each County, sewage management and treatment systems within Nassau and Suffolk Counties

1.4 Near-term: Permit graywater recycling systems in County Ordinances, promote stormwater reuse for non-potable uses and revise building codes to include prescriptive requirements for water fixtures.

1.5 Mid-term: LIWRMB incentives for property owners to convert to municipal sewer services.

1.6 Mid-term: Extend sewer systems to unsewered areas. Prioritize areas identified for future growth or greatest need

1.7 Mid-term: For unsewered areas, create a septic management plan educating the homeowner, prioritizing areas of significance, and mandating regular pump-outs through notices and inspections (a database of septic systems by address is recommended).

1.8 Mid-term: Remediation work can restore properties to the tax rolls as well as provide job creation and economic development for the Island. The costs of such cleanup can be placed as a lien on remediated properties.

1.9 Long-term: Upgrade and expand regional wastewater treatment facilities to meet future capacity and improve treatment and energy efficiency.

1.10 Long-term: Link Suffolk County and Nassau County sewer and water infrastructure through increased revenue generated from water usage rate increases and a coordinated application for State and Federal funding.
### IMPLEMENTATION

| Responsible entities | • LIRPC  
|• NYSDEC  
|• Nassau & Suffolk Counties DPW, DOH  
|• Suffolk County Sewer Authority  
|• Nassau County Sewer and Storm Water Authority  
|• Private wastewater treatment plants in Suffolk County  
|• Nassau village wastewater treatment systems  
|• Suffolk County Water Authority, Nassau County water districts (public and private) & individual water companies  
|• Suffolk and Nassau County Towns and municipal entities  
|• Property owners  
|• New York State Environmental Facilities Corporation (EFC) |

| Approvals required | • New York Public Service Commission for the creation of the authority  
|• New York State legislation may be required  
|• Town budgets  
|• Ordinance changes in Nassau County for graywater systems  
|• Approval from municipalities for buildings code changes |

| Key steps | • Creation of LIRWB  
|• Completion of feasibility studies in Suffolk and Nassau for water and sewage expansion projects  
|• Connection of water distribution network  
|• Connection of sewage network |

| Costs | • Cost for connection be determined from feasibility studies  
|• Increased costs for large consumers of water |

| Financing structure | • State revolving fund programs (SRF) for efficiency / protection measures  
|• Acquisition financing from the NYSEFC  
|• Landowner connection fees |

| Challenges | • Establishing new governance structures  
|• Requires cooperation of agencies and counties  
|• Connection fees to residents  
|• Federal funding applications |

### CASE STUDY

**East Bay Municipal Utility District (EBMUD)**

EBMUD was founded in 1923 after a severe drought proved that the existing system of reservoirs was inadequate. They are the water and wastewater authority in Alameda and Contra Costa Counties in California; providing water services for 1.3 million customers and wastewater services for 640,000 residents. EBMUD is operated by a seven-member board of directors that are elected by ward. The board members determine overall policies which are implemented under the direction of a General Manager. Regular bi-monthly meetings are held for public input.

East Bay MUD has the authority to control rates for water and wastewater service within the bi-county region. Rate increases generally respond to drought conditions and increased awareness of water conservation. They also fund, design, and construct new infrastructure projects and maintenance. For example, in 2010 the Freeport Regional Water Project will be completed which includes a new pipeline and other infrastructure improvements to provide supplemental water supply in drought times. To offset costs and encourage conservation, a 14% surcharge was added to water bills, that goes into effect when the supplemental water supply needs to be accessed.

### LINKAGES WITH OTHER INITIATIVES

- Suffolk County Department of Health Alternative On-site Sewage Disposal System Study (OSSDS)
- Suffolk County Sewer District Capacity Study
- Suffolk County Agricultural Stewardship Program and Comprehensive Fertilizer Reduction Plan
- Suffolk County Water Resources Management Plan

### ROLE FOR LIRPC

- Engage with various private and public water utilities, government agencies and private operators regarding the protection of the aquifer through consolidation
- Mediate between conservation organizations and municipalities to promote water conservation through the USGBC’s LEED rating system for new and existing buildings and homes
I-2 Develop a regional energy strategy and energy conservation programs to realize an affordable, reliable and diverse low-carbon energy supply.

Long Island has the potential to be a regional leader by breaking new ground in energy research, rolling out sustainable energy strategies on the ground, developing a trained workforce that is at the leading edge of technological innovation, diversifying our energy supplies and creating a culture of sustainable innovation and design that gives Long Island a national reputation as a leader in energy innovation.

CONTEXT

Long Island was once identified as the “cradle of innovation”, as one of the leaders in nuclear physics and DNA research through Brookhaven National Laboratory (BNL) and Cold Spring Harbor Laboratory. Innovation starts with the community, local research institutions, businesses and universities. The tradition of innovation and community involvement allow home and business owners to understand the importance of conserving energy, upgrade to more efficient equipment, and reduce carbon emissions.

Innovation centers like the Stony Brook Advanced Energy Center and BNL need to continue to work with Long Island’s energy utilities such as LIPA - electricity, National Grid – natural gas, and heating oil companies. These organizations are actively seeking ways to optimize distribution, manage demand, reduce operating costs and provide more sustainable fuel sources. A task that is well suited for a smart grid, which is a new approach to having a more sophisticated connected energy network.

About 2% of the Island’s power supply is sourced from on-Island renewable energy and an additional 7% is sourced off-Island from a hydroelectric provider. The remaining energy is sourced from fossil fuels. Long Island needs an additional pipeline to supply natural gas. A target that New York State recently mandated is the 45 on 15 plan, which is to reduce energy demand by 15% and increase renewable energy supply by 30% by 2015.

PROPOSED ACTIONS

2.1 Near-term: LIRPC, LIPA and involvement with the Green Home and Building Consortium to promote efficiency programs and renewable energy incentives through public education and outreach (refer to E-4).

2.2 Near-term: Encourage innovation and investment in renewable energy:
   - Engage with NYSTAR for funding local clean energy start-up companies and university research centers
   - Support feed-in tariffs (FIT) (refer to E-4)
   - Consider additional subsidies for large-scale investment through creative public-private partnerships (refer to E-4)

2.3 Near-term: Secure an additional natural gas pipeline to supply Long Island

2.4 Mid-term: Reduce emissions by requiring that all school buses, garbage trucks and other municipal fleet vehicles run on clean diesel, natural gas/biofuel, or diesel-electric hybrid fuels (DOE and NYSERDA programs are available).

2.5 Mid-term: Aggressively Expand Smart Grid pilot projects and maximize partnership opportunities with the NYS Smart Grid Consortium. Smart grids deliver an integrated information management system which can optimize energy supply and demand for the utilities and home/business owners. Stony Brook and BNL as institutions offer incubation centers for research to advance smart grid and renewable energy technologies. LIPA and National Grid’s involvement streamline this research.

2.6 Mid-term: Encourage Regional Waste Management Board (see Strategy I-3) to actively research and invest in clean waste-to-energy technologies (new biological and thermal treatment systems) to increase renewable energy supply on Long Island.

2.7 Long-term: Repower or construct new on-Island power generating facilities.
**IMPLEMENTATION**

| Responsible entities | NYS Smart Grid Consortium  
|                       | National Grid, LIPA, NYPA, NYISO, NYSTAR  
|                       | Towns and Incorporated villages  
|                       | SUNY Stony Brook  
|                       | Brookhaven National Laboratory  
|                       | New York State Senate  
|                       | Private companies for third party agreement  

| Approvals required | Smart Grid - FERC Order 2006 and Generally Accepted Privacy Principles (GAPP)  
|                    | New York State Department of State (for code changes)  
|                    | New York State Senate for feed-in tariff  

| Key steps | LIRPC’s engagement  
|          | Approval from Department of State for code changes  
|          | Municipal applications for funding from State  

| Costs | Cost is dependent on funding options  

| Financing structure | Tax rebates, loans and grants offered by NYSERDA, LIPA, National Grid, the Federal Government  
|                    | FIT for a 15 to 20 year investment  
|                    | On-bill financing provided by LIPA, National Grid or heating oil supplier  
|                    | NYSTAR funding for research  
|                    | Loans provided by utility or a third-party  
|                    | NYSERDA’s Clean Air School Bus Program  
|                    | NYSERDA’s Clean Fueled Bus Program  
|                    | The Biofuel Station Initiative: Driving Energy Independence for the Empire State (“PON 1093”)  
|                    | Department of Energy (DOE)  

| Challenges | Development of economical storage devices  
|           | Municipalities must take on the task of distribution and enforcement  
|           | Requires behavioral changes  
|           | Allocation of state and town funding  

**CASE STUDY**

**Austin, Texas**

The Texas LoanSTAR (Saving Taxes and Resources) program is the largest state-run building energy conservation program in the U.S. The program is structured around a revolving loan mechanism which allows borrowers to repay loans with cost savings generated from projects. Created in 1988 with funds from the Petroleum Violation Escrow (PVE), the program allows borrowers to repay loans with cost savings generated from projects. Since 1988, LoanSTAR has made 199 loans totalling over $262 million for cumulative energy savings of $256 million ($13 million annual). The program finances energy and water efficient retrofits for state agencies, local government, universities, school districts and county hospitals, and offers a 3% fixed interest rate and 10-year maximum composite loan repayment period.

**City of Boulder, Colorado**

The City of Boulder, Colorado began construction of the smart grid in August 2008. The smart grid is being built by Xcel energy, Boulder’s utility company, along with the National Renewable Energy Laboratory (NREL), the University of Colorado, the National Institute of Standards and Technology, and companies such as Accenture, Current Group, Schweitzer Engineering Laboratories an Ventyx. The first phase, which started with installing smart meters in 10,000 homes, is expected to be completed in September 2010 and will transform the existing metering infrastructure. Subsequent phases will convert substations for remote monitoring; create a web portal for owners to update and control; and connect plug-in hybrid electric vehicles with vehicle to grid technology, battery systems, photovoltaic systems, and household goods to respond to power availability and utility/consumer control.

**LINKAGES TO OTHER INITIATIVES**

- Long Island Green Homes Program, LIPA’s Efficiency Long Island, Energy Star homes policies and NYSERDA/LIPA/National Grid rebate programs  
- New York State Smart Grid Consortium  
- New York State Infrastructure Policy Act  

**ROLE FOR LIRPC**

- LIRPC to help municipalities disseminate energy saving and renewable energy programs  

Long Island Sustainability Plan
I-3 Create a Long Island-wide “zero waste plan” as part of a regional strategy

Zero waste as a philosophy uses a whole system approach to the flow of resources and waste, with the goal to eliminate waste production to the maximum extent feasible and reduce the costs associated with waste management. Even though “zero waste” may not be possible with existing technologies, the goal is to achieve as high a target as possible. It includes source reduction, creation of new markets for recyclables and other materials, and support for various new waste treatment and waste to energy technologies.

CONTEXT

The cost of waste management on Long Island is significant and based on current trends will continue to be high. Costs can be reduced through established waste management techniques, some of which are already in use on the Island but there needs to be a long term consistently applied strategy to consolidate the approach.

Waste generation rates in Long Island are above the national average and waste recycling rates are below the national average. Approximately 20%-30%* of reported waste (only residential and small commercial) is transported off-Island by truck wasting valuable resources that have the potential to produce energy or be composted. In addition, the on-Island waste to energy (WTEs) facilities are at or near capacity.

PROPOSED ACTIONS

3.1 Near-term: Develop a Regional Waste Management Board made up of the towns, incorporated villages and cities to help establish community education programs to reduce waste generation, develop short and long-term recycling targets and establish collection/disposal standards.

3.2 Near-term: Establish reporting standards and monitoring from waste haulers and for recycling and disposal rates in each Town and Incorporated Village.

3.3 Near-term: Regional Waste Management Board to determine Island-wide location for clean composting or other organics processing or recycling sites, consistent with New York State Solid Waste Management Plan.

3.4 Mid-term: Increase the adoption of pay-as-you-throw (PAYT) programs and other best practices across Long Island. National studies have shown that waste can be reduced by 25-45% when such programs are used, which can significantly reduce municipal garbage costs. According to the EPA, well over 40% of all New York State municipalities—over 450 total—use PAYT programs.

3.5 Mid-term: Regional Waste Management Board to draft legislation to incentivize landowners for proper disposal of recyclables and organic wastes.

3.6 Mid-term: Regional Waste Management Board to support expansion of WTEs; investing in cleaner, more efficient technologies

3.7 Mid-term: Study the feasibility of transporting solid waste off of Long Island via rail to reduce emissions and road congestion.

* Source: “Municipal Solid Waste Assessment Nassau and Suffolk Counties Long Island, New York 2006” by the Waste Reduction and Management Institute, School of Marine and Atmospheric Sciences, Stony Brook University ©August 2007
### IMPLEMENTATION

| Responsible entities       | • LIRPC (coordination)  
|                           | • Nassau County and Suffolk County  
|                           | • Each Town and Incorporated Village  
|                           | • Private waste haulers  
|                           | • Covanta  
|                           | • LIPA, NYPA, Independent power providers  
| Approvals required        | • New York State Department of Environmental Conservation (NYSDEC)  
|                           | (State waste authority)  
|                           | • Towns and Incorporated Village  
| Key steps                 | • LIRPC to develop the waste forum and development of the regional waste management task force  
|                           | • Town requirement for private waste haulers to report waste tonnages  
|                           | • Adoption of best practices  
|                           | • Locating compost and WTE site  
| Costs                     | • WTE plants to be determined based on treatment technology and size  
|                           | • Large scale composting facilities approximately $120/ton  
|                           | • Higher revenues for Town’s from use and sale of recyclables  
| Financing structure       | • Public-private partnerships between Towns/Incorporated Villages and private composting facilities  
|                           | • Tax exempt revenue bonds and private equity financing waste to energy facilities  
| Challenges                | • Behavioral changes for residents and workers  
|                           | • Community consent regarding location of composting site (“NIMBY”)  
|                           | • Requires corporation of Towns and Incorporated Villages  

### CASE STUDY

**Oslo, Norway**

Oslo has an integrated waste management system that is based on the Waste Management Hierarchy.

The municipality has had sole responsibility for the collection of all household waste since 1932, with citizens paying a mandatory annual charge of between US$ 150-370 that finances Oslo Municipal Waste Management. Since 1993, this organization has outsourced services with commercial waste operators carrying out collection services on 5-year contracts. In 2005, two waste-to-energy plants were established within a new agency, The Waste-to-Energy Agency.

From 2006-2009, the city has a Waste Management Strategy that, for example, sets ambitious targets for sorting of plastics and organic waste. This strategy aims to establish a “recycle and reuse” society.

In 2006, more than 200,000 metric tons household waste was collected and of this 1% was reused, 27% material recovered, 67% energy recovered and only 5% went to landfill. 58,000 metric tons of CO2 were avoided through use of waste to generate energy for the city’s district heating system.

### LINKAGES TO OTHER INITIATIVES

- Stony Brook Waste Reduction and Management Institute.  

### ROLE FOR LIRPC

- LIRPC to engage with the Waste Reduction and Management Institute at SUNY Stony Brook to educate community groups and waste authorities through Newsday, Long Island Press and other local newspapers
Long Island surface waters include the Atlantic Ocean, the Long Island Sound (an Estuary of National Significance), the Peconic and South Shore Estuaries, the Great South Bay, and smaller harbors, bays, rivers, ponds and wetlands. The Atlantic Ocean is a major economic, recreational and environmental asset to Long Island. The Sound is a natural refuge for feeding, breeding, nesting and nursery areas for a diversity of plant and animal life, and contributes to the regional economy through boating, commercial and recreational fishing, commercial transport of goods, swimming, and tourism. Embayments are being stressed through point and non-point sources of pollution. These sources need to be mitigated if the health of these waters is to be protected.

CONTEXT

Since last century, the Long Island Sound has been inundated with surface water pollution caused by high nitrogen and phosphorus levels in sewage discharges, lawn and agricultural runoff from New York City, Connecticut and Long Island. These conditions have diminished tidal wetlands, caused eutrophication suffocating aquatic species and destroyed wetlands, and elevated pathogen levels causing shellfishing restrictions. State and Federal authorities are continuing to restrict the amount of nitrate (and phosphates) in sewage effluent discharge into these water bodies. In addition, regional organizations in New York City, Connecticut and Long Island are working together to improve the quality. Although conditions are improving in some areas, organic and nitrogen loading from sewage treatment plants along with nutrient, herbicide, pesticide, and bacteriological loading from stormwater runoff, and siltation of water bodies should be reduced.

PROPOSED ACTIONS

4.1 Near-term: Promote sustainable drainage systems (SUDS) with landscape and streetscape design by using natural and structural mechanisms to mimic natural drainage, control water flow close to the source and promote natural filtration of pollutant loads from stormwater.

4.2 Near-term: Promote Green Streets programs in proposed projects, particularly streetscapes. Green streets mimic the past local hydrology using vegetation to manage stormwater runoff and promote infiltration.

4.3 Near-term: Adjust zoning codes to restrict development within 100 feet of any areas of special environmental concern, or within setback distances prescribed in applicable regulations - whichever is more stringent, unless proper mitigation of impacts is strictly implemented.

4.4 Long-term: Develop incentive programs and mandates to:

• Promote stormwater, graywater and blackwater collection and reuse for non-potable uses (including process water use)
• Promote green roofs, green alleys and permeable hardscape
• Promote private and public sector participation in land/habitat conservation easement
**IMPLEMENTATION**

| Responsible entities          | • NYSDEC  
|                              | • Suffolk and Nassau DOH  
|                              | • Suffolk and Nassau DPW  
|                              | • Army Corps of Engineers  
|                              | • New York State Department of States |

| Approvals required            | • County DPWs to approve SUDS Best Management Practices in stormwater requirements  
|                              | • Town Zoning boards |

| Key steps                     | • Towns and municipalities to incorporate green streets and SUDS in street design standards  
|                              | • Changes to land-use through town zoning ordinances  
|                              | • Sewage treatment plants to continue to maintain and improve technologies |

| Costs                         | • Minimal costs for stormwater practices  
|                              | • Higher costs for upgrading sewage treatment plants |

| Financing structure           | • Bi-county financing |

| Challenges                    | • Requires approval from all Towns bordering the Sound  
|                              | • Requires coordination with NYSDEC, County government and municipal government |

**CASE STUDY**

**Staten Island, New York**

The Staten Island Bluebelt provides ecologically sound and cost-effective storm water management for roughly one-third of Staten Island. Launched in 1997, the initiative was developed in response to frequent localized flooding and septic tank failures that wreaked havoc on the borough after rain events.

Today, nearly 36% of Staten Island's precipitation drains into the Bluebelt, natural drainage corridors that include streams, ponds, and other wetland areas. The system covers nearly 10,000 acres, across 16 watersheds, and over the next 25 years, New York City plans to add 4,000 more acres as part of the PlaNYC 2030 Initiatives.

The system has saved an estimated $80 million in infrastructure costs, and has saved home and business owners money in flood damages. Water quality has improved as well, with the natural filtration of the system effectively removing 65% of total organic carbon, 93% of fecal coliform and most other excess nutrients from stormwater runoff.

Additionally, the system adds valuable community resources such as open and recreational space and access to diverse habitats. Illustrating this, the value of properties within the vicinity of the Bluebelt has significantly appreciated, increasing the city’s tax base.

In 2005, the US Environmental Protection agency recognized the leadership of the Bluebelt program with an Environmental Quality Award. The program is a functional demonstration of how natural systems for stormwater management and wetland preservation can be economically prudent and environmentally responsible.

**LINKAGES TO OTHER INITIATIVES**

- EPA Long Island Sound Study  
- The Peconic Estuary Program  
- The Long Island Sound Water Quality Monitoring Studies  
- Nassau County Storm Water Management Program (NCSWMP)

**ROLE FOR LIRPC**

- Work with community organizations and county/town public works, engineering and planning agencies to promote green streets and sustainable drainage systems, and support zoning code changes.
Long Island is both the longest and the largest island in the continental United States with nearly 400 miles of coastline. As a result of increasing temperatures and global warming, rising sea levels along Long Island’s coast are ultimately likely. Therefore, coastal communities will likely experience more frequent and intense coastal flooding and a shortened 100-year flood recurrence period.

**CONTEXT**

By the end of the century, model-based projections for mean annual sea level rise in Long Island show:

<table>
<thead>
<tr>
<th>Decade</th>
<th>IPCC-Adapted Methodology</th>
<th>Rapid Ice-Melt Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020s</td>
<td>2 to 5 in</td>
<td>5 to 10 in</td>
</tr>
<tr>
<td>2050s</td>
<td>7 to 12 in</td>
<td>19 to 29 in</td>
</tr>
<tr>
<td>2080s</td>
<td>12 to 23 in</td>
<td>41 to 55 in</td>
</tr>
</tbody>
</table>

Visualization of inundation resulting from a projected 40-inch (1-meter) sea level rise possible by the 2080s from a rapid ice-melt scenario of future climate change (to right).

The responses to potential sea-level rise will include adaptation measures, designing resilience into human and natural infrastructure systems.*

**PROPOSED ACTIONS**

5.1 **Near-term**: Identify and prioritize protection of low-lying areas and wetlands vulnerable to inundation through natural systems (e.g. preservation of estuaries, wetland and barrier islands) and structural measures (e.g. sea walls and flood barriers). Management challenges include coastal flooding, coastal erosion, beach and salt marsh loss, cliff failure, and saltwater intrusion.

5.2 **Near-term**: Protect key municipal infrastructure (e.g. streets and sewers) vulnerable to flooding.

5.3 **Near-term**: Revise building codes in the City of Long Beach, Town of Hempstead, Oyster Bay, Babylon, Islip, South Hampton, East Hampton, and Shelter Island to promote flood protection of basements and lower stories (e.g., install flood barriers, use materials resistant to increased saltwater exposure, elevate mechanical services, encourage soft first stories) and to provide guidance for the replacement and replaceability of structures which may be lost to coastal erosion and flooding.

5.4 **Mid-term**: Protect sewers and Wastewater Pollution Control Plants (WPCP) from an increase in inflow of seawater and reduced ability of WPCP effluent discharge by gravity.

5.5 **Long-term**: Evaluate risk of pollution released from brownfields and other unprotected waste sites due to increased flooding or seawater inundation. Prioritize remediation or implement strategies to reduce movement of contaminants from flooding or leaching.

5.6 **Long-term**: Develop model land-use overlay guidelines which may be adopted at the discretion of Long Island towns to incentivize appropriate development patterns in vulnerable areas.

*While there is significant discourse and even disagreement regarding the potential impact of climate change, the science indicates that man’s utilization and conversion of the Earth’s natural resources will have an impact on our atmosphere and, ultimately, our climate. LIRPC believes it is prudent to plan for that eventuality, the actual extent of which will be revealed over time.*
### IMPLEMENTATION

| Responsible entities | • Nassau and Suffolk Offices of Emergency Management  
|                       | • City Councils  
|                       | • State policy-makers  
|                       | • New York State Emergency Management Office  
|                       | • New York State Sea Level Rise Task Force  
|                       | • Town Emergency Management Departments  
|                       | • Local Fire and Police Departments |

| Approvals required | • City and state legislation to adopt proposed actions in zoning and building codes  
|                    | • Nassau and Suffolk County Department of Transportation, Department of Public Works  
|                    | • New York State Department of Transportation |

| Key steps | • Draft an emergency evacuation plan for high risk areas  
|           | • Training of government employees and community representatives  
|           | • Identification of vulnerable areas  
|           | • Changes in land-use zoning and flood protection requirements in building codes |

| Costs | • To be determined |

| Financing structure | • Funding opportunities through New York State Emergency Management Office and FEMA (Flood Mitigation Assistance program) |

| Challenges | • Attracting political support and public interest.  
|            | • Regional and global climate models agree on trends in temperature, precipitation and sea level changes due to future climate change in the Long Island region. However, exact predictions for specific locations remain undefined, complicating long-term planning and investment and delaying community and political interest.  
|            | • Funding availability  
|            | • Coordination regional implementation between relevant agencies |

### CASE STUDY

**California Natural Resources Agency**  
*2009 California Climate Adaptation Strategy, Executive Order S-13-2008.*  
Following an executive order from the state Governor, California prepared and is in the process of implementing a comprehensive plan to address climate change-related risks. The plan covers adaptation planning by state agencies and municipalities, requires the or the projected effects of climate change to be integrated into changes to land-use planning ordinances, provides a framework for improving emergency preparedness and response capacity for climate change impacts, expands research and monitoring for State climate change risks, mandates the development of comprehensive climate change vulnerability assessments by state and local agencies, and provides for an outreach campaign.  
www.climatechange.ca.gov/adaptation/

### ROLE FOR LIRPC

• Engage with Nassau County and Suffolk County to form a regional hazard mitigation plan  
• Communicate with Towns and Municipalities to include FEMA’s Methodology for Estimating Potential Losses from Disasters as a reference in RFPs for new projects

### LINKAGES TO OTHER INITIATIVES

• Suffolk County Multi-Jurisdictional All-Hazard Mitigation Plan  
• New York State Sea-level Rise Task Force and Climate Action Plan
I-6 Coordinate an emergency preparedness plan across Long Island

Long Island is at high-risk of large-scale catastrophic weather events such as hurricanes as well as threats of terrorism, yet its geography and transportation networks create a bottleneck for evacuation. Long Island needs a coordinated, Island-wide and up-to-date emergency response and evacuation plan in the case of catastrophe.

CONTEXT

The International Hurricane Research Center ranks Long Island eighth in the United States for areas at greatest hurricane risk. Nassau and Suffolk County have evacuation plans for disasters that would require a small town or city evacuation but a coordinated, Island-wide evacuation plan has not been successfully developed.

The responses to potential natural or man-made disasters and developing an evacuation plan/disaster programs for all of Long Island is imperative. Coordinating plan development, training, communication, and evacuation execution is key to building the cross-Island partnerships necessary to develop and implement an evacuation plan. The development of the plan should integrate and build on existing community and regional evacuation plans as well as related initiatives within this sustainability plan.

PROPOSED ACTIONS

6.1 Near-term: Establish emergency response and evacuation plan for both high-risk communities and for the entire Island focusing on contra-flow and phased evacuation. Risks should include vulnerabilities to natural events, man-made events, and capability of the communities to respond. Coordinate responsibilities, actions and training amongst towns, cities, and villages and communicate strategy to residents through multi-media outlets such as newspapers, Nassau County Emergency Notification System and the State’s NY ALERT program.

6.2 Near-term: In addition to evacuation plans, work with the Morrelly Homeland Security Center and various governmental agencies to enhance ability to safely withstand an event on Long Island and reduce the need for mass evacuation. Work with codes (zoning, building, etc.) to reduce risks from natural disasters. Work with local and state agencies to implement resilience measures such as the Suffolk County All Hazard Mitigation Plan. Locate areas and materials for temporary housing for National Guard and other emergency support crews.

6.3 Mid-term: Assist vulnerable residents and communities by encouraging high-risk individuals who need special assistance (the elderly, those with small children, those with significant medical constraints, those without ready-access to transportation, etc.) to register with a central database so that they can be contacted and assistance given in the event of an evacuation. Coordinate with hospitals, medical centers, homeless shelters, etc. to identify high-risk people and streamline action.

6.4 Long-term: Implement strategies to protect public transportation networks and low-lying highways vulnerable to delays from inundation, flooding and other storm risks and identify alternative service plans.
## IMPLEMENTATION

| Responsible entities | • Nassau and Suffolk Offices of Emergency Management  
|                      | • Town Boards and City Councils  
|                      | • State policy-makers  
|                      | • New York State Emergency Management Office  
|                      | • New York State Sea Level Rise Task Force  
|                      | • Town Emergency Management Departments  
|                      | • Local Fire and Police Departments |

| Approvals required | • Nassau and Suffolk County Department of Transportation, Department of Public Works  
|                   | • New York State Department of Transportation  
|                   | • New York State Office of Emergency Management |

| Key steps | • Draft an emergency evacuation plan for high risk areas  
|           | • Training of government employees and community representatives  
|           | • Identification of vulnerable areas |

| Costs | • To be determined |

| Financing structure | • The Department of Homeland Security (DHS) provides assistance programs — such as the State Homeland Security Grant Program (SHSGP) and the Urban Area Security Initiative (UASI) — to states and localities to assure readiness for both terrorist attacks and natural and man-made disasters. Among the eligible activities for which states and localities may use DHS assistance are (1) state and local planning to respond to terrorist attacks and catastrophic events, and (2) conducting exercises to test these plans. |

| Challenges | • Attracting political support and public interest.  
|           | • Funding availability  
|           | • Coordination regional implementation between relevant agencies |

## CASE STUDY

### City of Houston, Texas

On Saturday, September 24, 2005, Category 3 Hurricane Rita made landfall between Texas and Louisiana. An estimated 2.5 million people – more than twice the predicted levels – evacuated from the largely urban/suburban areas in southeastern Texas to the more rural communities of the north. The evacuation process was complicated by a number of factors including the late change in the hurricane’s course meant more people were evacuated than necessary, the evacuation of inland counties added to congestion, the lack of adequate traffic control in rural counties interrupted flow, vivid warnings motivated residents to evacuate, and finally, the timing of Rita – just one month after Hurricane Katrina – provided additional psychological motivation to evacuate. On September 22, two days before landfall, it was estimated that 150,000 vehicles sat bumper-to-bumper on four lanes over a 30-mile stretch in one rural county.

Recognizing the need for systematic evacuation planning and operations, in 2007 Harris County officials unveiled a plan to stagger future evacuations of coastal and low-lying areas and enable people with the greatest evacuation need to get away first. The plan uses Zip Codes to identify the sequence of communities to be evacuated and ensure roads are clear for people leaving from high-risk areas. The plan also identifies a contra-flow strategy for evacuation corridors in which both directions of the roadway are opened up for leaving vehicles.

## LINKAGES TO OTHER INITIATIVES

• Suffolk County Multi-Jurisdictional All-Hazard Mitigation Plan  
• Town Emergency Management Plan
L-1 Establish development guidelines that serve to preserve open spaces and protect the natural environment

Long Island has superior open space, recreational and agricultural assets as well as a significant reserve of undeveloped land. These assets truly enhance the Island’s quality of life. Regional strategies are required to preserve our environmental quality and reduce threats from development and over-intensive use.

CONTEXT

Long Island has exceptional natural assets including the Atlantic Ocean, Long Island Sound and an extraordinary park system. Long Island’s beaches, bays, rivers, streams, forests, wetlands, and meadows provide a distinctive character and beauty, and serve to attract hundreds of thousands of tourists each year. Long Island governments and not-for-profit organizations have successfully collaborated on farmland preservation and conservation projects, many of which are national models. Long Island is ecologically diverse with water bodies, wetlands, flora and fauna and valuable wildlife habitats. The Pine Barrens, which has been selected by the Conservancy’s Fire Learning Network as one of five demonstration areas, is a case in point. Long Island has substantial remaining undeveloped areas outside of farmland and designated conservation areas, primarily in Eastern Suffolk County, but many of these are under threat by leapfrog development. Projections show that up to 28,000 acres of land currently designated as developable will remain undeveloped as of 2035; however, without systematic land-use controls, many of these are areas are threatened.

PROPOSED ACTIONS

1.1 Near-term: Create training programs for youth on Long Island to work in the preservation and promotion of natural resources. Such programs could also contribute to raise awareness of the value and potential of Long Island’s natural resources.

1.2 Mid-term: Set targets and create an action plan to improve access to open spaces, recreational, and cultural resources. Identify critical indicators to be observed in order to protect the natural areas while understanding the needs for residential, commercial, and agricultural development. Design mechanisms to increase accessibility to open space assets for the widest possible stakeholder constituency.

1.3 Mid-term: Designate developable priority areas in downtown areas to target growth while preserving critical natural, open, and recreational spaces.

1.4 Throughout: Convene an open space task force to coordinate and leverage open space acquisitions and strategies currently conducted by a multiplicity of government agencies and non-profit land trusts such as The Nature Conservancy. Link infrastructure requirements, such as pure drinking water demands and economic drivers including the agricultural economy and tourism to funding sources. Incorporate and publicize the findings of the Trust for Public Land’s “The Economic Benefits and Fiscal Impact of Parks and Open Space in Nassau and Suffolk Counties” report to help underscore the need for continued open space preservation. Work together as a region to secure grants, line items and dedicated park funds from New York State and other governmental and private sources. Serve as a clearing house for successful open space preservation techniques and tools used within and outside the region.
### IMPLEMENTATION

| Responsible entities | • Long Island Sound Coastal Management System  
|• The Comprehensive Conservation Management Plan  
|• Long Island Sound Study  
|• Upton Ecological and Research reserve  
|• Museum of Long Island Natural Sciences  
|• Nature Conservancy of Long Island  
|• Long Island Sound Waterborne Transportation Plan  
|• New York League of Conservation Voters Plan, etc. |

| Approvals required | • County Planning Department  
|• Town/City resolution or legislation for preservation policy |

| Key steps | • Work with local education institution to develop and launch programs for youth on Long Island to work in the preservation and promotion of natural resources.  
|• Conduct financial analysis to determine target to improve accessibility and maximize benefits to the community  
|• Conduct land use analysis to determine policy mechanisms to control development and preserve natural resources |

| Costs | • Cost to be determined by the extent of the strategies |

| Financing structure | • Bi-County funding  
|• Explore Federal or State funding sources for natural preservation and touristic economic development |

| Challenges | • Requires cooperation of multiple governments  
|• Requires long term monitoring |

### CASE STUDY

**Pinelands Development Credit Program**

New Jersey’s PDC Program is a transfer of development rights (TDR) program that helps to redirect growth from ecologically-important and agricultural lands in the State’s Pinelands region to infrastructure- and/or transit-supported growth areas.

The program allows owners of sensitive land or “sending areas” to sell their right to build via PDCs to another person or party. The development rights on that land are then transferred to predetermined growth areas or “receiving areas,” and conservation easements are placed on the sending areas once the PDCs are transferred. Receiving areas generally allow 50% more homes to be built using PDCs than would otherwise be permitted.

PDCs can be bought and sold privately or through the publicly chartered Pinelands Development Credit Bank, where the rights are purchased by the Bank and sold at a later date. Most PDCs are sold to developers, however in 1999 the state began buying and retiring PDCs, removing them from the market.

The New Jersey Transfer of Development Rights Act authorizes any municipalities in the State to set up a TDR program, provided that they have received approval from the State Planning Commission.

As of April 2010, nearly 59,000 acres of important conservation and farm lands have been permanently protected.

### LINKAGES TO OTHER INITIATIVES

• Collaborate with the Nature Conservancy and local land trust agencies to secure and protect open space though the NYS Green Bond Act, Brookhaven’s Environmental Bond Act and the Nassau County Bond Act Programs

### ROLE FOR LIRPC

• Collaborate with cultural institutions and parks departments to develop training programs for Long Island’s youth  
• Help local parks and cultural institutions apply for grant money to improve localized access to their facilities
L-2 Complement town and village land use regulations with overlay guidelines

Land-use regulation on Long Island resides primarily with the jurisdictional zoning authority of the towns, villages and cities. Nevertheless, opportunities exist for the Long Island Regional Planning Council to work with the Counties to provide guideline land-use regulation tools that are sensitive to regional objectives for transit-supported development, sustainability, affordability, redevelopment, and land management.

CONTEXT

Towns presently lack guidance on how land-use planning and zoning decisions may be made in a manner that promotes regional sustainability, housing affordability, redevelopment and conservation objectives. Overlay measures would provide a means for regional sustainability intentions to be communicated to towns in the form of performance zoning guidelines which, if voluntarily adopted by them, would complement existing zoning and land-use controls. NYMTC projections show significant future development and redevelopment opportunities, and land-use regulation would provide a key means through which sustainable growth may be facilitated and incentivized.

This strategy associates with several others in this plan including: T-2 (Create vibrant, transit-supported communities), T-3 (Establish transit-served job centers), L-4 (Protect neighborhood character and provide for location-compatible and appropriate new development), EQ-1 (Develop a fair-share housing plan for creating the necessary next-generation and mixed-income workforce housing for Long Island), and EQ-3 (Catalyze social and economic development through arts and cultural programs).

PROPOSED ACTIONS

2.1 Near-term: Develop model overlay guidelines for transit-supported development and vibrant downtowns, and land use and urban design guidelines for transit-supported hubs, and performance-based guidelines for areas outside of transit-supported developments (TSDs). Overlay zoning guidelines would, if adopted by towns, modify existing zoned development capacity and link that capacity to sustainability measures and local goals for the form and character of development. TSD guidelines would include provisions for mixed-use zoning, density targets, and parcelization guidance to facilitate TSD-related transportation and economic development objectives. Performance guidelines for non-TSD areas would serve to indirectly regulate the intensity and density of new development, manage land-use efficiency, encourage redevelopment and land recycling, deter leapfrog development, and facilitate conservation/preservation of valuable community assets, open space and character based on particular targets.

2.2 Near-term: Create model housing affordability, housing diversity and housing work-location proximity incentive zoning guidelines. Overlay incentive zoning guidelines would, if adopted by towns as zoning overlays, provide a system of land-use incentives and bonuses designed to encourage development that meets with affordability and equity goals.

2.3 Long-term. Develop a regional sustainable land-use incentive program. A comprehensive program will include features such as targeted development impact fees, priority development inventories of re-developable sites, land-banking techniques, and transferable development rights between hubs and targeted conservation areas. Such a program would serve to protect and reinforce existing community character as well as to facilitate more sustainable patterns of development.
IMPLEMENTATION

| Responsible entities | • Long Island Regional Planning Council  
|                      | • Taskforce or taskforces to be formed of town and county planning officials |
| Approvals required   | • None, future adoption responsibility will rest primarily with the towns  
|                      | • SEQR review of model overlay guidelines may expedite adoption by towns |
| Key steps            | • Obtain buy-in from town and county governance  
|                      | • Scope tasks and obtain funding  
|                      | • Hire consultant(s) to survey town officials, undertake public outreach, and develop and publish model guidelines and redevelopment program  
|                      | • Identify and develop catalyst projects and implementation opportunities in coordination with the towns |
| Costs                | • LIRPC staff time and funding to retain consultants to develop guidelines  
|                      | • If SEQR route is taken, costs would be significantly greater |
| Financing structure  | • County and town, possibly with outside NGO engagement |
| Challenges           | • Town buy-in, town code-making and legislative processes to adopt voluntary guidelines  
|                      | • Differing views on location and form of future development |

CASE STUDY

Charlotte, North Carolina

As part of a regional effort to implement the vision of the 2025 Integrated Transit/Land Use Plan, the City of Charlotte and Mecklenburg County (CharMeck) created a special transit-oriented development zone that applies to a half mile area surrounding transit stations. The TSD zoning districts have guidelines that require compact, mixed-use development and facilities that support bicycling and walking safety and access to transit. CharMeck has established three different TSD zoning districts: Residentially Oriented, Employment Oriented, and Mixed-Use Oriented. Put into practice simultaneously with the introduction of the new light rail line, the TSD zones have been adopted in the areas surrounding 8 of the 15 stations as of 2009. In order to encourage the use of the new TSD zoning, the City created a TSD Response Team that aided developers along the process.

Fort Collins, Colorado

Performance-based zoning guidelines

Fort Collins implemented guidelines for performance-based zoning through its Land Development Guidance System. The guidelines used terrain, ecological, sustainability, affordability, open space, and economic development criteria to determine the intensity and form of permitted new development. Originally, the system was designed to replace traditional zoning, but eventually the city integrated the performance standards as an overlay to a new Smartgrowth-based system of traditional Euclidean zoning.

North Jersey Transportation Planning Authority

Brownfield inventory and redevelopment land-use guidelines

The NJTPA, the metropolitan planning organization (MPO) covering 13 counties and two cities (Newark and Jersey City) in northern New Jersey, developed a comprehensive survey and inventory of redevelopment sites, including land-use guidelines, economic development priorities, and a pilot project program. Development incentives were combined with incentive zoning overlay proposals prioritizing employment and affordable housing.

LINKAGES TO OTHER INITIATIVES

• Town TSD and transit hub plans (Mineola, Wyandanch, etc)  
• Town zoning and land-use studies  
• Regional Plan Association studies

ROLE FOR LIRPC

• Collaborate with town/village/county boards and permitting departments to develop a series of model standards and pilot programs for land use zoning
L-3  Protect farmland and ensure local food access

Farming is a vital part of Long Island’s economy and heritage, but agriculture remains threatened by development and struggles to maintain economic viability. Protecting commercial agriculture and the farmland that hosts it and ensuring the availability of locally generated products to residents as well as potential exports off-Island are key priorities for Long Island.

CONTEXT

Farming is an important part of Long Island’s heritage and economy, with Suffolk County’s agricultural industry ranked first in New York State. Approximately 550 farms operating on approximately 34,000 acres generate just under a quarter of a billion dollars in annual sales, of which only 0.1% are subsidized. The farmland also contributes to the scenic beauty and sense of place that helps define Long Island while fueling the large tourism and second home industries. Suffolk County has a successful program, the nation’s oldest, for purchasing development rights to permanently preserve farmland, augmented by a variety of other farmland preservation programs administered largely by local governments and not-for-profit organizations. Still an additional 10,000 acres of farmland are threatened by development. Even keeping protected farmland available for farming is a challenge as luxury estates drive up the prices of surrounding protected land. Unlike the long-running “Jersey Fresh” campaign supported by an approximately $1 million annual multi-media campaign, the largely underfunded “Grown on Long Island” and “Pride in New York” marketing programs are struggling. Supported agriculture programs, farmers markets, and agricultural tourism have considerable scope for expansion.

This strategy associates with others in this plan including E-8 (Develop a “Buy Long Island First” strategy for promoting Long Island products, goods and services and establish a framework for the networking of local producers and consumers) and L-1 (Establish development guidelines that serve to preserve open spaces and protect the natural environment).

PROPOSED ACTIONS

3.1 Near-Term: To help keep land affordable and available for farmers, continue to fully fund and support existing county, town and not-for-profit agricultural preservation programs and devise additional easement provisions to favor farming. Vermont and other regions can provide models on such easements.

3.2 Near-Term: Encourage schools/districts to purchase food from local Long Island growers.

3.3 Mid-Term: Develop a multi-faceted economic development initiative including: Promote through a refined branding strategy comparable to the “Napa Valley”; an education campaign highlighting the nutritional, carbon footprint and other benefits of fresh, locally grown food; a marketing strategy linking consumers desire to protect the landscape, the farmers and the Long Island heritage with the importance of purchasing perhaps higher priced Long Island products; the emotional connection between consumers and Long Island produce cultivated through agriculture. Integrate and coordinate with school lunch programs, hospitals and other large institutions; school education programs and local community organizations; Calverton commercial food incubator (pending); development of Community Supported Agriculture Programs; and producer-direct marketing cooperatives.

3.4 Long-Term: Explore ways to leverage planned freight transportation improvements to leverage improved outward logistics for transporting and distributing foodstuffs produced in Eastern Long Island.
## IMPLEMENTATION

| Responsible entities | • Regional economic development entity to be created  
|                      | • Suffolk County Government  
|                      | • Long Island Farm Bureau  
|                      | • New York State Department of Agriculture & Markets  
|                      | • Cooperative Extensions (Cornell University)  
|                      | • Farmland trusts and other not-for-profits  
|                      | • Towns  
| Approvals required   | • No official government approvals needed to convene inter-agency, public/private entity  
|                      | • County, town, and agency buy-in  
| Key steps            | • LIRPC to convene inter-agency entity  
|                      | • LIRPC seek funding to hire marketing consultant  
| Costs                | • Relatively minimal except for marketing consultant  
| Financing structure  | • Public IDA funding, private Long Island organizations and foundations, public grant funding  
| Challenges           | • Past funding efforts have limited the benefits of a successful branding and marketing campaign  

## CASE STUDY

### Loudoun County, Virginia

Suburban Washington DC-area Loudoun County, through a series of publicly-supported inter-agency and public-private initiatives, has been able to successfully combine land-use based farmland protection programs, similar to those successful in Suffolk County, with a comprehensive agricultural economic development initiative, a network of county-supported sales cooperatives, a system of farmers markets and farm-to-consumer distribution programs, and a package of educational outreach initiatives. County programs include the Loudoun County Office of Rural Economic Development, and the Loudoun Valley Homegrown Markets Association. Private ventures which have emerged out of the county’s programs include SmartMarkets, Inc., a quality-assurance and source-guarantee program for organic producer-direct farmers markets.

The County also administers, in conjunction with the Virginia Cooperative Extension, a residential agriculture program called the Loudoun County Master Gardeners Program. The program focuses on the use of residential parcels for commercial horticultural and vegetable crop production. The program provides homeowners with technical assistance, regulatory expediting, and sales and marketing support.

## LINKAGES TO OTHER INITIATIVES

- Creation of a regional economic development corporation.

## ROLE FOR THE LIRPC

- Convene inter-agency public/private and not-for-profit entity
L-4  Protect neighborhood character and provide for location-compatible and appropriate new development

As a complement to land-use policies which facilitate more sustainable patterns of future development, measures to protect and improve quality of life and existing neighborhood character and safety may be considered. The Long Island Regional Planning Council is in a position to provide guidance for towns on how neighborhood character and security and existing patterns of development may be protected while new, more sustainable development policies consistent with Strategies L-1 and L-2 are considered.

CONTEXT

Long Island communities draw their identities from their distinct characteristics. Model voluntary guidelines designed to protect and accentuate the unique character of Long Island’s neighborhoods may be developed for the consideration of towns. These guidelines would have the general purpose of ensuring that new development is both compatible with and appropriate to their specific locational contexts. Guidelines may be considered alongside new zoning overlays and other types of land-use regulation, and guidelines may be differentiated for local requirements, thereby respecting neighborhood differences. LIRPC planners anticipate that new development will be focused on certain, targeted areas, while most existing neighborhoods would remain essentially unchanged.

PROPOSED ACTIONS

4.1 Near-term: The following three types of model guidelines may be considered and developed: (1) design review processes for new projects, empowering towns and local stakeholders to set and enforce standards of compatibility and appropriateness for new development; (2) guidance on how town officials might develop standards of aesthetic regulation such as form-based coding, urban design standards, and streetscape design standards that accentuate and reinforce elements of neighborhood character they deem appropriate; and (3) guidance for the development of town-level historic preservation standards, and provisions for the designation and protection of historically important neighborhoods and districts. Guidelines may be designed to be differentially applied to designated TSDs and downtown redevelopment areas, on the one hand, and areas outside of the TSDs and downtown redevelopment areas, on the other hand.

4.2 Long-term. Development of an Island-wide historical preservation program focused on identifying, promoting and protecting both buildings and neighborhoods and districts of special distinction and value.
## IMPLEMENTATION

| **Responsible entities** | • Long Island Regional Planning Council  
|                        | • Taskforce or taskforces to be formed of town and county planning officials |
| **Approvals required** | • None, future adoption responsibility will rest primarily with the towns |
| **Key steps** | • Obtain buy-in from town and county governance  
|            | • Scope tasks and obtain funding  
|            | • Hire consultant(s) to survey town officials, undertake public outreach, and develop and publish model guidelines  
|            | • Identify neighborhoods and districts of special distinctiveness and value  
|            | • Identify and develop catalyst projects and implementation opportunities in coordination with the towns |
| **Costs** | • LIRPC staff time and funding to retain consultants to develop guidelines |
| **Financing structure** | • County and town, possibly with outside NGO engagement |
| **Challenges** | • Town buy-in and regulatory process  
|            | • Differing views on what is compatible and appropriate  
|            | • Equity and Fair Housing considerations with respect to coordinated regional desires to develop policies that seek to limit densification of areas outside of TSDs/downtowns |

## LINKAGES TO OTHER INITIATIVES

- Town TSD and transit hub plans (Mineola, Wyandanch, etc)  
- Town zoning and land-use studies  
- Regional Plan Association studies

## CASE STUDY

### Lowell, Massachusetts
**Lowell Zoning Ordinance, Design Standards**

Lowell has become a national leader in the use of land-use regulation and design guidelines to protect the city’s existing grain and patterns of development and the reinforce that pattern through regulation of future development. Lowell supplements its zoning code with city-wide overlays, scaled to the block-scale, designed around assessments of neighborhood character based on historically significant development patterns. Overlay design standards cover form, aesthetic character, relationship between buildings and streets, and historical preservation objectives. The overlays are supported by a number of regulations enacted by the city council to empower neighborhoods to engage in an active design review process.

### Arlington County, Virginia
**Orange Line Corridor**

Arlington County, located just across the Potomac River from Washington, D.C., leveraged the arrival of Metro rail to recreate itself into a prosperous, livable, and sustainable community that has become an attractive destination for employers, businesses, and residents.

Arlington’s leaders and citizens recognized the potential of the Metro rail system as a catalyst for growth and economic development. A planning process was undertaken to allow appropriate growth and development that met community needs and wants while preserving area character.

As a result, Arlington changed the zoning around each metro station along the line and adopted a plan that required a mix of uses, and compact, walkable development patterns. Importantly, the plan also preserved older neighborhoods in the county that are farther from rail stations, steering growth to the rail corridor. Today, that corridor represents about 8% of the County’s land, yet is responsible for 33% of their property tax revenues.

## ROLE FOR LIRPC

- Collaborate with town/county planning boards and permitting departments to develop a series of model standards and pilot programs
EQUITY
Today, Long Island’s population is increasingly diverse; 24% of Long Islanders overall are Black, Latino, or Asian. But Long Island remains highly segregated; the populations of many communities are between 90% and 100% white. However, 54% of the population will be non-white by 2035.

Concentration of poverty – along racial and ethnic lines, and geographically – persists as well and is a significant obstacle to local governments seeking to provide good schools and public services.

In a globalized economy, diverse and inclusive regions will have competitive advantages over those that fail to welcome newcomers, and to provide opportunity and a high quality of life to all racial and ethnic groups. A diverse population brings skills and entrepreneurial energy, as well as connections to social and business networks throughout the world.

The following section offers many strategies developed to improve equitable conditions on Long Island. While included in this section of the plan, it is important to note that these strategies are not the only ones with equity components; several others in each of the three preceding thematic sections – Tax & Governance, Economy, and Environment & Infrastructure – have elements that promote a more equitable, fair and balanced quality of life for all Long Islanders. Examples include:

• TG-1 Maintain and improve academic achievement and assure equal education opportunities for all in the K-12 system, while containing school costs to ease the property tax burden

• E-7 Stimulate development and preservation of mixed-income workforce housing options

• T-3 Establish transit-served job centers

Racial and economic inequality among Long Island’s communities translates into large and growing disparities in quality of life and access to opportunity, particularly access to education.

• The burdens of fragmented and inefficient delivery of key public services, particularly education, fall most heavily on low- and moderate-income communities. As the costs of those services continue to rise, communities with the lowest levels of taxable property wealth will be unable to sustain essential services, or to prepare their children to compete in a 21st-century economy.

• Patterns of racial segregation in housing persist. Overt racial steering and discrimination by real estate professionals and lenders still occurs, and enforcement by state and federal agencies is poor. And some nominally race-blind policies, such as giving local residents preference in new affordable housing, perpetuate existing patterns of segregation.

• Key sectors of Long Island’s economy rely increasingly on an immigrant workforce, but businesses and communities have largely failed to grapple with the short- and long-term implications of that reliance. Agriculture, landscaping, construction, and hospitality all depend upon the availability of seasonal, transient, and contingent workers. Workers may be single adults, supporting families in their home countries, or they may have established their families on Long Island. The survival strategies through which many workers obtain shelter, transportation, and work are sometimes problematic for their host communities. They place workers in conflict with local authorities, and often expose them to harassment and violence.
EQUITY

ASSETS  While Long Island’s growing diversity challenges some assumptions about regional and local identity, an equitable and diverse Long Island will also be an economically and culturally vital place, capable of attracting 21st century industries and workers. Today’s Long Islanders seek the same advantages that were sought by earlier generations – economic opportunity coupled with a high quality of life, and particularly with access to quality education for their children. And each group contributes its assets to the mix:

• Long Island’s long-established African American, Latino, Asian, Indian and other growing ethnic communities have built institutions, social and cultural networks, and a political presence – even as they struggle against structural racism and poverty.

• New immigrants bring new skills, entrepreneurial energy, access to international networks, institutions, and capital that can help connect Long Island to the global economy

• Long Island’s working-age population has declined more quickly than the working-age population in comparable regions; immigrants have moderated that decline, and are an essential workforce in many important industries.

VISION  The goal of this plan is a Long Island that attracts and retains a diverse population, benefits from the contributions of all groups, and rewards them with Long Island’s traditional advantages

• A full range of housing options available to all Long Islanders
• School systems that offer a quality education to all children
• Decent working and living conditions, as well as ladders of economic opportunity, for the immigrant workforce on which key industries rely
• A vibrant civic and cultural landscape, which promotes mutual awareness and respect, and which adds to Long Island’s attractions for businesses and workers

OUR PLAN FOR EQUITY

EQ-1  Develop a fair-share housing plan for creating the necessary next-generation and mixed-income workforce housing for Long Island

EQ-2  Establish an immigrant task force to meet the challenges and seize the opportunities of an emerging immigrant population

EQ-3  Catalyze social and economic development through arts and cultural programs

EQ-4  Establish training, educational and employment centers for technical jobs in low-income and minority communities

EQ-5  Meet the health needs of an aging, diverse and sedentary population

LINKAGES TO OTHER INITIATIVES  Some key equity strategies need to be embedded in initiatives addressing housing, education, land use, and infrastructure.

• Equity strategies do not add cost or impose delay, but they do require an explicit policy focus and commitment of political will.

• They also require accountability measures, and a commitment to review and publicize outcomes over time.

• Incentives and tools can be created at the county and regional level, and employed by local governments to address local conditions.

Taxation and Governance strategies developed to create efficiencies that will reduce costs and improve delivery of services have the potential to promote equity as well, as long as the efficiencies are not achieved by reducing services to already-underserved areas, or to high-need populations.

Economy strategies designed to create additional and more affordable choices in housing and transportation can also increase equity, as long as their implementation incorporates measures to prevent displacement of low-income residents from existing town centers, and to foster racial and ethnic integration in new developments.
EQ-1 Develop a fair-share housing plan for creating the necessary next-generation and mixed-income workforce housing for Long Island

Build regional consensus on the definition and the desirability of a “fair-share” housing strategy; draft and implement an action plan that commits all communities to clear targets and timelines.

CONTEXT

Today Long Island’s population is increasingly diverse; 23.5% of Long Islanders overall are Black, Latino, or Asian, but Long Island remains highly segregated; the populations of many communities are between 90% and 100% white. Concentration of poverty – along racial and ethnic lines, and geographically, persists as well, and is a significant obstacle to local governments seeking to provide good schools and public services. Overt racial discrimination is practiced by many homeowners and real estate professionals. Fair Housing laws require fair and equal access to housing in Long Island. While compliance is legally required, there is also a need to assure all communities have their fair share of affordable and workforce housing.

High housing costs place many of Long Island’s communities off-limits to young workers and their families, including first-time homebuyers and those from disadvantaged backgrounds. Rental housing, which is an important point of entry to Long Island for these young workers, is available in relatively few locations, with much of the privately-owned rental housing stock is in fair to poor condition. Affordable housing resources are threatened by disinvestment, the foreclosure crisis, and, potentially, by gentrification and displacement if its preservation is not made an explicit goal.

PROPOSED ACTIONS

1.1 Near-term: Build regional consensus on both the definition and the desirability of a fair-share housing strategy

1.2 Near-term: Avert federal intervention or litigation by drafting and implementing a regional fair-share housing plan, with clear targets and timelines

1.3 Near-term: At the same time, preserve the viability of existing affordable housing, especially in downtowns and areas targeted for transit-supported development (refer to Economy and Land Use sections for details)
**EQUITY**

**Responsible entities**
LIRPC as convener and initiator; Nassau and Suffolk Counties

**Approvals required**
- County action required for the establishment of a task force.

**Key steps**
- Convene a Long Island Fair Housing Task Force, with a mandate to produce a Long Island wide Fair Housing Blueprint with concrete targets and timelines that are specific enough to hold localities accountable, and to forestall legal challenges.
- Create a fair housing toolkit with a range of strategies suitable for varying contexts.
- Let localities decide what tools and strategies to employ, but hold them accountable for meeting targets and milestones.

**Costs**
- Little or no cost for establishment of the task force; implementation funding would come from existing housing and community development programs (which may otherwise be lost as HUD becomes increasingly insistent on compliance with its own regulations).

**Financing structure**
- Funding for implementation of a Long Island Fair Housing Plan would come from Community Development Block Grants, New York State housing programs, and from value leveraged by inclusionary zoning for private development.
- Once specific programs are developed, support may be sought from other public and private sources, such as the US Department of Housing & Urban Development’s Asset Control Area Program and Neighborhood Stabilization Program.

**Challenges**
- Diverse local contexts which demand a range of solutions (building type, affordability mechanisms, marketing, etc.)
- Resistance from communities that are now the least accessible to moderate-income workers and/or to racial minorities

**LINKAGES TO OTHER INITIATIVES**
- ERASE Racism New York has documented ongoing and pervasive racial discrimination in the marketing of existing housing on Long Island.
- Long Island Organizing Network has Long Island’s deep deficit of housing units affordable to the Island’s present-day workforce, and the unequal distribution of affordable units among communities.
- The Long Island Housing Partnership has expertise and a base of support in the development community

**CASE STUDY**

**Neighborhood Diversity & Affordable Home Ownership, Greater Rochester Area, New York**

Neighborhoods hit heavily by foreclosures have presented opportunities for governments to increase housing affordability, home ownership, and economic and demographic diversity and equity. A collaboration between the quasi-public Rochester Housing & Development Fund Corporation (“RHDFC”), the City of Rochester and the US Department of Housing & Urban Development’s Asset Control Area Program has acquired, rehabilitated and then resold, over 1,400 foreclosed single family homes in various Rochester-area neighborhoods. The program sought, since 2004, to acquire the entire foreclosed inventories of single family homes in targeted neighborhoods. Once rehabilitated, the homes are sold to first time homebuyers from disadvantaged backgrounds, with publicly assisted financing, thereby making the target neighborhoods more diverse and stable while, at the same, providing much-needed affordable housing and allowing people from demographics who might not otherwise have been able to do so to begin building their own equity as homeowners.

**Revitalizing & Diversifying Transit-Oriented Suburbs, Cook County, Illinois**

The South Suburban Housing Collaborative and the West Cook County Housing Collaborative, together consisting of 34 communities, have been established to acquire, rehabilitate and resell or rent, under public subsidies, foreclosed single- and multi-family homes near transit hubs, large employers and retail centers. While still in its early stages, the public program has received $28 million in initial funding from the US Department of Housing & Urban Development’s Neighborhood Stabilization Program, to be supplemented by state and local funds and private not-for-profit financing sources, to begin acquisitions. The program, launched in November 2009, seeks to diversify these previously homogenous communities by reaching out to qualified minority homebuyers and renters through a variety of not-for-profits and outreach organizations and with various specialized home-ownership assistance programs.

**ROLE FOR THE LIRPC**
- Initiator and convener of the Task Force
- Clearinghouse for tools and strategies.
EQ-2 Establish an immigrant task force to meet the challenges and seize the opportunities of an emerging immigrant population

Develop a task force to address the needs and challenges of low-wage, immigrant workers and the agriculture, construction, hospitality, and other industries that depend on them.

CONTEXT

Key sectors of Long Island’s economy rely increasingly on an immigrant workforce, but businesses and communities have largely failed to grapple with the short- and long-term implications of that reliance. Agriculture, landscaping, construction, and hospitality all depend upon the availability of seasonal, transient, and contingent workers. Workers may be single adults, supporting families in their home countries, or they may have established their families on Long Island. From residential overcrowding to waiting on street corners for work, the survival strategies through which many workers obtain shelter, transportation, and an income are sometimes problematic for their host communities. Living and working in an underground, ‘cash-only’ economy places workers in conflict with local authorities, and often exposes them to harassment and violence.

PROPOSED ACTIONS

2.1 Near-term: Convene a task force that includes immigrant and advocacy organizations, employers, unions, local governments, nonprofits, and institutions with experience and expertise in the issues of low-wage immigrant workers

2.2 Near-term: Provide the task force with resources and a mandate to define the problems faced by immigrant workers and host communities, and develop a range of responses

2.3 Mid-term: Identify communities willing to pilot the solutions identified by the task force, and provide them with the funding and other resources to do so

2.4 Long-term: Monitor the experience of those communities and use it to refine the strategies

2.5 Long-term: Convene an immigrant workforce summit to promote successful strategies and broaden participation
## IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>• LIRPC as convener and initiator; county and local governments; employers, unions, and nonprofit organizations as task force members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals required</td>
<td>• No formal approvals required to convene the task force and issue recommendations</td>
</tr>
</tbody>
</table>
| Key steps            | • Convene a task force that includes representatives of the stakeholders: immigrant-dependent industries, unions, immigrant and advocacy groups, and local governments; as well as providers of expertise and services: churches, universities, housing and health organizations, etc.  
  • Provide the task force with resources (research, facilitation, etc.), and a mandate to:  
    - define the set of problems faced by immigrants, their employers, and their host communities  
    - define a set of goals in terms acceptable to all of the stakeholders  
    - develop strategies that address the goals  
    - identify communities willing to pilot the strategies  
  • Provide funding to the pilot communities to offset their direct costs  
  • Monitor the experience of the pilot communities and use it to refine the strategies  
  • Convene an immigrant – industry – municipality summit to publicize findings and broaden participation |
| Costs                | • Little or no cost for establishment of the task force;  
  • Cost to implement pilot recommendations TBD                                                                 |
| Financing structure  | • TBD                                                                                                                              |
| Challenges           | • Underground nature of low-wage employment; cash economy, fear of deportation makes it difficult to assess the nature and extent of issues, and for immigrants to speak up on their own behalf  
  • The issue is politicized in ways that are not conducive to clear analysis and problem-solving |

## CASE STUDY

### ‘Shape Up’ Center, City of Glen Cove, NY

In the 1990s, the City of Glen Cove found a solution to the growing problem of – and rising tensions over – Latino day laborers massing on street corners while waiting for job opportunities from passing contractors. With funding from Nassau County, the city worked with an immigrant rights groups to create a “shape up” center where day laborers could meet prospective employers. The center, in an industrial area, allowed them to wait in relative comfort and alleviated one complaint of residents – that some of the men would urinate on the street --by providing bathrooms. But the center also provided the workers with information about employment law and where they could learn language and other skills that could improve their prospects. The center, which now enjoys broad political and cultural support in the city, is credited with avoiding the sort of angry and sometimes violent confrontations that have plagued other communities where the day laborers have no place to wait.

## LINKAGES TO OTHER INITIATIVES

- Long Island Wins
- Long Island 2010 Census Initiative / The Hagedorn Foundation

## ROLE FOR THE LIRPC

- Initiator and convener of the Task Force; potentially also a clearinghouse for tools and strategies.
EQ-3 Catalyze social and economic development through arts and cultural programs

Promote and support arts, culture, and youth programming particularly in low-income, minority, and immigrant communities. Implement development models that strengthen and build upon existing cultural assets that are most likely to succeed in catalyzing downtown and neighborhood revitalization such as offering affordable spaces for cultural production as well as space for nonprofit arts organizations.

CONTEXT

In a globalized economy, diverse and inclusive regions will have competitive advantages over those which fail to welcome newcomers and provide opportunity and a high quality of life to all racial and ethnic groups. A diverse population brings skills, entrepreneurial energy, and connections to global social and business networks.

Long Island’s growing diversity is an asset that has yet to be fully exploited as an attraction to young, educated workers who seek downtowns offering vibrant and varied foods, entertainment, and cultural experiences. Downtowns can offer a range of cultural attractions while showcasing the cultural wealth of Long Island’s established and emerging ethnic communities. Often, shops and restaurants spring up around performance and exhibit spaces to complement these attractions.

Culturally appropriate programming for young people is also an important tool for youth development and education. Existing organizations providing such programming need to be networked, supported, and emulated.

Securing stable, affordable space is a challenge for artists and arts organizations across the cultural spectrum. In many cities, established arts districts can offer affordable space for artists and nonprofit arts programming associations. By including affordable space for cultural organizations, downtown revitalization and TSD strategies can leverage their value and help to ensure long-term viability.

PROPOSED ACTIONS

3.1 Near-term: Engage arts organizations, institutions, artists, and cultural entrepreneurs in downtown planning processes, to ensure that cultural space needs are clearly understood and integrated into revitalization plans.

3.2 Near-term: Support and replicate partnerships between arts and cultural organizations and schools, as well as with youth and adult recreation programs, senior centers, etc.

3.3 Near-term: Include ethnic and cultural venues, attractions, events and arts-related businesses in local marketing and tourism initiatives, including digital and traditional media.

3.4 Mid-term: Explore need for and interest in small- to mid-sized foundation grants to support indigenous cultural programming on Long Island, modeled on the New York State Council on the Arts; based on findings, work with foundations to establish a pool.

3.5 Mid-term: Early in the planning process, identify downtowns with existing, naturally-occurring arts districts, as well as downtowns with the potential to support new cultural uses, and identify and prioritize existing arts spaces for preservation and upgrading.

3.6 Long-term: Incorporate plans for new and existing arts and cultural spaces into downtown plans, and develop strategies to leverage downtown property values to fund the development and preservation of spaces and facilities. Potential strategies include purchasable density bonuses for new housing; preferential leasing terms for ground floor cultural uses; and inclusion of affordable living and working spaces for artists in residential developments.
**EQUITY**

**IMPLEMENTATION**

| Responsible entities | • LIRPC as convener and initiator  
| • Long Island Arts Association,  
| • Towns and villages, through adoption of downtown revitalization and land use plans |

| Approvals required | • No formal approvals required |

| Key steps | • Recruit a broadly representative group of arts and culture stakeholders and engage them in downtown planning efforts  
| • Articulate needs and strategies for preserving and expanding cultural spaces as an element of downtown revitalization plans  
| • Develop web- and social media sites dedicated to promoting ethnic and immigrant cultural venues and events, and link to existing Long Island tourism and cultural promotion outlets  
| • Explore need for and interest in small- to mid-sized foundation grants to support indigenous cultural programming on Long Island, modeled on the New York State Council on the Arts; based on findings, work with foundations to establish a pool  
| • Incorporate new / renovated space for culture, recreation, and youth programming in planning for downtowns and TSD; identify whether zoning bonuses, financial incentives, or planning mandates would be most effective in various settings |

| Costs | • Little or no cost for establishment for web and networking;  
| • Cost of grants / re-grants based on available resources  
| • Cost of space to be incorporated into development and revitalization plans |

| Financing structure | • Foundation grants for web and networking resources  
| • New York State Council on the Arts, potential National Endowment for the Arts, as well as foundation funding for re-granting |

| Challenges | • Even established arts organizations are struggling for funding and audiences in the current economy; the need is to expand the pool of available resources in a challenging environment.  
| • Balancing economic development and the affordability of cultural living and working spaces. |

**CASE STUDY**

**Bronx Council on the Arts (BCA), Bronx, NY**

The Council is a non-profit organization which is the official cultural agency and central information clearinghouse in Bronx County. Their program is recognized nationally as a leading arts organization, providing services for over 5,000 artists and 250 arts and community-based organizations. BCA provides direct financial support, exhibit space, performance venues, promotion and networking, re-granting to individual artists and organizations, and nurturing of local talent. In addition, technical assistance, community education and programming and professional development services for artists and writers help to brand the Bronx as a vibrant cultural scene.

BCA is well established in the Bronx community and develops partnerships with the private sector, educational institutions, social service agencies and community organizations. The Council also provides services for children; through the Bronx Writers Corp, which is a group of writers who work with schools and community centers to promote literacy among youth and adults in the Bronx.

**ROLE FOR THE LIRPC**

• Initiator and convener of the Task Force  
• Clearinghouse for tools and strategies

**LINKAGES TO OTHER INITIATIVES**

• Long Island Wins  
• Innovate Long Island 2006, the Long Island Association’s plan for economic growth, highlights the importance of cultural amenities for the continued attraction of a young, professional creative class.
EQ-4 Establish training, educational and employment centers for technical jobs in low-income and minority communities

CONTEXT

Long Island’s low-income and minority communities suffer from high rates of unemployment and underemployment, especially among young adults. These young people often lack training in the skills they need to qualify for the technical jobs that offer the best prospects for stable employment and upward mobility. Town centers that are already targeted to become educational and cultural hubs, connected to surrounding residential areas and with good access to local and regional transit, are the logical locations for centers offering job readiness and support, job training, and connections to employers in expanding sectors.

Nationally, the most successful models link outreach and supportive services with job readiness, technical training (often provided in partnership with community colleges), and pre-apprenticeships (offered in partnerships with employers and/or unions) to provide a ladder of opportunities and options to young people who face barriers to employment.

PROPOSED ACTIONS

4.1 Near-term: Identify successful providers of job readiness and job training services, and determine their interest in and capacity to expand

4.2 Near-term: Identify potential partners including employers, unions, and community-based organizations

4.3 Near-term: Simultaneously, identify locations in low-income / high-need communities which could be developed for job training and related service centers

4.4 Near-term: Simultaneously, Develop budgets and timelines for program launch and expansion, and identify funding

4.5 Mid-term: Launch pilot programs (in interim spaces if necessary)

4.6 Long-term: Expand successful programs, build out permanent space, and work to attract businesses that employ graduates to the host communities

See Strategy E-6 (Establish mechanisms to train workers for 21st century jobs).
EQUITY

IMPLEMENTATION

<table>
<thead>
<tr>
<th>Responsible entities</th>
<th>• LIRPC as convener and initiator; county and local governments; employers, unions, and nonprofit organizations as task force members</th>
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<tbody>
<tr>
<td>Approvals required</td>
<td>• No formal approvals required</td>
</tr>
<tr>
<td>Costs</td>
<td>• Little or no cost for planning; • Cost to implement pilot and full-scale programs</td>
</tr>
<tr>
<td>Challenges</td>
<td>• Low-income communities have historically had difficulty attracting commercial uses which offer both employment for local residents and expand the local tax base</td>
</tr>
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</table>

ROLE FOR THE LIRPC

• Initiator and convener; may be well-positioned to recruit committed partners from industry and labor

CASE STUDY

Oakland Green Job Corps, Oakland, CA

Jointly launched by the Ella Baker Center and the Oakland Apollo Alliance, the Oakland Green Jobs Corps is a job-training and employment pipeline providing "green pathways out of poverty" for low-income adults in Oakland. By linking locally-based outreach and support with the resources of community colleges, unions, and businesses, the program prepares trainees for careers in the Bay Area’s most vibrant green industries, including energy efficiency, green construction and solar.

Participants progress through four phases en route to permanent, well-paying jobs:

• Outreach, recruitment and assessment;
• Pre-construction and basic skills training;
• Community college-level training (with credit) in skills needed for green Economy jobs: solar installation, energy efficiency in buildings, green construction, and an introduction to the principles of ecology, environmental sustainability, and environmental justice;
• Paid work experience with on-the-job training.

Case management and support services are provided to participants and employers throughout, ensuring a high rate of success.

Green Jobs Corps, Long Island

Education & Assistance Corporation (EAC) and United Way of Long Island, in cooperation with the Suffolk County Department of Social Services (DSS), established the Green Jobs Corps. The Green Job Corps provides training with a curriculum based on building science and weatherization, green and standard construction, and industry-specific training on machinery and equipment. Participants learn the technical application of energy conservation techniques and receive a safety training certificate, Green Advantage Certification, Pre-Apprenticeship Certificate training, case management and, most important, employment opportunities. Upon completion of training, participants are eligible to complete actual field work at designated home sites.
EQ-5  Meet the health needs of an aging, diverse and sedentary population

Healthcare is a major industry on Long Island, providing essential service of a very high quality – which greatly enhances the attractiveness of the region – and playing an important role in the regional economy. As an increasing number of Long Islanders become older and as Long Island becomes more ethnically diverse, access to quality, affordable health care will grow in importance as both a “quality of life” and economic issue for individuals and businesses alike.

CONTEXT
Public health officials believe and statistical data indicates that, overall, Long Island is a healthy community with an appropriate mix of providers, hospitals, nursing care and other facilities. Nevertheless, access to healthcare differs among Long Island communities. While it is expected that the recently-passed federal healthcare reform legislation will provide access to coverage for thousands of Long Islanders, access to coverage and access to providers are quite different. Until the full impact of the legislation is known, we must protect and strengthen the safety net of providers who serve the most vulnerable populations on Long Island. In the long term, policy makers recommend that Long Island should invest in improvements at existing facilities, prepare for growing numbers of elderly, poor and non-English speakers, and devote more resources to preventative care. Local health care institutions and medical schools will have to create a culture of care and adjust training and practice protocols to meet these needs.

Long Island will need more providers versed in the issues of aging patients to allow this population to remain at home rather than in more expensive nursing facilities. Geriatric caregivers will need to close the distance between service and homebound persons and employ digital solutions to maintain health and diagnose and treat disease. In addition, health professionals will have to be proficient in the languages and customs of the cultures that will comprise half the Island population by 2035. Special attention must be given to the “medically under-served” in poorer, isolated communities. How these people access care – particularly in light of inadequate public transportation and a sprawling medical establishment – will determine whether they can contribute to and benefit from the region’s economic revival.

PROPOSED ACTIONS

5.1 Near-term: The newly formed and government-funded Long Island Center for Health Policy Studies provides an opportunity to focus its research and advocacy on programs to prevent injury and illness related to aging, communication, and medical literacy. It should work with various stakeholders, from providers and institutions to caregivers and patients, to craft a comprehensive plan to confront the region’s health care challenges in a cost-effective manner with a focus on aging, access to services, poverty, diversity, obesity, and the economy.

5.2 Near-term: Public health and education officials should meet to address the very serious concerns regarding Obesity on Long Island, planning a region-wide marketing campaign aimed at promoting increased exercise, teaching children and their parents how to choose healthier foods, and insuring that health and physical education classes prepare children to be “fit for life.”

5.3 Long-term: Create a Long Island Longevity Institute to monitor efforts to promote a healthier population, to study “best practices” that can be implemented in schools and at home, and to advocate for changes in laws or practices that discourage healthier life-styles.
### IMPLEMENTATION

| Responsible entities | County and State Health Departments  
<table>
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<tbody>
<tr>
<td></td>
<td>Major health care providers and institutions</td>
</tr>
</tbody>
</table>
|                      | School Districts  
|                      | Long Island Center for Health Policy Studies |

| Approvals required | State Regents and Legislature  
<table>
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<tr>
<td></td>
<td>County health agencies</td>
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<tr>
<td></td>
<td>School administrations</td>
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| Key steps | Convene public—private meetings  
<table>
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<td></td>
<td>Lobby for changes in state and local policy</td>
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</table>

| Costs | Nominal – focus on existing on reallocating existing resources |

| Financing structure | Medicaid, Medicare, health care institution investments  
<table>
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<td></td>
<td>Regional health grants and contracts</td>
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| Challenges | Aligning health care system and resources around a unifying vision for the health of Long Island  
<table>
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<tbody>
<tr>
<td></td>
<td>Unfamiliarity with working across professional “silos”</td>
</tr>
<tr>
<td></td>
<td>Inflexible revenue streams and bureaucratic rules</td>
</tr>
<tr>
<td></td>
<td>Future implementation of health reform legislation</td>
</tr>
</tbody>
</table>

### LINKAGES TO OTHER INITIATIVES

- Long Island Center for Health Policy Studies
- Nassau University Medical Center’s effort to upgrade community health centers
- Health Disparity Institute, Nassau County
- Suffolk County Minority Health Initiative
- Suffolk County’s initiative to restructure its community-based health centers

### CASE STUDY

**Suffolk County Office of Minority Health**

In 2005, Suffolk County launched an initiative aimed at increasing health access for racial and ethnic minorities. Called the Office of Minority Health, it focused especially on community outreach and prevention strategies aimed at eliminating health-related disparities between whites and minorities, especially African Americans. These disparities, identified by the federal Centers for Disease Control, centered around cancers, diabetes, immunizations, infant mortality, heart disease/stroke and HIV/AIDS. Suffolk County Executive Steve Levy presented the program as a way of improving care and saving tax dollars by preventing or treating illnesses before they became serious.

The Office aggressively sought social and educational collaborations with community and faith based organizations with credibility among minority residents. It organized training programs to improve cultural competency of professional staff within the Suffolk County Department of Health Services. It also collected and analyzed data to more effectively shape programs and determine various health needs on a community by community, and group by group basis. Recently, the program received a national award for helping to narrow a number of the identified disparities.

### ROLE FOR LIRPC

- Political support
- Identifier of resources
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.
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Figure 33: Actual and Projected Median Property Taxes as % of Median Household Income: 2005 to 2035
Figure 34: Actual and Projected School District State Aid Revenue: 1998 to 2035 (real dollars, $ billions)
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1 Methodology

1.1 Baseline Methodology

PFM collected 10 years (1998-2007) of expenditure and revenue data from the New York State Office of the State Comptroller and the New York State Education Department for all general purpose governmental units (counties, cities, and towns) and school districts. Historical spending and revenue trends were documented and analyzed by reviewing data at both functional and object levels:

Functional: Major governmental service areas (e.g., public safety, general government, transportation, sanitation, etc.);

Object Level: Personal services (salaries and wages), employee benefits, contractual, equipment and capital outlay, and debt.

To avoid double-counting, interfund transfers were not included in our analysis. The Long Island Regional Consumer Price Index for All Urban Consumers (CPI-U), as determined by the U.S. Department of Labor, Bureau of Labor Statistics, was used to calculate historical real dollars and percent growth rates.

1.2 Forecast Methodology

PFM determined the average annual growth rate for spending and revenues in the baseline period for Long Island GPUs and school districts. To account for anomalies and outliers, annual growth rates were removed that were greater or lesser than two standard deviations from the mean growth rate for the 1998 to 2007 time period. Additional adjustments were made and noted to the data set to account for other data inconsistencies and information not captured in the original data set. Forecasted real dollar and percentage growth was determined by using the average annual Long Island CPI-U growth increase of 3.0% from 1998 to 2007. “Average Real” change reflects the average nominal rate less the average annual inflation rate of 3.0%

Confidence ranges were established for all revenue and expenditure forecasts based on the wide range of aggravating and mitigating factors. An annual plus or minus 1 percent confidence range was deemed appropriate and grows over time to reflect greater risks and uncertainties.

Data have been incorporated from HR&A and Pratt to the degree that the data are compatible and add value to the forecast.
2 Baseline Analysis

2.1 Historical Spending Trends: Overview

Summary: Local governments and school districts on Long Island are expensive – taxes are among the highest in the nation – and the cost is growing at an increasingly unsustainable pace.

Long Island’s complicated government patchwork requires high levels of spending: Long Island is home to more than 710 units of local government, which includes school districts and General Purpose Unit (GPU) municipalities.

Table 1: Units of Local Government, Long Island

<table>
<thead>
<tr>
<th></th>
<th>Nassau County</th>
<th>Suffolk County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Town</td>
<td>3</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>City</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Village</td>
<td>64</td>
<td>32</td>
<td>96</td>
</tr>
<tr>
<td>Total GPU</td>
<td>70</td>
<td>43</td>
<td>113</td>
</tr>
<tr>
<td>School District</td>
<td>56</td>
<td>69</td>
<td>125</td>
</tr>
<tr>
<td>Total GPU and SDs</td>
<td>126</td>
<td>112</td>
<td>238</td>
</tr>
<tr>
<td>Fire District</td>
<td>39</td>
<td>93</td>
<td>132</td>
</tr>
<tr>
<td>Special Districts</td>
<td>140</td>
<td>200</td>
<td>340</td>
</tr>
<tr>
<td>Total</td>
<td>305</td>
<td>405</td>
<td>710</td>
</tr>
</tbody>
</table>

From 1998 to 2007, spending by Long Island’s school districts and GPUs grew by an average annual real growth rate of 2.1 percent, from $12.3 billion to $19.1 billion in 2007.

Figure 1: Total Long Island Local Government Spending: 1998 to 2007 ($ billions)
GPU spending rates on average exceeded corresponding increases in inflation, as measured by the Long Island Regional Consumer Price Index for All Urban Consumers (CPI-U). The average annual spending growth rate in real dollars was .8%.

Figure 2: Annual % Spending Growth, LI Governments: 1999 to 2007

![Graph showing annual percentage spending growth for LI governments from 1999 to 2007.](image)

School districts are the largest government cost driver, and over the baseline period accounted for an increasing percentage of total government spending on the Island.

Figure 3: Total LI school and GPU spending: 1998 and 2007

![Pie charts showing total government spending in 1998 and 2007.](image)
2.2 **Historical Spending Trends: Municipalities and General Purpose Units**

Summary: Spending by GPUs has grown marginally faster than the Long Island CPI-U. Furthermore, Long Island’s governments spend billions of dollars on overlapping service delivery systems.

The cost of local government: Long Island’s General Purpose Unit governments added more than $2.6 billion in new spending from 1998 to 2007. The two counties, which administer and pay a portion of State social programs, including Medicaid, social welfare, and correctional services, have historically spent more than the combined amounts of all of the Island’s villages, towns and cities, which have no such responsibility.

**Figure 4: Total GPU spending: 1998 to 2007 ($ billions)**

Total spending by GPUs from 1998 to 2007 grew at an average annual rate of 0.8% above the Long Island CPI-U. Total spending reached $9.4 billion in 2007.
Cost drivers: On a functional level, which categorizes spending according to policy or service area, public safety, social services and general government have all grown at levels exceeding the Long Island CPI-U. Debt service and sanitation services are the only areas that have not outpaced the Long-Island CPI-U.

Reviewing spending trends on the object level reveals that employee benefits and equipment and capital outlay spending across service areas have been growing at astounding rates, 8.1% and 9.9% respectively between 1998 and 2007.
Many services are duplicated by overlapping governmental units. Counties, towns, villages and cities all spend significant amounts on public safety, general government, sanitation, and transportation. In some cases, spending covers different areas of responsibility. For example, towns plow town roads, and counties plow county roads. Residents frequently complain about the inefficiency when plow drivers lift the plow when they cross a road that is not the responsibility of their own jurisdiction. In other instances, a locality may want additional or more dedicated service, or may simply desire more local control. For example, many locales have their own police department, even though the entire county is covered by county police.
2.3 Historical Spending Trends: School Districts

Summary: Educating children on Long Island has been expensive and is getting more so with each passing year. School district spending on average has increased by more than 3% above the Long Island CPI-U – a rate that surpasses comparable statewide school spending growth. While in many Long Island districts student achievement is among the highest in the State, other districts have been dramatically less successful in realizing favorable educational outcomes.

The price tag of an education: Long Island school spending grew from a combined $5.5 billion in 1998 to $9.7 billion in 2007. In 1999, average spending per student was $13,944, and in 2007 average spending per student had risen to $20,742.

Figure 11: Long Island School District Spending: 1998 to 2007

Statewide, school district spending increased by an average real growth rate of 2.7% from 1998 to 2007, compared to Long Island school district spending which grew by an average annual real
growth rate of 3.5% (note: the average annual real growth rate reflects the average nominal rate less the average annual inflation rate of 3.0%. The chart below illustrates nominal rate growth vs. CPI-U growth)

Figure 12: Annual % school district spending growth: 1999 to 2007

Cost drivers: About 75 cents of every $1 spent by school districts goes to instructional spending – the remainder goes to non-instructional purposes, which is comparable to the statewide average.

Figure 13: Average % of total school spending, instructional/non-instructional: 1998 to 2007
Figure 14: Average annual % growth (nominal) in school instructional/non-instructional spending: 1998 to 2007
The vast majority of school district spending, nearly 70%, is devoted to employee compensation. Salaries, wages and employee benefits have increased at rates outpacing inflation, growing at average annual real growth rates of 2.3% and 7.0% respectively.

Figure 16: Average annual % growth (nominal), school district spending areas: 1998 to 2007

Figure 15: Average % of total spending, school district spending areas: 1998 to 2007
Annual average median teacher and professional staff salaries, with a real average growth rate of 2.3%, have gone up matching or exceeding LI CPI-U and personal income growth rates on the Island.

Figure 17: Median School Professional Personnel Salaries: 2001 to 2007

The number of special education students on Long Island increased at a slower pace than those in general education, but total special education spending has nearly doubled since 1998.

Figure 18: Instructional expenditures, Special education and general education: 1998 to 2007 ($ billions)
School spending has grown significantly despite relatively flat public and private school enrollment over this time period.

Figure 19: Special education and General education enrollment: 1998 to 2007

Figure 20: Public school LI enrollment by county
Figure 21: Public/Private student enrollment breakout – Suffolk County

<table>
<thead>
<tr>
<th>Year</th>
<th>Suffolk Public School Enrollment</th>
<th>Suffolk Private School Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>7.2%</td>
<td>93%</td>
</tr>
<tr>
<td>2001-2002</td>
<td>7.3%</td>
<td>93%</td>
</tr>
<tr>
<td>2003-2004</td>
<td>6.4%</td>
<td>94%</td>
</tr>
<tr>
<td>2005-2006</td>
<td>6.0%</td>
<td>94%</td>
</tr>
</tbody>
</table>

Figure 22: Public/Private student enrollment breakout Nassau County

<table>
<thead>
<tr>
<th>Year</th>
<th>Nassau Public School Enrollment</th>
<th>Nassau Private School Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>14.5%</td>
<td>86%</td>
</tr>
<tr>
<td>2001-2002</td>
<td>14.6%</td>
<td>85%</td>
</tr>
<tr>
<td>2003-2004</td>
<td>13.2%</td>
<td>87%</td>
</tr>
<tr>
<td>2005-2006</td>
<td>14.0%</td>
<td>86%</td>
</tr>
</tbody>
</table>
Educational Outcomes:

Long Island’s 125 public school districts run the gamut from privileged and affluent to devastatingly poor, and many struggling high-need districts on the Island spend the same or more than nearby low-need districts. Despite this, dropouts are problematic in high-need districts and often exceed 5% of total annual enrollment, compared to near 0% dropout rates in low-need districts. Students in high-need districts also receive significantly fewer Regents diplomas than their counterparts in low-need districts, and the percentage of students in high-need districts intending to enroll in college is typically only half that of students in affluent low-need districts.

Data Sources: OSC; and New York State Education Department, Information and Reporting Services, 2007-08 School Report Cards

2.4 Historical Revenue Trends

Summary: To keep pace with corresponding growth in spending, Long Island municipalities and school districts have relied heavily on property taxes, resulting in a property tax burden that is one of the highest in the nation. Further adding to Long Island property taxpayer hardship, from 1998 to 2007 combined school and municipal property taxes have grown faster than the Long Island CPI-U and median household income.

The property tax issue: All governmental units on Long Island receive significant revenue from property taxes. School districts in particular are dependent on this revenue source, relying on it for more than half of all revenues.

GPU revenue: From 1998 to 2007, GPU property tax revenue grew from $2.1 billion to $3.1 billion, an average annual real growth rate of 1.5%. Additionally over this time period, sales tax revenue grew from $1.4 billion to $2.3 billion, an average annual real growth rate of 2.5%. Property tax collections by GPU governments began to essentially match CPI-U increases starting in 2004.
School district revenue: School district property tax revenues reached $5.8 billion in 2007, having grown at an average annual real growth rate of 2.5% since 1998. State aid, the second largest school district revenue source, has grown even faster than property tax revenue, increasing at an average annual real growth rate of 2.8%.

The unsustainable property tax burden: From 2004 to 2008, median Long Island property taxes for GPUs and school districts grew at an average real annual rate of 2.5% (a nominal rate of 6.1%). Over this time period the LI CPI-U was an annual average 3.6%. Comparatively, over this time period Long Island median household income grew on an average real growth basis by 1.1%.
3 Forecast

Total Government and School District Forecast

Total GPU government and school district spending will increase from $12.3 billion in 1998 to a projected $81.2 billion in 2035 on a nominal dollars basis. Combined, both are estimated to grow at an annual average real growth rate of 2.3%. At this rate, GPU and school district spending will reach $28.3 billion in new spending by 2035.

(Note: The forecast section includes nominal and real growth rates and dollar projections. Real growth includes the effects of forecasted inflation while nominal growth does not.)

Figure 29: Actual and Projected GPU & School District Spending: 1998 to 2035 (real dollars, $ billions)

3.1 General Purpose Unit Forecast

GPU governments alone are on-track to increase spending from $6.8 billion in 1998 to $32.7 billion in 2035, on a nominal dollar basis. They are estimated to grow at an average annual real growth rate of 1.6%, increasing to $11.4 billion in 2035 (in real dollars).

Figure 30: Actual and Projected GPU Spending: 1998 to 2035 (real dollars, $ billions)
3.1.1 Aggravating and Mitigating Forecast Factors (all forecasts)
As with any forecast, there are aggravating and mitigating factors that could affect the short-term and long-term spending/revenue forecast. Confidence ranges were established for the spending/revenue forecast based on the wide range of existing aggravating and mitigating factors. An annual plus or minus 1 percent confidence range was deemed appropriate and grows over time to reflect greater risks and uncertainties.

GPU Forecast Aggravating Factors:
- Potential for public safety, general government or social service spending (the biggest spending drivers) to increase above historical rates.
- Salaries/wages and health insurance costs increase at or above historical rates even in midst of economic downturn and revenue shortfalls. According to the Commonwealth Fund, a nonprofit and non-partisan policy research group, health insurance premiums alone are expected to incur average annual increases of 5.7% over the next 10 years.
- Rising employer pension fund contributions. 2011 employer pension fund contributions are increasing; average PFRS 18.2%, average ERS 11.9%.
- Federal and state support to local governments decline, increasing local share of mandated social services and general government spending, and employee benefits.

GPU Forecast Mitigating Factors:
- Spending in discretionary areas, such as equipment and capital outlay, flatline or decline as municipalities and the State grapple with constrained revenues.
- Personal services and contractual and equipment costs plateau as local government units begin to consolidate, enter into shared services agreements and renegotiate collective bargaining agreements
- National healthcare reform slows growth in health insurance.
- Reduced employer pension contributions through the implementation of Tier V Pension Reform.

3.2 School District Forecast
School Districts are on pace to increase spending from $5.5 billion in 1998 to $57.2 billion in 2035 on a nominal dollar basis. On a real dollars basis this is $20.2 billion, a three-fold increase by 2035, growing at annual average real growth rate of 3.5%.

Figure 31: Actual and Projected School District Spending: 1998 to 2035 (real dollars, $ billions)
School District Forecast Aggravating Factors:
- Accelerated enrollment growth (especially in Suffolk County).
- Teacher salary increases continue to exceed CPI, personal income growth rates, and comparable statewide medians.
- Special education expenditures increase at a faster pace.
- Private school enrollment shifts to public schools.
- Employee benefit costs grow at increased rates.

School District Forecast Mitigating Factors:
- Slowdown in major cost drivers, particularly equipment, employee benefits and contractual services, as well as in special education spending.
- National healthcare reform slows growth in health insurance.
- Reduced employer pension contributions through the implementation of Tier V Pension Reform.
- Non-instructional expenditures decline as districts engage in shared services opportunities.
- Median teacher salaries move closer to CPI rate increases, or statewide median salaries.
- Private school enrollment increases.

3.3 Property Tax Forecast

School districts and GPUs are projected to need approximately $33 billion in property tax revenue in 2035, compared to $5.7 billion in 1998. On a real dollar basis, property tax revenues are expected to double, reaching $11.4 billion in 2035. Over this time period, combined property tax revenues are estimated to grow at an average annual real growth rate of 1.8%.

Figure 32: Actual and Projected Property Tax Revenue: 1998 to 2035 (real dollars, $ billions)
3.3.1 The Unsustainable Property Tax Burden

From 2005 to 2008 median LI property taxes for GPU and School Districts grew on average by 6.2% and LI median household income grew by 5.1%. Over this time period, median property taxes as a % of median household income averaged 7.7%. If this trend continues, in 2035 Long Island residents on average will be spending 10.3% of projected median household income on property taxes.

Figure 33: Actual and Projected Median Property Taxes as % of Median Household Income: 2005 to 2035

Source: U.S. Census Bureau, PFM Estimates

Property Tax Revenue Forecast

Aggravating Factors:

- State Aid and Sales Tax revenue growth slows, placing greater pressure on the property tax
- Spending continues at unsustainable levels, forcing increased property tax burden

Property Tax Revenue Forecast Mitigating Factors:

- Reform initiatives (property tax cap, etc.)
- State Aid, Sales Tax, and or other revenue sources grow at increased rates, relieving the property tax revenue burden
- State mandate relief
3.4 State Aid Forecast

State Aid is the second largest revenue source for school districts and is estimated to increase from $1.4 billion in 1998 to $12.6 billion in 2035 in nominal dollars. On a real dollar basis, State Aid is projected to increase to $4.4 billion in 2035, growing at an average annual real growth rate of 3.3%.

Figure 34: Actual and Projected School District State Aid Revenue: 1998 to 2035 (real dollars, $ billions)

Confidence Range High
Confidence Range Low

State Aid Forecast Aggravating Factors:
- Decreased state and/or federal aid; revised State Aid formulas to accommodate State revenue shortfalls:
  - FY2008-09 State Budget included across the board reductions to local assistance
  - FY 2009-10 the Governor’s State Budget Deficit Reduction Plan includes 4.5% reduction in remaining, undisbursed School Aid (total of $686 on 2009-10 school year basis)

State Aid Forecast Mitigating Factors:
- Improvements in economy positively affect State and/or federal aid disbursement
- Legislature continues to prioritize School Aid over other programs:
  - Since 2000, School Aid has increased at average annual rate of nearly 6%

3.5 Sales and Use Tax Forecast

Sales and Use Tax, the second largest revenue source for GPU governments, is projected to rise from $1.4 billion in 1998 to $11 billion in 2035 in nominal dollars. On a real dollars basis, Sales and Use Tax collections will nearly triple to $3.8 billion in 2035, growing at an annual average real growth rate of 2.7%.
Figure 35: Actual and Projected GPU Sales and Use Tax Revenue: 1998 to 2035 (real dollars, $ billions)

Sales and Use Tax Forecast Aggravating Factors:
- Sales tax collections enter prolonged period of decline due to poor economic conditions, including high unemployment and reduced personal income

Sales and Use Tax Forecast Mitigating Factors:
- Robust economic recovery results in positive collections growth
- Growth in LI population
4 Goals

Long Island governments and school districts are expensive and rapidly becoming too costly to be sustainable, exceeding comparable increases in measures such as the LI CPI-U and regional personal income. The current governmental structure, with its overlapping layers of service delivery, is inherently inefficient and has served to diminish equitability. Options to maintain the quality of service and education many residents now enjoy and others aspire to may include the following:

Reduce duplicative service provision. Some services may be redistributed to governments with broader perspectives or stronger core competencies to achieve effective long-term planning and regional sustainability, including:

- Shared service partnerships and initiatives among government jurisdictions and school districts. Ideas may include:
  - Cooperative bidding for common services and/or equipment;
  - Sharing the cost of governmental or school district resources and/or personnel;
  - Provision of certain functions solely by a jurisdiction for which the function is a core competency (e.g., towns maintain all roads, while all governments share the cost based on a common measure such as lane miles).
- Centralization of common and potentially redundant government services, and regionalization of functions with widespread implications on the long term health and safety of all residents. These could include:
  - Regional information technology and telecommunications services to ensure commonality of function, service and disaster preparedness;
  - Regional water, sewer and solid waste services for adequate availability of vital resources in the future;
  - Regional planning and zoning for a planned economic development strategy;
  - Regional planning and development of enhanced transportation and housing coordinated with the adopted economic development strategy.
- Consolidation of local governments, agencies and/or school districts to reduce redundancy and overall cost, and facilitate efficiency.

Generate recurring savings in governmental and school district operations. Control and reduce the rate of increased spending by GPUs and school districts particularly in cost drivers such as personal services and employee benefits by:

- Limiting spending increases to thresholds such as the LI CPI-U.
- Focusing initially on cutbacks or alternative delivery mechanisms for discretionary expenditures, particularly where similar services are provided by overlapping jurisdictions and where there is duplication of capital expenditures for equipment and machinery.
- Regionalization and/or renegotiation of collective bargaining agreements to avoid “leap frogging” (each jurisdiction paying higher salaries than the neighboring community) and to reduce the incentive for highly-qualified educators to move to more affluent districts.
- Regionalization and/or policy changes to costly employee/retiree expenditures, such as pensions and health benefits.
- Advocacy within New York State government, where many such policies originate, aided by the strength of regional advocacy.
Preserve or enhance service provision. Long Island-wide quality and affordable government services and educational opportunities are essential to continued growth and economic development. Strategies may include:

- Examining best practices to limit spending while simultaneously enhancing service delivery.
- Developing and utilizing performance indicators to gauge efficiency and effectiveness.
- Focusing on universal achievement of desired educational outcomes, including equitable opportunities for all students, Pre-K through 12, to eliminate the pockets of low achievement in some LI school districts.

Reassess government and school district revenues. The current ad hoc system of revenue support, in which all potential revenues are tapped to support costs (with a fallback to the property tax), has created a level of taxation beyond that of most other United States counties and regions. Government and school district revenue sources should be reassessed to:

- Achieve funding sufficient to provide quality services and equal educational opportunities Island-wide.
- Limit property tax increases through reform initiatives such as a tax cap.
- Promote regionalism where essential to planning, health, safety, and economic development.

Move toward increased regional planning. Regional approaches to common issues can facilitate broad strategic change. Opportunities may include:

- Shared service opportunities with the goal of generating efficiencies and cost savings through best practices, economies of scale, purchasing power and reduced personal service expenses.
- A regional perspective in zoning to foster economic development, environmental sustainability, and cross-municipality and school district coordination.
- Facilitation of regional planning through dedication of a discrete revenue source for regional planning activities, such as a portion of a regional sales tax.

Maintain local control based on location-specific preferences. Ensuring local control and local financial support of community preferences may offset resistance to regional planning and service delivery. Balancing local control with regionalism highlights the need for universally-agreed upon goals and guarantees of equity. Initiatives to preserve and enhance local control may include:

- Developing community activities and livable downtowns.
- Promoting fair citizen access to both local and regional government.
- Funding local area-specific needs with local area-generated funding.
Long Island Regional Planning Council

Long Island 2035 Regional Comprehensive Sustainability Plan

Technical Report - Economy
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.
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1 Methodology for Demographic & Economic Projections

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

Review of Historical Trends

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

HR&A utilized the following data sources for the historical trends analysis:
- 2005-2007 data from the U.S. Census Bureau American Community Survey 3-year estimates;
- Data from the U.S. Census’s County Business Patterns;
- Data from the U.S. Department of Commerce’s Bureau of Economic Analysis;
- Sperling’s Cost of Living Index;
- Assorted local reports, including studies by the Long Island Index and Long Island Association.

Selection of the NYMTC 2010-2035 Projections

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

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

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

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

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

1.1 Localizing NYMTC’s Projections

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

1.2 Sensitivity Analysis

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

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

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

2.1 Population & Demographics

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

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

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

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

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Figure 1: TRENDS IN LONG ISLAND POPULATION

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5 All 1970 data derived from Geolytics Census Data CD; All 1980 data derived from Geolytics Census Data CD; All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.
While overall Long Island population growth has been relatively steady, an evaluation of changes within specific age cohorts from 1990 to 2007 suggests that there have been changes to age distribution within the overall population. The 20-34 year old age group has declined significantly, shifting from 24% of the total population in 1990 to only 16% of the total population in 2007. While there are significant changes in age distribution between 1990 and 2007, overall Long Island population growth appears steady as growth in the 35-54 and 55+ age groups has offset the decline found in the 20-34 year old group.

![Figure 2: CHANGE IN POPULATION BY AGE](image)

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

2.1.2 There has been an overall loss in the 20-34 year old cohort.

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

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

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

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All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.
Figure 4: CHANGE IN POPULATIONS OVER 55 YEARS OLD

All 1990 data derived from 1990 Decennial Census; All 2000 data derived from 2000 Decennial Census; All 2005-2007 data is from the U.S. Census Bureau American Community Survey 3-year estimates and abbreviated as 2007.
2.1.4 Long Island is becoming more diverse, but remains geographically segregated.

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

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

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

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

Long Island employment opportunities are heavily dependent on service industries. In the past 5 years, industry growth occurred in locally-dependent service industries, and declined in regionally-driven services. This suggests a move towards lower paying jobs, as locally-dependent industries typically have lower wages than regionally-driven industries.

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

These trends are described below.

2.2.1  Long Island employment is heavily dependent on service industries.

Long Island’s overall employment growth has been driven largely by strong growth in Suffolk County, which has occurred primarily in service industries. Figure 8 demonstrates the current distribution of employment on Long Island according to the North American Industry Classification System (NAICS). Industries were determined to be either production (shown in shades of red) or service (shown in shades of blue) based on the nature of the associated occupations. Only 12% of total Long Island employment is within production industries where as nearly 84% is within service industries.
This distribution of employment is particularly important when the industries are further defined as either regionally-driven service industries (or export industries) or as locally-driven service industries, dependent upon local population growth or increased spending. Locally-driven service industries make up nearly 58% of total Long Island employment (shown on Figure 9 in green). This distinction is important because economic growth in Long Island is thus tied to population growth rather than the regional economy and exports. However, classification by NAICS codes may not allow for recognizing the export value of some sectors – one such example is biomedical research – which may serve as important long-term growth sectors for Long Island.
2.2.2 From 2002-2007, job growth occurred in locally-dependent service industries, and declined in regionally-driven services.

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

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

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

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

- Retail Trade, Accommodations and Food Services
- Health Care and Social Assistance
- Educational Services and Public Education
- Public Administration
- Administrative and Support and Waste Management and Remediation Services
- Arts, Entertainment, and Recreation
- Utilities
- Transportation, Warehousing and Wholesale Trade
- FIRE and Information
- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Non-Service Sectors

![Diagram showing service employment distribution](image-url)
2.2.4 Nassau County has a large NYC commuter population; mostly working in services, government and FIRE.

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

Further evaluation of this commuting workforce could be beneficial and may identify opportunities for economic growth in Long Island by pointing to occupations and industries which Long Island has the appropriate labor force to attract but does not currently have sufficient businesses to employ all of the qualified residents – thus leading to a large commuter population. However, given the magnitude of NYC job concentration, there are likely to be NYC commuters as a permanent part of the Long Island community.
Figure 11: PLACE OF WORK - LONG ISLAND RESIDENTS BY COUNTY, 2000

Figure 12: EMPLOYMENT OF LONG ISLAND RESIDENTS IN NEW YORK CITY - BY INDUSTRY, 2000

12 Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, 2000
13 Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, 2000
3 Population & Employment Projections

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

3.1 Population & Demographic Forecasts

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

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

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

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

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

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

Figure 13: NYMTC Population Forecast

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

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

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

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

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

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

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

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

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

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

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

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

Figure 16: PROJECTION OF TOTAL EMPLOYMENT, 2035

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

Staple industries in the Long Island economy are projected to remain significant sources of employment and drivers of the Long Island economy. These sectors include retail trade,
education and health services and government. In 2005, these sectors made up 45% of the total Long Island economy; in 2035, they are projected to comprise 42%. Other sectors are projected to grow to represent a larger percentage of total Long Island jobs than today. These sectors, which include professional and business services and leisure and hospitality, represented 20% of the total Long Island economy in 2005 whereas in 2035, they are projected to comprise 28%; that change represents an overall increase of over 176,000 jobs and a total increase of nearly 50%. In figure 17 below, the staple sectors are indicated with a green box and the growing sectors are indicated with a red box.

**Figure 17: Long Island Jobs by Sector, 2035**

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

The largest employment growth is expected to occur in the professional and business services industry, with nearly 100,000 new jobs expected between 2010 and 2035. Leisure and hospitality services and education and health services are also expected to increase with over 40,000 new jobs from 2010 to 2035 each. These projected trends will hold many current economic conditions in Long Island steady with the some of the largest employment industries such as education and health services and government being locally-driven service sectors as identified in the historical trends analysis.
Figure 19 best demonstrates this dynamic by illustrating how the most of the industries with high employment currently will continue to grow and remain a large percentage of the overall Long Island employment whereas most industries that represent a small percentage of current employment will experience little growth and remain a small percentage of overall Long Island employment in 2035. There are only a few exceptions to this trend: the leisure and hospitality sector is forecast to experience significant growth, launching it as one of Long Island’s top industry sectors, whereas retail trade is not projected to grow as quickly as other sectors causing it to slip from the third largest employment sector to the fourth, well behind professional and business services, education and health services and government in 2035.
Figure 19: Long Island Job Growth by Sector, 1990-2035
3.2.4 Sensitivity Analysis
Similar to the sensitivity analyses undertaken with the population projections, HR&A’s estimates to remove migration due to new employment opportunities suggest an alternative scenario that reduces projected 2035 employment by approximately 5%, or approximately 14,000 fewer jobs in 2035.

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

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

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

4.1 Changing Population & Demographics

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

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

2. How can Long Island improve its attractiveness to 20-34 year olds?
Similar to the senior population, Long Island will need to diversify its housing types to attract younger residents who form the foundation of the labor force. This will mean introducing more affordable and workforce housing, apartments, and opportunities for downtown living among greater entertainment amenities. Though somewhat of a chicken-and-egg paradigm, Long Island will also need to create employment opportunities attractive to this age group. Collaborations between local colleges and universities may create opportunities for bridging the gap between higher education and new employment.

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

4. How can Long Island accommodate growth in a means that mitigates negative environmental impacts, stresses on infrastructure, and increased governmental costs?
Long Island will need to respond with a new model for development, identifying nodes to channel proposed economic and residential growth that make more efficient use of Long Island’s scarce land through infill and brownfields redevelopment near existing infrastructure. Such development will likely be denser and provide a greater diversity of housing types and costs than common on most of the Island.
4.2 Building a Climate for Economic Growth

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

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

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

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

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

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

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

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

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

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

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

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

- **Population & demographics.** HR&A used a population cohort approach, similar to the model employed by NYMTC, and established a cross-tabulation of race/ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Asian/Other Non-Hispanic, Hispanic) by 5-year age cohorts.

- **Economy:** For the purpose of utilization as an input to the Arup team’s land use model, HR&A segmented industry sectors into three groups: (1) government, institutional, education & healthcare, (2) industrial, and (3) other. These groups were selected because they allow for projections of land use and governmental/fiscal considerations.\(^15\)

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

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

The localization methodology consisted of 3 main steps:

1. **Determine towns’ 2009 share of \(X\).** Using Census 2000 town-level data for age, gender and race/ethnic make-up, and Claritas 2009 market data for town-level employment counts, HR&A calculated each town’s share of \(X\) out of the total county.

2. **Calibrating NYMTC datasets.** NYMTC provided two relevant layers of forecasting data: (a) county-level totals for population and employment, and (b) Long Island-wide data for population by age, gender and race/ethnic cohorts, and Long Island-wide data for employment by specific industries. HR&A utilized 2009 county ratios for each \(X\) variable to share the detailed dataset (b) to the county level, and then calibrated those totals to match county-level totals in dataset (a).\(^16\)

3. **Project town distributions in 2035.** Based on the town’s share of \(X\) in the county in 2009, HR&A attributed the growth or decline of \(X\) in the county through 2035. HR&A then compared these findings with Suffolk County’s designated growth area projections, as well as NYMTC’s Transportation Analysis Zone projections.

\(^{15}\) For the purpose of economic policy analysis within the LI 2035 sustainability plan, it was deemed that NYMTC’s regional level was sufficient.

\(^{16}\) Minor adjustments were required for agricultural and mining jobs and non-classifiable establishments.

Calculations were made to share sole proprietors by industry by county, as well.
The localized data was then utilized to provide inputs to other components of the Long Island 2035 projections analysis, including the land use model, a tax and governance model, and a social equity model.
Long Island Regional Planning Council

Long Island 2035 Regional Comprehensive Sustainability Plan

Technical Report—Infrastructure and Transportation
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.
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Introduction

Long Island faces many challenges between now and 2035. Its infrastructure is aging and in need of repair. In some cases, infrastructure expansion will be required to meet the growing and changing needs of Long Island residents and businesses. Moving from status quo to adaptation will help Long Island as all Long Islanders work to engage in the 21st century economy and society. While infrastructure needs are pressing, demographic shifts, higher gasoline prices, and changing attitudes about suburban life and amenities are creating a new dynamic in how people make choices about housing, transportation, and lifestyle. This report seeks to assess the current and future challenges facing Long Island and propose some initial high-level recommendations for improving the state of infrastructure on Long Island.

Section 2 of this report presents an overview of Long Island’s existing infrastructure system based on research of numerous studies performed by federal, state and local governments and organizations. This data is supplemented with Long Island’s infrastructure and resource use, and interviews with organizations linked to infrastructure and resource use in Long Island.

Sections 3 through 5 describe the methodology, inputs, and results of a forecasting exercise that was undertaken by the project team to examine and evaluate key trends in resource use and transportation. The exercise uses a model that builds upon the scenarios and findings developed in the Land Use Technical Report. This model uses the projected land use outcomes from the 2010 Baseline and 2035 Business-as-Usual cases as inputs into an analysis of the demands on Long Island’s infrastructure today and in the future. These sections also include an assessment of future transportation conditions based on forecasts conducted by the New York Metropolitan Transportation Council (NYMTC) as part of their regional travel demand model.

Section 6 includes a discussion on what these goals might be, and how they could be developed into actionable strategies in the next stage of the Long Island 2035 Sustainability Plan. These goals will guide discussions about sustainable infrastructure and inform potential strategies for implementing changes to Long Island to address the needs of a sustainable future.
2 Baseline Infrastructure Assessment

2.1 Waste Overview

Summary: Long Island’s waste governance is highly decentralized, it has high waste generation rates (above national average), low recycling rates (below national average) and not enough capacity in its waste-to-energy plants to handle all of the waste (waste is transported off-island).1

Waste management on Long Island is governed by the regulations of the New York State Department of Environmental Conservation (NYSDEC). Each town (and incorporated City) is required to report its waste to the NYSDEC (See Figure 1). Long Island consists of 13 towns and 2 incorporated cities, however, the actual management of the waste materials varies across the island. There are approximately 50 residential waste managers in Long Island2 and additional waste haulers for commercial waste. Waste is collected and disposed of on Long Island in the following ways:

- Residential waste and small commercial waste is collected by Towns, either directly by the villages and hamlets or through a contracted private hauler.
- Commercial and industrial waste is usually handled by private haulers.
- Most of the waste is taken to an on-island transfer station and depending on the town’s disposal method is either incinerated at a waste-to-energy incinerator or transported off-island.

Long Island is above a sole source aquifer (discussed in Section 2.2.1) which caused the Environmental Protection Agency (EPA) in 1990 to close all Municipal Solid Waste (MSW) Landfills due to potential groundwater contamination.3 As a result, each town’s MSW is either incinerated at one of the four waste-to-energy incinerators on Long Island or sent out of state via long haul truck. Waste from construction & demolition (C&D) debris and clean fill (soils and fill materials) is still permitted to be landfilled.

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3 Liptak, B., Municipal waste disposal in the 1990s, Radnor: Chilton, ©1991, pg 26
The existing waste management approach in Long Island creates the following issues:

- Higher cost and variability in waste collection
- Less incentive to sell recyclables due to lack of economies of scale
- Minimal recycling goals (if any) – There are no specific targets that are being attempted nor any long term goals, ie, many cities and countries have joined the “zero-waste” goal

2.1.1 Waste Generation

Ultimately, the amount of waste generated determines the operations for each Town and City’s waste management. Long Island’s waste generation rate at six (6) pounds per person per day is above the national average of 4.6 pounds per person per day\(^4\). Shelter Island, Southampton, and Southold are towns that are trying to encourage recycling habits by requiring residents to purchase non-recyclables bags via a pay-as-you-throw (PAYT) program. This system has the potential to reduce the average waste generation rates across Long Island and has become popular in many areas of the United States.
Figure 2: Long Island waste generation rates\(^5\) (towns with pay-as-you-throw programs outlined in red)

As shown above, town waste generation rates per person vary widely. Babylon, East Hampton, and Smithtown have the highest rates while Southampton, Brookhaven, and Riverhead have the lowest. All the towns with pay-as-you-throw programs have waste generation rates well below the Long Island average.

Since reporting differs from town to town and commercial waste is not reported, there is no official estimate of total waste generated on Long Island. To determine the total waste for Long Island an estimate of the potential waste generation rates for each town was determined using the Arup model for 2009. This exercise yielded an estimate of approximately 3.5 million tons of waste generated per year on Long Island\(^6\). Of that waste generated approximately, 22% to 25% or 814,000 tons of waste is transported off-island.

Waste generation rates are habitual and reflect ingrained behaviors. The high generation rates in Long Island may be due to the following:

- Cost signals do not encourage recycling or reducing waste generation
- Little incentive to recycle – only three towns have fee based non-recyclable pick-up and only one town recycled organic waste
- Waste issues are not well-publicized – Do residents know where their waste is actually going or what the impact of their habits is?

To change these rates, it would be necessary to understand the behaviors of people in the community and what is needed to help them make better choices about recycling and resource use.

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\(^5\) “Suffolk County Solid Waste Management Report and Recommendations” and “Consolidation Analysis and Implementation Plan: Solid Waste”

2.1.2 Waste to Energy
There are currently four waste-to-energy facilities on Long Island and they produce about 6% of the electricity generated\(^7\). Residential and a portion of commercial waste from certain areas of Long Island are taken to one of these facilities:

- Covanta waste-to-energy facility in Hempstead (from Brookhaven and the Town of Hempstead)
- Covanta waste-to-energy facility in Huntington (from Huntington and Smithtown)
- Islip municipal waste-to-energy facility (from Islip)
- Babylon waste-to-energy facility (from Babylon)

2.1.3 Out-of-State Waste Management
Waste from all other towns and incorporated cities is hauled via truck to out-of-state landfills in Virginia, Pennsylvania and Ohio, etc. In addition, due to limited capacity at the waste-to-energy facilities, excess waste from Islip and Brookhaven is transported out-of-state. This means that long haul trucks must use available capacity on the region’s roadway systems to move waste to other facilities. It also means that Long Island is exporting a potential energy resource. Each town’s waste disposal methods and the approximate disposal percentage that is beyond permitted capacity and transported off-island are shown in Figure 3. The dots on the diagram are relative in size and are intended to show the relative degree to which waste must be disposed of on the island or transported to other locations. Not included in Figure 3 is waste from large commercial, institutional and industrial users that is typically taken out-of-state.

2.1.4 Recycling
Recycling is a proven strategy for reducing waste generation, and recycling programs can be very effective at changing people’s behavior. Recycling rates for Long Island are below the national average of 34% of total waste generated\(^9\) (Suffolk – 33%, Nassau – 20%).

\(^7\) LIPA
\(^9\) “Suffolk County Solid Waste Management Report and Recommendations” and “Consolidation Analysis and Implementation Plan: Solid Waste”
Table 1 lists each town’s recycling rate. The higher recycling rates in Eastern Long Island (Shelter Island, Southampton and Southold) could be contributed to pay-as-you-throw programs enacted by these Towns. These programs charge residents for Town garbage bags used for non-recyclables encouraging residents to recycle, which is free for disposal. Furthermore, Islip collects organic waste, which contributes to higher recycling rates. Note that these recycling rates are only for residential, public and small commercial facilities and do not include all large commercial/industrial recycling rates that are hauled privately.\(^{10}\)

Table 1: Long Island recycling percentages\(^{11}\)

<table>
<thead>
<tr>
<th>Town/Incorporated City</th>
<th>Recycling %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babylon</td>
<td>29.3%</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>31.9%</td>
</tr>
<tr>
<td>East Hampton</td>
<td>32.6%</td>
</tr>
<tr>
<td>Huntington</td>
<td>33.3%</td>
</tr>
<tr>
<td>Islip</td>
<td>40.0%</td>
</tr>
<tr>
<td>Riverhead</td>
<td>13.6%</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>44.0%</td>
</tr>
<tr>
<td>Smithtown</td>
<td>24.2%</td>
</tr>
<tr>
<td>Southampton</td>
<td>45.6%</td>
</tr>
<tr>
<td>Southold</td>
<td>56.4%</td>
</tr>
<tr>
<td>North Hempstead</td>
<td>11.9%</td>
</tr>
<tr>
<td>Hempstead</td>
<td>21.0%</td>
</tr>
<tr>
<td>Oyster Bay</td>
<td>19.0%</td>
</tr>
<tr>
<td>Glen Cove</td>
<td>10.0%</td>
</tr>
<tr>
<td>Long Beach</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

Additionally, the recycling percentages in Table 1 do not include all of the yard waste separated during pickup. Yard waste in the western half of Long Island is transported off-island to composting facilities in Pennsylvania. The Town of Southold, Brookhaven, Riverhead, Islip, East Hampton, Southampton and Shelter Island compost their organic waste at site within their town boundaries.

### 2.2 Water and Wastewater Overview

**Summary:** Long Island’s potable water use has increased over the last two decades (in a period of time where water usage rates have remained constant across the United States), Suffolk County has a well distributed potable water infrastructure and poorly distributed wastewater infrastructure, whereas Nassau County has a well distributed wastewater infrastructure and poorly distributed water infrastructure, and Long Island Sound is being polluted by New York City/Long Island sewage treatment plants.

Water usage rates on Long Island are some of the highest in the country. Part of this could be attributed to some of the lowest water bills in the nation. The low cost is primarily due to the abundance of water in Long Island’s groundwater system. It is also due to the low level of water treatment, which varies from well to well. Treatment costs are low in comparison to the surface water treatment systems located throughout the United States. Additionally, the high consumption rates could be attributed to innovations in automatic

\(^{10}\) Waste is reported differently in each Town. Most residential waste is reported but large commercial and institutional waste carted by private companies is usually not accounted for. In addition, construction and demolition waste and yard waste generation is not consistent for all Towns and Incorporated Cities. As a result, the recycling rates and disposal rates in the report do not include all the waste generated.

\(^{11}\) Recycling percentages as of 2006
sprinkler systems\textsuperscript{12}, making it easier to water large lawns more frequently. Figure 4 shows the high levels of water consumption during the summer season. Although water conservation techniques such as EPA Energy Policy Act of 1992\textsuperscript{13} for plumbing fixtures and leak detection equipment have been implemented over the past 20 years in Long Island, water consumption has increased.

![Figure 4: Suffolk County Daily Pumping Patterns from Suffolk County Water Authority Distribution Systems\textsuperscript{14}](image)

\textsuperscript{12} As per teleconference and email correspondence with the Suffolk County Water Authority (September 2009)
\textsuperscript{13} The Energy Policy Act (EPAct) of 1992 was a US government act that addressed energy and water use in commercial, institutional and residential facilities.
\textsuperscript{14} Information from Suffolk County Water Authority (September 2009)
2.2.1 Aquifers
Long Island is located above an Environmental Protection Agency (EPA) designated sole source aquifer. While some agricultural and industrial users draw from surface water sources for non-potable uses, groundwater is the sole source of potable water for Long Island. The Long Island aquifer system consists of the upper Glacial, which has the greatest risk of contamination; the Magothy, which is the most abundant water source; and the Lloyd aquifer, the oldest aquifer, which is used in areas with limited or contaminated access to the Glacial or Magothy aquifers (Figure 5). The use of the Lloyd aquifer is a controversial topic. The aquifer is the oldest and thought to be only used sparingly to preserve Long Island’s future groundwater source. However, due to contaminated groundwater or lack of access to the Glacial or Magothy aquifers, the Lloyd aquifer has been used for pumping, especially in Nassau County.

The number of water supply wells in Suffolk and Nassau County are shown in Table 2. It is important to note that although perceived as the future water source, the Lloyd does not have as much volume as the Magothy and requires more treatment in some cases due to high iron and manganese levels. Therefore, preserving and keeping the Magothy aquifer clean provides a viable future for Long Island groundwater.

Figure 5: Long Island aquifer system

<table>
<thead>
<tr>
<th>Aquifer level</th>
<th>Supply wells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nassau16</td>
<td>Suffolk12</td>
</tr>
<tr>
<td>Glacial</td>
<td>366</td>
</tr>
<tr>
<td>Magothy</td>
<td>167</td>
</tr>
<tr>
<td>Lloyd</td>
<td>66</td>
</tr>
</tbody>
</table>

15 Sole source aquifers are regions that are a minimum 50% dependent on the groundwater as its potable source of water, and there is no alternative drinking source. In Long Island about 100% of drinking water comes from groundwater.
2.2.2 Water Distribution and Use

Approximately 85% of potable water in Suffolk County is distributed by the Suffolk County Water Authority (SCWA)\(^2\) The remaining water supply is distributed by smaller public systems in South Huntington, Riverhead, Greenlawn, Dix Hills, Hampton Bays and East Farmingdale, and other private systems (~8%). The water quality in Suffolk County is monitored and reported by the Suffolk County Department of Health. The NYSDEC regulates the water source on Long Island (the Water Districts and the Department of Health both report to the NYSDEC).

Water in Nassau County is significantly less consolidated with 19 municipal and village owned systems and 56 individually owned water corporations. Water quality in Nassau County is monitored and reported by the Nassau County Department of Health. Water districts report to the Nassau County Department of Public Works (DPW) and the NYSDEC.

SCWA’s ownership of most of the water distribution in Suffolk County allows a single entity to control the infrastructure. This gives them the following advantages over a less distributed system in Nassau County:

- Greater chance to be awarded funding from state or federal government due to reduction in administrative burden and maximizing technical resources
- Allows for resource sharing in emergencies through SCWA’s distribution network, i.e., if a village’s water supply is contaminated, water can be pumped from a neighboring village
- Institutional knowledge

Water use per capita has increased in both Suffolk County and Nassau County over the past 10 years, with Suffolk County increasing at a higher rate, possibly due to lower density development (Figure 6). As previously discussed, household irrigation significantly contributes to increased water use rates on Long Island.

![Figure 6: Long Island water consumption trends](image)

\(^{17}\) Data for Nassau County was derived from Nassau County Department of Public Works, “Nassau County Groundwater Report” 2005. Data for Suffolk County was derived from “Long Island Index 2005".
2.2.3 Wastewater
Suffolk County Wastewater infrastructure is made up of 24 public treatment plants (managed by the Suffolk County Department of Public Works) and 190 private treatment plants. The largest of the public treatment plants is Bergen Point and smaller public and private treatment plants are needed for sewer districts along town centers and major corridors (see Figure 7). The remaining areas are without wastewater pipelines and treat wastewater using septic systems.

Nassau County has a more robust wastewater treatment network, a result of more dense development and the possibility of contaminating the groundwater source. There are 13 public treatment plants in Nassau County, the three main treatment plants are Bay Park, Cedar Creek and Glen Cove which treat approximately 80% to 90% of Nassau County’s wastewater. Figure 7 shows the wastewater treatment facilities in Nassau County.

Most biosolids, which are a product of wastewater treatment, are transported off-island to out-of-state facilities.

![Figure 7: Long Island wastewater infrastructure](image)

Much like Suffolk County’s water distribution ownership, Nassau County has advantages due to its wastewater distribution infrastructure such as:

- Greater chance to be awarded funding from state or federal government due to reduction in administrative burden and maximizing technical resources
- Less chance of groundwater contamination because wastewater is discharged to surface waters as opposed to septic systems and leach fields
- Well-developed institutional knowledge
- Ability to accommodate compact development – since a wastewater infrastructure is in place, there are fewer septic systems which can limit density
2.2.4 Water Pollution

The main contributors to groundwater contamination are septic systems (nitrates, ammonia, etc.), saltwater intrusion, fertilizers (from agriculture/golf courses), dry cleaners (PCE and TCE) and leaking underground storage tanks. Nitrate contamination in the groundwater has decreased in Nassau County due to increasing sewage treatment infrastructure, although sewage contamination is still possible in dense areas without pipelines. Since Suffolk County has less wastewater infrastructure, septic system nitrate contamination occurs, especially in areas with high groundwater levels such as the North Shore and South Shore. Contamination is also likely in regions with high densities, as there is less area for appropriately sized septic system and leaching fields. Another current groundwater contaminant which may continue to be problematic is methyl-tertiary-butyl ether (MTBE) from discontinued underground gasoline storage tanks. Policy and health codes have limited contamination from dry cleaners (reducing PCE and TCE contamination) and old industrial practices in Long Island (reducing solvent and heavy metal contamination). Nitrate loading has increased in the Long Island Sound due to discharge from the wastewater treatment plants and surface water runoff. This has led to eutrophication which causes a decrease in dissolved oxygen (hypoxia) in the water, which suffocates aquatic species and destroys wetlands, and elevated pathogen levels causing shellfishing restrictions. State and Federal authorities are continuing to restrict the amount of nitrate and phosphates in sewage effluent discharge.
2.3 Energy Overview

Summary: Electricity rates on Long Island are among the highest in the country, much of the energy supply comes from off-island resources, less than 5% of the energy supply of Long Island is derived from local renewable energy sources, and residential and commercial buildings are energy inefficient.

2.3.1 Energy Providers

Electricity is generated from and provided by the following sources:18

- National Grid power plants,
- LIPA owned power plants (18% of the Nine Mile 2 Nuclear plant),
- Individual generators,
- Tie-in connections with Con-Edison and NYPA,
- Interconnections with the New England Cross-Sound Cable, and
- The PJM ISO (Neptune Cable).

The majority of the electricity is delivered to Long Island customers through the Long Island Power Authority (LIPA). Exceptions include facilities operated by some State of New York government agencies receiving electricity via New York Power Authority (NYPA) as well as private turbines at industrial and institutional facilities. Gas is delivered to the island via Iroquois interconnection pipeline to the National Grid gas distribution system. An overview of the energy infrastructure is illustrated in Figure 8.

![Figure 8: Long Island's energy infrastructure hierarchy](image-url)

LIPA’s power supply sources are shown in Figure 9. A majority of the power (57%) is supplied by National Grid’s power plants. Private sector power plants (fast track units) are tied into the grid to provide approximately 9% of the power supply. LIPA’s On-Island power plants provide approximately 4% of the power. Off-Island resources such as the Nine Mile 2 Nuclear power plant (of which LIPA is an 18% owner) provide 4%. Tie-in to the PJM and ISO-New England markets, as well as contracts with the NYPA and Con-Edison make up the remaining 26% of tie-in capability.

Figure 9: Generation and Transmission Resources

2.3.2 Electricity Rates
Long Island has some of the highest electricity rates in the country. This is largely due to high state and local taxes (property taxes), operations and maintenance, fuel prices, and approximately 15% of Long Island residents’ electric bills are attributed to LIPA’s debt. About half of the $7 billion debt is attributed to the construction and decommissioning of the Shoreham Nuclear Power Plant. Currently, there is federal legislation to reduce the interest rates on this debt.

2.3.3 Fuel Sources
The LIPA grid sources for electricity, heating, and cooling as of 2008 are presented in Figure 10. Note that this data does not include the power mix from coal fired powerplants, as reported in the Neptune power purchase agreement (the value was not reported), or sources of fuel for transportation.

Renewable energy provides approximately 9% of the power mix from pumped storage hydroelectric purchases and waste-to-energy and landfill gas to energy purchases. This is well below the amount of the 30% renewable energy portfolio that LIPA is trying to achieve by 2015.

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Figure 10: Electricity supply mix to LIPA

2.3.4 Heating Fuels

The majority of residential heating is fueled by heating oil (approximately 65%) and natural gas. However, there are some areas that use liquid petroleum gas (LPG) and wood.

Oil sources are supplied by refineries in New Jersey and Pennsylvania, by the Colonial Pipeline from the Gulf Coast, and through foreign imports. Heating oil is delivered by numerous private oil companies via oil truck to individual oil tanks.

Natural gas is supplied to the island mainly through the Iroquois Pipeline (Figure 11) and procured by National Grid. The remaining is delivered via Transco pipeline. Natural gas is distributed to households, commercial, institutional and industrial sites by National Grid.

Figure 11: Long Island purchased energy (electricity and gas)

Figure 9 and Figure 11 show that Long Island’s energy relies heavily on out of state sources (gas, oil and electric). If, for example, a catastrophe was to occur causing the Iroquois or Transco pipelines to fail, residents and businesses will be without an important source of gas used for electricity generation and heating.

2.3.5 Electricity Demand

In 2008, Long Islanders consumed approximately 21,000 GWh of electricity or 7,700 kWh per resident. These figures exclude electricity consumed by facilities which generate their own electricity and institutions receiving electricity through NYPA. If these facilities were included, the figures would be approximately 9,875 kWh per person per year. Both of these values are below the national average of 13,635.7 kWh per person per year. This could be the result of relatively high electric bills in the region, although this correlation has not been confirmed. Figure 12 shows the increase in electricity use by Long Islanders from 2000 to 2007. Both commercial and residential electricity use increased over this period.

Figure 12: Electricity Consumption from 2000 to 2007

2.4 Climate Change Overview

Summary: Long Island relies mainly on fossil fuel combustion for electricity generation. Residential heating is disproportionally dependent on heating oil and transportation relies heavily on gasoline. All three of these factors make the region a large contributor to CO₂ emitted into the atmosphere. Long Island is also vulnerable to climate change and natural disaster due to its long shorelines and susceptibility to catastrophic weather events.

2.4.1 Climate Change Mitigation

Carbon dioxide is an important Greenhouse Gas (GHG) because while it transmits visible light it also absorbs infrared radiation, trapping heat within the surface to the troposphere. CO₂ is produced by animals, plants, and microorganisms; it is used during photosynthesis and is a major component of the Carbon Cycle. Five hundred million years ago it was 20 times more prevalent than it is today. Inorganic CO₂ is also emitted naturally (e.g. by volcanoes and hot springs) but emissions from human activities including the combustion of fossil fuels are currently far more significant. The global average atmospheric concentration of CO₂ is about 375-385 ppm by volume but varies with location, urban areas tending to be higher. Levels indoors can be up to 10 times the atmospheric concentration. Human activities such as burning fossil fuels and cutting down forests have increased atmospheric carbon dioxide by about 35% since the industrial revolution.

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22 Based on calculations from Arup’s model
revolution. Globally, scientists are concerned that the increase in GHGs is causing a rise in temperatures, and ultimately climate change.

Carbon footprint is a measure of greenhouse gas emissions and CO₂ from all activities associated with a region, expressed as carbon dioxide equivalents. It is a measure of human activity impacts upon the environment. The carbon footprint for a city or region is calculated by taking into account two aspects:

- The direct (or primary) footprint – this is a measure of direct emissions of CO₂ from energy consumption, transportation, waste disposal and water consumption
- Carbon offsets – this refers to investments in projects that either prevent the emission of an equivalent amount of CO₂ elsewhere or remove it from the atmosphere directly.

The United States carbon footprint in 2006 was approximately 5.752 billion metric tons CO₂ per year at a rate of 19 metric tons/person/year²⁴.

The 2009 carbon footprint for Long Island was approximately 60.5 million metric tons of CO₂ per year at a rate of 21.2 metric tons of CO₂ per person per year, which is higher than the national average.

2.4.2 Climate Change Adaptation
Long Island is vulnerable to rising sea levels due to the length of its coastline (approximately 400 miles). From 1971 to 2000, flood heights were approximately 6.3 feet for 1 in 10-year storms, 8.6 feet for 1 in 100-year storms, and 10.7 feet for 1 in 500-year storms²⁵. The increased frequency of intense storms and increased precipitation due to climate change are likely to increase coastal flood events in the future²⁵. This vulnerability is increased by the lack of a consensus for an Emergency Evacuation Plan for all of Long Island. The last evacuation plan written for Long Island was developed during the permitting process for the now decommissioned Shoreham Nuclear Power Plant (Evacuation Plan’s were developed by Nassau and Suffolk County, separately). Although it was approved by FEMA, it was not approved by New York State and Local officials. There continues to be a need for a comprehensive evacuation plan for Long Island.

2.5 Transportation Overview

2.5.1 Summary:
Long Island has a mature transportation network of roads, highways, and railways. The low density development pattern means that transportation needs are predominantly served by private cars and goods are moved by truck. However, transit serves an important role for commuters to Manhattan during the week, some reverse commuting to Long Island and transportation to Long Island vacation destinations in the summer months. Limited access to rail and bus services and low density development means there is a reliance on the private car for all travel needs which leads to high levels of congestion throughout the day. Mobility options for a wide range of income groups are limited by lack of suitable alternatives to the automobile, and bicycle and pedestrian infrastructure is lacking. Finally, Long Island has limited connections to the greater region and nearly all transportation modes must pass through the most congested jurisdiction in the region, New York City, to reach destinations in the tri-state area and beyond.

2.5.2 Roadways
Auto travel is the primary mode of transportation in Long Island with very high mode shares across the island, particularly in Suffolk County. In most areas, over 90% of trips are taken by automobile. As the population of the island grows, the majority of trips are being accommodated by the Island’s roadway network. The result is that the current state of roadway travel in Long Island is characterized by congestion where lengthy delays present a burden to Island residents and a drain on local businesses.

²⁴ World Bank, World Development Indicators: CO2 emissions per capita (2009)
The highway system is focused on east-west travel, with the Long Island Expressway, Southern State Parkway, Northern State Parkway, and the Sunrise Highway providing a large amount of roadway capacity for travel the length of the Island. However, roadway capacity for north-south trips across the Island is limited. As a result, several of the key north-south roadways such as the Sagtikos Parkway and Route 110 exhibit very high levels of congestion and low travel speeds, not only during daily peak hour periods but at many other times during the day as well. The high volume of trucks on the region’s roadways and highways increases this traffic congestion. (See Section 2.5.5 on freight.)

In addition to the major through routes, congestion is experienced in most downtown and commercial centers on Long Island. In order to continue to support growth without worsening congestion, Long Island will need to adopt a comprehensive strategy for improving land use and transportation integration.
2.5.3 Rail Transit

Like the highway system on Long Island, the regional rail transit was originally built for the primary purpose of carrying people into and out of New York City. The Long Island Railroad (LIRR), a part of the Metropolitan Transit Authority (MTA), continues to serve this function well today. The LIRR is the largest commuter railroad in the United States, operating eleven rail lines on almost 600 miles of track. The system carried an average weekday ridership of over 300,000 travelers in 2009. The LIRR system has 124 stations, including 57 in Nassau County and 41 in Suffolk County.

Figure 14: LIRR System Map

According to the Long Island Index 2009 Report, ridership on the LIRR system grew at 2% between 2000 and 2007, a much slower rate than other regional commuter rail systems over the same period, such as Metro North (12% growth) and New Jersey Transit (20% growth). Some of the growth enjoyed by Metro North and New Jersey Transit is likely due to faster population growth in their respective service areas. Another factor that may cause growth in LIRR ridership to lag behind is that the LIRR has not added the types of services these other systems have since 2000, such as Metro North’s third track and New Jersey Transit’s increased commuter rail service. However, the LIRR has begun to adapt to changing conditions on Long Island. The LIRR has made several service improvements in recent years to augment its reverse-commute and off-peak services to accommodate this growing market.

2.5.4 Bus Transit

Bus transit represents a small but growing part of the transportation mode share on Long Island. The two major operators, the MTA Long Island Bus system and Suffolk County Transit, help supplement the LIRR rail system in several ways: by connecting travelers to LIRR stations, by providing limited coverage of north-south trips and other intra-island segments that are underserved by the LIRR today, and by serving shorter routes between stations and areas that are outside of the LIRR catchment area.

The MTA Long Island Bus system serves Nassau County as well as parts of western Suffolk County and eastern Queens in New York City. This system connects 96 communities, 47 LIRR train stations, five New York City Transit subway stations, and numerous job centers throughout the region. Almost 110,000

27 Metropolitan Transit Authority (http://www.mta.info/lirr/html/lirrmap.htm)
28 Long Island Index 2009 Report
passengers per day are carried on 54 routes representing 954 route miles. In addition, the Long Island Bus system operates the largest fleet of all natural-gas-fueled buses in the country.

Suffolk County Transit is a county agency that oversees the funding and operational planning for several privately run bus companies in Suffolk County and southeastern Nassau County. This public-private partnership operates 53 bus routes and carried over 6.4 million passengers in 2008, for an average of around 17,500 riders daily. The Town of Huntington operates its own bus system, called Huntington Area Rapid Transit, or HART, as do the villages of Patchogue and Port Jefferson.

Ridership on the two major bus systems on Long Island has enjoyed growth over the last decade. According to the Long Island Index, the MTA Long Island Bus service experienced an 8% growth in ridership since 2000, while the Suffolk County Transit has seen growth of 35% in the same time period. The Suffolk County Transit system added nearly 500,000 riders between 2007 and 2008, a one-year increase of 7.5%. This indicates that the rate of growth has increased in recent years. This difference in growth rate of the two systems is likely due in part to faster population growth in Suffolk County, but it may also indicate that service increases to the Suffolk County Transit system at the beginning of the decade are paying dividends.

2.5.5 Air
Long Island’s residents and businesses have convenient access to some of the best-served domestic and international commercial airports in the world in New York’s LaGuardia and JFK, which had a combined 725,000 commercial flights in 2008. Long Island MacArthur Airport in the Town of Islip is the only facility in the two counties that is served by major commercial carriers. In 2008, MacArthur Airport served over 178,000 airplane operations, of which over 23,000 were scheduled commercial flights. Other airports on Long Island such as Republic Airport, Brookhaven Airport, and Spadaro Airports in Suffolk County serve the general aviation market and help alleviate congestion at the region’s major hubs. According to the NYMTC 2010-2035 Regional Transportation Plan, these three are designated as general aviation reliever airports by the Federal Aviation Administration.

2.5.6 Freight
The majority of freight in Long Island is carried by truck on the region’s highways and local roads. According to the NYMTC 2010-2035 Regional Transportation Plan, the New York metropolitan area as a whole ranks lower than 23rd of the 25 largest urban areas in the country in the percentage of freight carried by rail, at around 1% of the regional total. This is due to several factors, including the lack of connections to the national rail network, the predominance of passenger service on the region’s rails, physical limitations in terms of vertical and lateral clearance along the older rail lines, and lack of space for rail yards and intermodal facilities.

Freight carried by trucks to and from Long Island must pass through the congested core of New York City. The New York City Department of Transportation (NYCDOT) requires that all vehicles defined as trucks by Section 4-13 of the New York City Traffic Rules (vehicles with two axles and six tires, or three or more axles) must follow the designated Truck Route Network. This consists of Local Truck Routes and Through Truck Routes, shown in Figure 15 with blue and red lines, respectively. This limited number of routes for truck freight onto and off of Long Island includes only the following designated Through Truck Routes:

- Northern Boulevard
- I-495 Long Island Expressway
- Hillside Avenue

29 From: GCR & Associates, Inc. derived from the FAA’s Aeronautical Information Services. (http://www.gcr1.com/5010web/default.cfm)
30 From: GCR & Associates, Inc. derived from the FAA’s Aeronautical Information Services. (http://www.gcr1.com/5010web/default.cfm)
- Jamaica Avenue
- Hempstead Avenue
- North and South Conduit Avenue
- Rockaway Boulevard

![Map of Long Island with highlighted truck routes.]

Figure 15: NYCDOT Designated Truck Routes

While Long Island is particularly constrained by the congestion and physical barriers that New York City provides, there are a small number of rail freight lines in the region. The New York & Atlantic Railway (NYAR) has operated freight service on tracks and facilities owned by the LIRR since 1997. It currently carries around 20,000 carloads annually over 269 route miles of track. While most of the routes operated by NYAR share tracks with commuter trains, there are a few lines that are used for freight only. These include the Bushwick Branch that splits from the Montauk Branch at Maspeth, and the Bay Ridge Branch that splits from the Montauk Branch at Fresh Pond and connects with a CSX route that runs over the Hell Gate Bridge to points north.

The result of such a high truck freight mode share in the Long Island region is increased congestion on the area’s roadways and a higher than average regional carbon footprint from transportation sources. Developing strategies to move freight from trucks to rail could help mitigate both of these issues in the future.

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3 Resource Use Forecasting Methodology

3.1 Arup Modeling Approach

In addition to understanding the existing conditions on Long Island today, the purpose of the Infrastructure Report is to forecast current consumption rates over a given period of time to understand what future demands will be and the environmental implications that result from those demands. Arup’s modeling approach allows our team to streamline the analysis of significant amounts of data related to resource use, land use, and economic growth on Long Island. The model developed for this exercise builds up a baseline scenario based on existing performance data for Long Island such as housing density, waste generation, resource use, etc. This baseline model is calibrated using regional baseline data for resources such as energy, transport, water, waste and carbon. Planning assumptions and technical data are applied so that the baseline results match the observed existing conditions. Baseline 2008 land use assumptions and methodology are described in detail in the Land Use Technical Report.

The 2008 baseline model of land-use and development patterns for the towns of Nassau and Suffolk County used in this analysis was developed using calculations of gross floor area by built program type based on residential population, household and housing unit information from the US Census Bureau’s 2008 American Community Survey, the Regional Plan Association’s parcel-level land use database, and employment figures presented by HR&A.

From this baseline platform, future scenarios are forecast by adjusting the values for variables related to land use, economic growth and changes in major infrastructure. These adjustments are based on observed trends and assumptions related to future conditions that were developed by the modeling team. The forecast model outputs include predictions for energy demand, water demand, waste generated, and carbon emitted.

3.1.1 Forecasting Assumptions

For this analysis, the purpose of the forecast is to extrapolate the baseline case using current trends with zero policy change to determine the amount of resource consumption in the future scenario. This forecast represents an approximation of future conditions based on the best available current knowledge. As events unfold, new initiatives, new technologies and new options will be grasped to minimize resource consumption and transportation. At this point in the Sustainability Plan’s development it is difficult to predict these policy changes and their resulting rates of change and implementation timeframe for resource consumption and transportation. Therefore, for the purposes of this report they have been excluded.

The following assumptions were used for the waste, water and wastewater and energy using Arup’s model:

- Land-use assumptions for present (2008) and 2035.
- Waste generation rates and recycling rates remain unchanged from 2009 to 2035.
- Water use and wastewater generation rates remain unchanged from 2009 and 2035.
- Energy consumption and intensity rates remain unchanged between 2009 and 2035.
- Changes in transportation assumptions reflect the NYMTC projection model.

3.1.2 Land Use Scenarios

In conjunction with the Land Use Technical Report, Arup developed an analytical model which combines Census American Community Survey data from 2008 and the Regional Plan Association’s parcel database, employment and demographic projections from NYMTC and HR&A, and a set of quantitative algorithms developed by the Arup team to estimate and project land-use patterns by Long Island town. This approach and its principle findings are detailed in the Land Use Technical Report. This exercise of forecasting
infrastructure and resource needs uses the 2035 Business-as-Usual scenario as the comparator for existing conditions.

In the 2035 Business-as-Usual scenario (“Business-as-Usual”), land-use and development patterns for 2035 were projected for Long Island towns in a scenario where growth occurs and the development typologies and demographic characteristics are consistent with current zoning and the expressed future land-use intentions of the towns. This means that current trends were used, as opposed to historical ones, in forecasting the demand for real estate product types. In addition, demographic characteristics in the forecast reflect emerging instead of purely historical patterns. Top-line population growth projections for the two counties are consistent with the other scenarios in the Land Use Technical Report, which used modified NYMTC projections as a basis. Changes in developed land-use are based on the 2008 baseline characterization. This scenario assumes smaller household sizes and thus more total households.

The 2035 Business-as-Usual Case represents our best estimate as to what Long Island’s future will look like from a land-use perspective based on current realities, all other factors being equal and without significant changes in both markets and current policies. This represents a case that makes use of those smart growth and TOD strategies either adopted by or under consideration by Long Island towns. This scenario does not reflect strategies that the Long Island Sustainability Plan may suggest or any policy changes which may result from those strategies. The projection of outcomes with such strategies taken into account will occur in a subsequent stage of the LISP process.

3.2 Transportation Methodology

In order to assess future transportation trends on Long Island, Arup coordinated with the New York Metropolitan Transportation Council (NYMTC), the agency responsible for developing the long-range transportation plan for the New York metropolitan region. A summary of NYMTC’s findings and recommendations can be found in the 2010-2035 Regional Transportation Plan (RTP). The relevance of these findings for the Long Island region is discussed in Section 5.6 below.

In addition, to understand the current state of transportation on Long Island and likely future trends in greater detail, the Arup team examined a large set of existing and projected travel data developed by NYMTC. As MPO for the local region, NYMTC creates and maintains a regional travel demand forecast model that is used to predict future travel patterns. This Best Practices Model (BPM) has many planning and policy applications, from generating regional emissions and air quality forecasts to evaluating proposed new transportation infrastructure projects. As a part of their travel demand forecast, NYMTC conducts detailed demographic forecasts of households and employment that serve as inputs to the transportation model. The analysis in this report examines data from the NYMTC BPM in order to assess the effects of projected travel patterns on Long Island.

NYMTC provided Arup with data from the 2009 existing conditions model and projected travel data from the 2035 proposed model. This data came in the form of model inputs including demographic information, and model outputs including origin/destination matrices for the entire MPO region. NYMTC breaks the entire MPO region into transportation analysis zones (TAZs). Demographic data such as total population, number and size of households, and number of jobs is compiled by TAZ in order to calculate the number of trip ends – origins and destinations – for each TAZ. Our team sorted and filtered this data to examine how three key metrics can give insight into the future of transportation on Long Island:

- Vehicle miles traveled (VMT) for automobiles
- Average vehicle trip length for automobiles
- Auto mode share percentage

These data were examined for the baseline year of 2009 and the forecast year of 2035. The change in data values between 2009 and 2035 was also examined to provide additional understanding of the projected
travel trends over time in the business as usual scenario. For each of the following metrics, the base data has been analyzed by TAZ, town and county. This provides a range of comparisons in order to examine and understand trends at different levels of detail.

3.2.1.1 Vehicle Miles Traveled (VMT)
One of the most important measures of existing and future travel is vehicle miles traveled in automobiles. VMT data provides an analog for the amount of emissions associated with transportation. Our team calculated VMT by multiplying the trip distance between each origin-destination zone pair by the number of trips between each pair. These distances were then summed up by origin zone and destination zone to provide a measure for each TAZ, town, and county.

3.2.1.2 Average Auto Trip Length
This metric was examined to gain insight into how far people in certain areas are willing to travel – or are required to travel – on a daily basis. Areas where this measure is high can suggest inefficient transportation infrastructure or land uses that are not coordinated with demand. One of the ways to reduce VMT, and therefore emissions, is to coordinate development and transportation infrastructure in a way that reduces and shortens auto trips. Our team calculated this measure by dividing VMT by the total number of auto trips for each TAZ, town, and county.

3.2.1.3 Auto Mode Share
The percentage of trips that use automobile as the primary mode is useful in assessing the amount of choice people have in their daily travel. Areas where auto mode share is very high generally correspond to areas where viable transportation choices are low. Shifting people from cars to transit is another way to reduce congestion and emissions from travel. Our team calculated auto mode share by dividing the number of vehicular trips by the total number of trips for each TAZ, town, and county.
4 Baseline Model Inputs

4.1 Waste Inputs

The following information was used for the baseline:

- Waste generation rates for residential households in pounds/unit/day in Suffolk County and pounds/unit/day in Nassau County (determined from existing waste management practices in Long Island) are shown in Table 3.

Table 3: Waste generation rates used for projection

<table>
<thead>
<tr>
<th>Town/City</th>
<th>Single-family lb/unit/day</th>
<th>Multi-family lb/unit/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babylon</td>
<td>19.50</td>
<td>10.83</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>13.00</td>
<td>7.22</td>
</tr>
<tr>
<td>East Hampton</td>
<td>18.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Huntington</td>
<td>16.50</td>
<td>9.17</td>
</tr>
<tr>
<td>Islip</td>
<td>19.00</td>
<td>10.56</td>
</tr>
<tr>
<td>Riverhead</td>
<td>11.00</td>
<td>6.11</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>11.00</td>
<td>6.11</td>
</tr>
<tr>
<td>Smithtown</td>
<td>24.00</td>
<td>13.33</td>
</tr>
<tr>
<td>Southampton</td>
<td>7.00</td>
<td>3.89</td>
</tr>
<tr>
<td>Southold</td>
<td>11.00</td>
<td>6.11</td>
</tr>
<tr>
<td>North Hempstead</td>
<td>17.00</td>
<td>9.44</td>
</tr>
<tr>
<td>Hempstead</td>
<td>20.00</td>
<td>11.11</td>
</tr>
<tr>
<td>Oyster Bay</td>
<td>14.00</td>
<td>7.78</td>
</tr>
<tr>
<td>Glen Cove</td>
<td>14.00</td>
<td>7.78</td>
</tr>
<tr>
<td>Long Beach</td>
<td>13.00</td>
<td>7.22</td>
</tr>
</tbody>
</table>


- Waste generation rates for industrial uses were determined using the CIWMB’s Estimated Solid Waste Generation Rates for Industrial Establishments (0.006 lbs/sqft/day)

- Waste recycling, off-island disposal and incineration percentages were determined using the following reports:
  - Suffolk County, “Suffolk County Solid Waste Management Report and Recommendations” ©2007
  - O’Connell, C., Cahill, M., Heil, J. and Swanson, L. “Long Island Waste Index” ©2004
4.2 Water and Wastewater Inputs

The following assumptions were used for the water projections using Arup’s model:

- Suffolk County DPW Manual for On-site Sewage was used to estimate indoor water use and wastewater generation for residential, commercial, industrial and institutional spaces. Table 4 shows the interior water consumption rates used.

\[
\text{Table 4: Internal water use rates}
\]

<table>
<thead>
<tr>
<th>Land-use Type</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>gpd/unit</td>
<td>300</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>gpd/unit</td>
<td>225</td>
</tr>
<tr>
<td>Commercial</td>
<td>gpd/sf</td>
<td>0.045</td>
</tr>
<tr>
<td>Industrial</td>
<td>gpd/sf</td>
<td>0.04</td>
</tr>
<tr>
<td>Institutional</td>
<td>gpd/sf + gpd/job</td>
<td>0.03 + 2.5</td>
</tr>
</tbody>
</table>

\text{gpd = gallons per day; sf = square foot}

- Interviews with Suffolk County Water Authority and the Nassau County DPW revealed that the amount of water used for irrigation has increased over the past two decades. Today, approximately 40% of residential water use is used for irrigation.

- A ratio was determined for Nassau and Suffolk County based on the percentage of building footprint per lot area data developed by HR&A and Arup’s land use model.

These values were then calibrated to determine the potable water use and the wastewater discharge.

4.3 Energy Inputs

- Single family residential use energy intensity values were determined using Residential Energy Consumption Survey (RECS) data for different home types in New York.

- Commercial and institutional electricity and heat (gas or oil) intensity values were determined by Trane Trace energy model for a constant air volume heating and cooling a four-story office building.

- Utility consumption (LIPA, LIRR, etc.) remained approximately 2% of the electricity requirements.

\text{Average of Office} = 0.06 \text{ gpd/sf and Retail} = 0.03 \text{ gpd/sf}
4.4 Climate Change Inputs

The following assumptions were used in the climate change projections.

- Sea-level rise based upon Niels Bohr Institute 100-year projection
- Electricity from water treatment, distribution and wastewater treatment is included in the Carbon Footprint. Table 5 presents the emission factor used for oil and gas consumption. The electricity emission factor was calculated using the 2008 grid mix.

Table 5: Emission factors

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Emission factor kgCO₂eq/kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>0.758</td>
</tr>
<tr>
<td>Gas</td>
<td>0.1848</td>
</tr>
<tr>
<td>Electricity</td>
<td>0.443</td>
</tr>
</tbody>
</table>

- Waste emission rates were sourced from the ICLEI CACP model for landfills and incinerating waste (long-haul transportation emission rates were not included in the analysis). These rates include emissions and sequestration associated with paper, food, yard waste, wood/textiles, and residual waste.
- Water electricity rates for distribution and treatment were sourced from the report "Water-Related Use in California" reported by the Assembly Committee on Water, Parks and Wildlife, February 20, 2007.
- Transportation emissions assumed a light truck mix of 50% gas and 50% diesel. Emission factors are shown in Table 6 below.

Table 6: Transportation emission factors

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Gasoline kg/mi</th>
<th>Diesel kg/mi</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Auto</td>
<td>0.489</td>
<td>-</td>
<td>USEPA Technical Guidance on the Use of MOBILE 6.2 for Emission Inventory Preparation, August 2004</td>
</tr>
<tr>
<td>Light Truck</td>
<td>0.647</td>
<td>0.543</td>
<td>&quot;</td>
</tr>
<tr>
<td>Heavy Truck</td>
<td>-</td>
<td>1.614</td>
<td>&quot;</td>
</tr>
<tr>
<td>Urban Bus</td>
<td>-</td>
<td>2.151</td>
<td>EMFAC, Urban Bus</td>
</tr>
</tbody>
</table>
5 2035 Forecast Analysis

5.1 Waste Forecast

The waste generation rates per capita in Nassau County indicate a decrease in 2035 compared to 2009, as shown in Figure 16. This is due to a projected increase in multi-family homes compared to single family homes. Generally, multi-family, or more densely populated neighborhoods generate less waste than single family neighborhoods.

Figure 16 illustrates that generation rates in Suffolk County are higher than Nassau County in 2035 for both cases. This is a result of an increase in the number of residential units (both single family and multifamily) in Suffolk compared to Nassau.

In 2009 the results show, at least 815,000 tons per year, or approximately 22% - 25% of waste generated is transported off-island (9% Suffolk and 33% Nassau). If recycling rates remain the same and the existing waste-to-energy plants do not increase capacity or no additional waste-to-energy technology is introduced, then approximately 1 million tons of waste will need to be transported off-island in 2035 (the high scenario is about 39,000 more tons of waste per year off-island).

![Figure 16: Projected waste generation (left) and per capita waste generation (right)](image)

5.2 Water

As shown in Figure 17, Long Island water consumption will increase in the next 26 years. If trends continue, consumption rates may increase as they have in the last decade (this trend was not taken into account in the projection study). The top priority, as per discussion with the SCWA, is to reduce water consumed as a result of automated sprinkler systems. Regionally, Long Island has a surplus of water; however, if total water use increases, as Figure 17 suggests, then less water will be available. Reduced water availability will have the secondary effect of increasing energy use due to increased treatment and distribution for water that previously needed less treatment. In addition, if impervious hardscapes increase due to development or precipitation rates decrease due to climate change, the groundwater recharge could potentially be less than that consumed. Increased development may also increase the potential for contamination (if adequate sewage infrastructure is not developed).
Due to increased building footprints and build out area in Suffolk County for the 2035 Business-as-Usual scenario, irrigation water use decreases in Suffolk County.

Figure 17: Projected potable water use total (top) and potable water use per person per day (bottom)

5.3 Wastewater Forecast

The projected water increase will require additional water treatment systems and additional wastewater treatment plants. Currently, the capacity of the Nassau County wastewater treatment system is approximately 150 MGD (Suffolk County is more difficult to predict due to septic system treatment). If this is exceeded then additional wastewater treatment plants will be necessary. In Suffolk County, the additional wastewater generation (Figure 18) from increases in density will potentially increase the risk of groundwater contamination if septic systems continue to be used.

Figure 18: Projected wastewater generation volumes
5.4 Energy Forecast

As shown in Figure 19, energy consumption per capita decreases in the future scenario. This is predominantly due to increased density in Long Island. The higher density scenario (2035 Business-as-Usual) has lower per capita energy consumption than the 2009 scenario. As expected, the total energy consumption increases in both scenarios. It is important to note that electricity and gas/oil intensity rates are stagnant in this projection, which is not necessarily the case in some future scenarios. For example, LIPA’s electricity projection included a 3.6% in total electricity consumption increase per year.

![Energy Consumption Chart]

Figure 19: Projected per capita energy consumption (top) rates and total energy consumption (bottom)
### 5.5 Climate change

The estimated and projected carbon footprints for Long Island are illustrated in Figure 20. By 2035, Long Island will have a larger impact on the planet with a projected 12% increase in carbon emission from today.

![Figure 20: Long Island's Carbon footprint](image)

Using the Niels Bohr Institute 100-year projection, it is expected that sea level rise is one meter by 2035. The areas potentially affected by this level of rise are indicated in red on the figure below.

![Figure 21: Long Island's potential sea level rise](image)
5.6 Transportation Forecast

The demographic and transportation forecasts developed by NYMTC as part of the Regional Transportation Plan present a future for Long Island characterized by a few sobering trends as well as some positive signs.

For example, the total number of vehicle miles traveled (VMT) is projected to increase 14.4%, also faster than the number of auto trips. This means that people who do drive will be traveling even further on average than they are today. And the projected increase of daily vehicle hours of travel is projected to rise by an even greater amount, at 24.4%. This extra time spent in vehicles likely means that left unchecked, congestion could be even worse in the future than it is today.

There are some positive signs however. One is that the number of total trips is increasing more slowly than total population. This suggests that people are projected to be generally more efficient with the number of trips they take in 2035 than they are today. In addition, while daily auto trips and daily transit trips are both on the rise, the number of transit trips is projected to increase by 36.5% - far higher than the projected 6.1% increase in auto trips.

Source: “2010-2035 NYMTC Regional Transportation Plan: A Shared Vision for a Shared Future”

Figure 22: NYMTC Demographic Predictions for Long Island

In order to examine these trends in greater detail, the NYMTC trip data for the 2009 and 2035 was aggregated at the county and town level in order to examine the localized changes in VMT, average trip length, and mode share data. The results of this assessment are discussed in the following sections.
5.6.1 Vehicle Miles Traveled (VMT)

According to the NYMTC projections, VMT is expected to increase in both Nassau and Suffolk Counties by 2035. The examination of the model data at the town level suggests that this increase will occur relatively evenly across the island. This means that other measures such as average trip length and auto mode share can inform where strategies to reduce auto travel and encourage transit will have the greatest impact.

Table 7: 2009 Trip Data Sorted by Town

<table>
<thead>
<tr>
<th>Town</th>
<th>Auto</th>
<th>Transit</th>
<th>Total</th>
<th>Auto Mode Share</th>
<th>VMT</th>
<th>Avg Trip Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babylon</td>
<td>540,894</td>
<td>66,170</td>
<td>607,064</td>
<td>89%</td>
<td>3,009,495</td>
<td>7.2</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>1,186,838</td>
<td>57,912</td>
<td>1,244,770</td>
<td>95%</td>
<td>10,225,198</td>
<td>8.6</td>
</tr>
<tr>
<td>East Hampton</td>
<td>62,706</td>
<td>1,580</td>
<td>64,285</td>
<td>98%</td>
<td>517,133</td>
<td>8.2</td>
</tr>
<tr>
<td>Glen Cove</td>
<td>56,107</td>
<td>4,254</td>
<td>60,361</td>
<td>93%</td>
<td>524,974</td>
<td>9.4</td>
</tr>
<tr>
<td>Hempstead</td>
<td>1,652,411</td>
<td>339,260</td>
<td>1,991,671</td>
<td>83%</td>
<td>11,059,941</td>
<td>6.7</td>
</tr>
<tr>
<td>Huntington</td>
<td>661,090</td>
<td>43,570</td>
<td>704,669</td>
<td>94%</td>
<td>4,913,502</td>
<td>7.4</td>
</tr>
<tr>
<td>Islip</td>
<td>636,754</td>
<td>71,479</td>
<td>908,233</td>
<td>92%</td>
<td>6,693,086</td>
<td>8.0</td>
</tr>
<tr>
<td>Long Beach</td>
<td>45,597</td>
<td>13,844</td>
<td>59,441</td>
<td>77%</td>
<td>438,503</td>
<td>9.6</td>
</tr>
<tr>
<td>North Hempstead</td>
<td>559,374</td>
<td>95,830</td>
<td>655,204</td>
<td>85%</td>
<td>4,256,295</td>
<td>7.6</td>
</tr>
<tr>
<td>Oyster Bay</td>
<td>779,763</td>
<td>63,783</td>
<td>843,545</td>
<td>92%</td>
<td>6,078,247</td>
<td>7.8</td>
</tr>
<tr>
<td>Riverhead</td>
<td>98,078</td>
<td>2,615</td>
<td>100,693</td>
<td>97%</td>
<td>1,039,411</td>
<td>10.6</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>6,157</td>
<td>68</td>
<td>6,225</td>
<td>99%</td>
<td>60,391</td>
<td>9.8</td>
</tr>
<tr>
<td>Smithtown</td>
<td>334,472</td>
<td>17,546</td>
<td>352,018</td>
<td>95%</td>
<td>2,619,498</td>
<td>7.8</td>
</tr>
<tr>
<td>Southampton</td>
<td>175,144</td>
<td>4,094</td>
<td>179,238</td>
<td>98%</td>
<td>1,677,652</td>
<td>9.6</td>
</tr>
<tr>
<td>Southold</td>
<td>55,956</td>
<td>998</td>
<td>56,954</td>
<td>98%</td>
<td>544,760</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Table 8: 2035 Trip Data Sorted by Town

<table>
<thead>
<tr>
<th>Town</th>
<th>Auto</th>
<th>Transit</th>
<th>Total</th>
<th>Auto Mode Share</th>
<th>VMT</th>
<th>Avg Trip Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babylon</td>
<td>590,658</td>
<td>69,212</td>
<td>659,910</td>
<td>90%</td>
<td>4,264,982</td>
<td>7.2</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>1,465,379</td>
<td>67,993</td>
<td>1,533,371</td>
<td>96%</td>
<td>12,267,472</td>
<td>8.4</td>
</tr>
<tr>
<td>East Hampton</td>
<td>84,419</td>
<td>2,050</td>
<td>86,468</td>
<td>98%</td>
<td>700,010</td>
<td>8.3</td>
</tr>
<tr>
<td>Glen Cove</td>
<td>59,606</td>
<td>4,650</td>
<td>64,255</td>
<td>93%</td>
<td>538,599</td>
<td>9.0</td>
</tr>
<tr>
<td>Hempstead</td>
<td>1,671,375</td>
<td>335,001</td>
<td>2,006,376</td>
<td>83%</td>
<td>11,318,858</td>
<td>6.8</td>
</tr>
<tr>
<td>Huntington</td>
<td>706,439</td>
<td>44,361</td>
<td>750,800</td>
<td>94%</td>
<td>5,449,048</td>
<td>7.7</td>
</tr>
<tr>
<td>Islip</td>
<td>921,948</td>
<td>73,655</td>
<td>995,603</td>
<td>93%</td>
<td>7,426,058</td>
<td>8.1</td>
</tr>
<tr>
<td>Long Beach</td>
<td>48,281</td>
<td>14,223</td>
<td>62,504</td>
<td>77%</td>
<td>458,820</td>
<td>9.5</td>
</tr>
<tr>
<td>North Hempstead</td>
<td>581,672</td>
<td>102,656</td>
<td>684,327</td>
<td>85%</td>
<td>5,148,951</td>
<td>8.9</td>
</tr>
<tr>
<td>Oyster Bay</td>
<td>810,468</td>
<td>64,778</td>
<td>875,246</td>
<td>93%</td>
<td>6,636,537</td>
<td>8.2</td>
</tr>
<tr>
<td>Riverhead</td>
<td>136,234</td>
<td>3,704</td>
<td>139,937</td>
<td>97%</td>
<td>1,374,337</td>
<td>10.1</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>8,713</td>
<td>192</td>
<td>8,904</td>
<td>98%</td>
<td>81,724</td>
<td>9.4</td>
</tr>
<tr>
<td>Smithtown</td>
<td>380,609</td>
<td>19,866</td>
<td>400,475</td>
<td>95%</td>
<td>3,209,522</td>
<td>8.4</td>
</tr>
<tr>
<td>Southampton</td>
<td>225,799</td>
<td>5,571</td>
<td>231,370</td>
<td>98%</td>
<td>2,169,572</td>
<td>9.6</td>
</tr>
<tr>
<td>Southold</td>
<td>75,742</td>
<td>1,570</td>
<td>77,311</td>
<td>98%</td>
<td>700,288</td>
<td>9.2</td>
</tr>
</tbody>
</table>
5.6.2 Average Trip Length

When viewed at the town and TAZ level, the projected pattern for average trip lengths in 2035 is largely the same as in 2009. In both the existing and future scenarios, when people drive in Suffolk County they travel roughly one mile further on average than those in Nassau County. The average trip length in most areas remained relatively constant, with most towns experiencing only an increase or decrease of less than a half-mile per trip.

In general, zones in central and western Suffolk County, where transit service is relatively limited and development densities are lower, tended to exhibit the highest average trip length. Other clusters of high average trip lengths also occurred along both the north and south shores of Nassau County, which likely reflects the longer distances between these zones and the main east-west LIRR transit corridors. This suggests that improving north-south connections across the island, through more direct and frequent transit service and additional street connections, could help reduce overall VMT and the associated fuel costs and carbon emissions.

![Figure 23 - 2009 Average Trip Length by Origin TAZ](image1)

![Figure 24 - 2035 Average Trip Length by Origin TAZ](image2)

5.6.3 Auto Mode Share

The NYMTC projections suggest that auto mode shares in both Nassau and Suffolk County will remain relatively constant between 2009 and 2035, at 94% for Suffolk County and 86% for Nassau County. A breakdown of the model data at the town and zone level again suggests that the more detailed pattern is also expected to remain steady.

Overall, auto mode share patterns in the existing and future scenarios reflected a number of transportation infrastructure and demographic properties of Long Island. Areas with limited access to transit and long average trip lengths exhibited extremely high auto mode shares. These areas included most of Suffolk County and the north and south shores of Nassau County. The areas with the longest average trip lengths also tended to have the highest auto mode share, including Riverhead (97%), Shelter Island (99%), and...
Southold (98%). This suggests that an opportunity exists in these areas to reduce trip length through a combination of land use changes, increased LIRR service, and new transit options. In the case of these three towns, this could mean encouraging more mixed-use development to bring more commercial and retail services to the northeast area of Long Island.

![Figure 25 - 2009 Auto Mode Share by TAZ](image1)

![Figure 26 - 2035 Auto Mode Share by TAZ](image2)

One notable exception to the general pattern of auto mode share was the City of Long Beach, which had a relatively low auto mode share (77%) but a high average trip length (9.6 miles/trip). The longer average trip length may be attributable to the town’s relative isolation; all trips in and out must cross one of only three access bridges. However the reasons for the relatively low auto mode share are unclear. Further study would be necessary to determine if this value is due to conditions on the ground or exceptions in the data and calculations.

Another exception to the Island-wide mode share pattern was the relatively high auto mode share in the northern half of Nassau County. This area is relatively well served by transit, and closer to employment centers in New York City. This may reflect a reduced sensitivity to travel costs. In general, higher income travelers generally have lower sensitivities to differences between auto and transit travel time and cost, and therefore often produce higher auto mode shares even when transit options are present. Strategies that seize on the opportunity to promote realistic transportation choices will be most effective in reducing auto mode share.
6 Infrastructure Goals

6.1 Waste Goals

In order to improve the existing and future waste management in Long Island the following goals have been developed throughout the stakeholder process.

- **Reduce waste generation on Long Island.** The waste management in Long Island is not integrated. Each Town has a different waste strategy managed by various levels of government and private businesses. With additional waste streams arising, a unified waste strategy is necessary between each Town and the two counties. If waste management is fully integrated, recyclables and compost product markets become more economical, waste to energy plants could be shared when not at full capacity (instead of the waste going off-island).

- **Change behavior to manage waste generation at all levels** (production, distribution, and consumption). Behavioral changes through education, as well as other strategies will need to be considered to reduce the waste generation rates on Long Island.

- **Establish and implement cost effective methods for waste management.** Waste cost per household varies for each Town. A single waste strategy could evenly distribute these costs and provide a more viable market for compost and recyclable products.

- **Manage 100% of solid waste on Long Island.** Managing waste on Long Island will reduce the environmental and cost impacts from transporting waste off the Island, as well as, reduce the burden that Long Island has on those States receiving Long Island waste. In addition, management of waste will have recognizable economic benefits to Long Island.

6.2 Water and Wastewater Goals

In order to improve the existing and future water management in Long Island the following goals have been developed. These will be updated throughout the Long Island Sustainability Plan development process.

- **Conserve water.** Developing building codes requiring low flow fixtures and time and seasonal limits to automatic sprinklers will decrease water consumption levels.

- **Adapt water supply and waste water systems for higher density development.** As areas become more developed and dense, the risk of septic system contamination increases. Potable water and sewage infrastructure will need to be further developed to prevent septic system contamination, or if there is contamination, alternate distribution lines could potentially be used.

- **Preserve and protect aquifers.** Educating Long Islanders on the importance of Long Island’s sole source aquifer, a reduction in water consumption through codes and planning, use of low impact design practices, and potable water and wastewater pipeline distribution may reduce the impact on Long Island aquifers.

6.3 Energy Goals

- **Reduce energy demand.**

LIPA has the following initiatives to reduce energy consumption and supply a renewable energy source to Long Island:

- Power supply CO₂ footprint reductions – reduce CO₂ emission to a level 10% below the 2005 emissions, levels by 2020 (20% by 2030)
- Efficiency Long Island Plan – Reduce electrical peak demand and consumption
LIPA is also aligning with New York State’s “45 by 15” goal, which includes:
- 15 X 15 goal - 15% energy reduction by 2015
- Renewable portfolio standard program goal – 30% renewable portfolio by 2015

Energy reduction can be achieved through building codes requiring prescriptive energy efficiency measures and standards, upgrades to insulation and boiler systems in residential households, and a smarter electricity distribution grid. LIPA and National Grid may also work closer with all the municipalities across Long Island to reduce electricity and heating demands.

- **Achieve a safe, sustainable and secure energy supply.**

Long Island is dependent on energy sources off-island. This includes the gas from the Iroquois and Transco pipeline, and electricity transmission lines coming from New England or New Jersey. An increase in energy consumption will require additional off-island fuel resources for electricity generation and heating. Any disturbance to those fuel sources would affect Long Island’s energy security. In addition, if LIPA’s goal is to have a 30% renewable portfolio by 2015, an increase in energy consumed will require more renewable technologies, higher fuel costs and transmission and distribution upgrades, increasing the cost to LIPA and national grid, which potentially would be felt by the consumer.

### 6.4 Climate Change Goals

- **Reduce greenhouse gas emissions.**

Reducing energy demand and increasing renewable energy supply, reducing waste transport and the amount of waste incinerated, reducing water consumption in relation to energy used for distribution and treatment, use of public transportation, increase of freight train travel (as opposed to trucking materials) and reducing Long Islanders dependence on automobiles are methods to mitigate climate change.

- **Increase resilience to climate change.**

Protecting Long Island’s water source, designing buildings and infrastructure by thinking about climate change and developing an evacuation plan are climate change adaptation methods.

### 6.5 Transportation Goals

The assessment of existing conditions and projected future conditions can offer insight into where the problem areas are and how the region can work towards its goal of sustainable mobility and better access to the region. Some transportation goals could include the following:

- **Plan for Vibrant, Walkable Downtowns.**

Concentrating development and cultural facilities in downtown areas and enhancing pedestrian and bicycle facilities serving those areas will create vibrant centers of activity where people can come to shop, dine, stroll, and meet other members of their community. By putting new development in walking distance of stores, cultural facilities, restaurants, shops and schools, walking, bicycle and transit are more attractive and convenient while these areas become more vibrant and sustainable. Improving options for walking, cycling and transit minimizes and reduces carbon emissions from auto-based transport, which also improves air quality and public health. Enhancements to the pedestrian (and bicycling) realm can promote social equity when improved streetscapes and quality community design remove barriers that bisect or fragment local neighborhoods. When trips are made by walking, cycling or transit instead of automobiles, carbon emissions from transportation are reduced.
• **Develop in LIRR Station Areas.**

Long Island’s rail stations provide the opportunity to create a series of transit-oriented developments around the Island. With the station at its center, the focus of the rail can still be to carry residents into and out of New York City while also serving as an intra Long Island transit corridor with LIRR connecting these centers together. In response to new plans and additional transit service, as residential, cultural and business uses fill-in the gaps around the station new services for the residents will emerge, as well as the potential for a local high-density employment center. These conditions would allow people to abandon their cars in favor of walking, cycling, or taking other local transit modes to/from the station for commuting purposes.

• **Increase the Viability of Transit.**

Increasing the ease of access, efficiency of service, and number of destinations for transit will provide residents of Long Island with the choices they need to make efficient and sustainable transportation decisions. Through Eastside Access, LIRR third track, Bus Rapid Transit Systems, and better bicycle and pedestrian facilities, transit can play a meaningful role in the mobility for all Long Island residents. Improving the viability of transit and providing realistic travel options also promotes social equity by facilitating efficient and affordable travel choices. A shift towards transit can enhance economic prosperity by reducing congestion, improving the efficiency in the movement of people and goods, and increasing the affordability of transportation for all users.
• **Improve Regional Connectivity.**

While Long Island enjoys a mature road and rail system, the infrastructure is aging and in need of updating. This includes making transit capacity and infrastructure improvements, many of which are underway today. Investing in the health of the region’s roadways is vital to Long Island’s transportation future. While Long Island should work actively to promote new and improved transit options, automobile travel is not going away and vehicular travel must continue to be accommodated in the future. Without building new facilities, the capacity of the existing roadway network can be improved through maintenance and technological improvements.

• **Avoid the Congestion of New York City.**

As long as all roads and transit systems leading to Long Island pass through the region’s congested core, it will be difficult to sustain a healthy climate on Long Island for businesses and growth. While New York City provides enormous opportunities for Long Island residents, it also acts as a barrier between Long Island and the rest of the country. Providing more connections to get on and off Long Island will have multiple benefits for residents and businesses.

• **Improve North-South and Other Intra-Island Transportation Links.**

The existing road and rail network is set up in a predominantly east-west direction, reflecting a historical need to connect residents to New York City. Internal trips, especially along north-south corridors, are congested and difficult on many of Long Island’s roads. Much of this congestion is due to inadequate capacity on roadways and a lack of viable transit options along these corridors. Creating and investing in new transit options along these north-south corridors will provide access to new job centers, connect Long Island’s existing transit corridors, and serve as an essential improvement to transportation connectivity in Long Island.
• **Reduce Auto Dependency.**

As the data sections of this report showed, despite having the country’s busiest commuter rail system, Long Island is still dominated by the automobile. The future of Long Island depends on investment in its existing transit network and a thoughtful expansion of the transit system. Projects to improve existing transit capacity, the construction of new transit links and corridors, and the development of transit-oriented development are important to reducing Long Island’s auto dependency. Key metrics for improvement are reductions in vehicle miles traveled, trip length, and auto modal share.

• **Accommodate goods movement.**

Long Island is isolated from the rest of the Tri-State region given the only paths on and off the island are via the most densely populated city in the United States: New York City. With one of the most productive agricultural economies of the state and a healthy local economy, finding new ways to connect Long Island to the Tri-State area and beyond will have economic and mobility benefits for the region. This can be accommodated through a deep water port, expanding rail transport, and finding additional roadway links to Connecticut and New Jersey. Developing ways to resolve operational, physical and geometric freight bottlenecks, identifying locations for new intermodal facilities, and exploring public-private partnerships between freight haulers and track owners could all lead to fewer trucks on the road, less traffic congestion, improved safety for drivers, and reduced greenhouse gas emissions from transportation sources. In addition, connecting Long Island to the rest of the nation via freight infrastructure could help Long Island commercial and industrial businesses position themselves competitively, create new jobs, and inject much-needed financial support into the local economy.
7 Conclusion

The infrastructure challenges Long Island faces in the next twenty-five years are varied and complex. A decentralized system of waste collection faces high waste generation rates and inadequate capacity to dispose of it. The Island’s sole source of potable water is being subjected to rising water usage rates. Much of the Island’s energy is generated elsewhere while renewable sources make up less than 5% of the total. The region is a large contributor of CO₂, its coastlines remain especially vulnerable to the potential effects of climate change and transit choices are limited while congested roadways lead to lost time and inefficiency.

Solutions to these issues are within reach. The inter-related nature of the challenges identified in this report mean the opportunity exists to address them through a coordinated, multifaceted approach. Improvements in one realm will be most effective when there are supporting and complementary improvements in another realm. Energy strategies that promote efficiency will support efforts to improve affordability for residents and businesses. Enhancing transportation options and connections complements initiatives aimed at attracting jobs and population growth. Land use changes that support intensification of development also support housing affordability, improved access to jobs and initiatives that enhance the efficient transport of goods.

These solutions will require cooperation not only among the residents, governments, and leaders of Long Island, but also with agencies and stakeholders in New York City, New York State, and partners in the municipal services industries. Ideas such as moving to low-carbon energy sources, ensuring the security of water supplies, improving regional connectivity, increasing the viability of transit, and responding to the effects of climate change all will require investment and approval from a number of area government entities. The leaders of Long Island must work with other local leaders to address the infrastructural challenges Long Island faces, as a healthy and productive Long Island will have positive results for the region and the nation in the long term.

Long Island is a unique place in America, and has a history of serving as an example of progress for the rest of the nation. Only a coordinated approach to improving and maintaining Long Island’s infrastructure, services and amenities will ensure that this tradition of leadership continues. Addressing the needs facing the region’s infrastructure will support the wider goals for Long Island in 2035 – enhanced economic prosperity, expanded social equity and a healthy environment.
Long Island Regional Planning Council

Long Island 2035 Regional Comprehensive Sustainability Plan

Technical Report- Land Use
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.
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<td>7.2</td>
<td>General Land Use Management Policies</td>
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</table>
1 Introduction – Land Use

1.1 Introduction

Arup was requested by the Long Island Regional Planning Council ("LIRPC") to develop an analysis of existing and projected 2035 land-use patterns on Long Island. This analysis seeks to construct a model of possible changes in the built environment of Long Island over the next 25 years by building upon town- and county-level demographic and employment growth projections prepared by the New York Metropolitan Transit Council ("NYMTC") and by HR&A Advisors Inc. ("HR&A") and on studies of current land-use patterns completed by the Regional Plan Association ("RPA"). This model provides guidance on how Long Island will look like in 2035 from the perspective of land-use, development density, and development type.

For purposes of this analysis, development is defined as parcels that are built up in one of several different land-use programs: commercial, industrial, institutional, multi- and single-family residential, open space (of all types), infrastructure (principally utilities, major roads, airports, and mass transit systems), and agriculture. Changes are projected only with respect to commercial, industrial, institutional, and residential land-uses, with the other uses remaining constant. Local roads are excluded from the calculation. Additionally, it is assumed that future development will accompany future net population and employment growth and will occur on existing residential, commercial, industrial and institutional parcels either currently built upon or identified by RPA as currently vacant and developable.

Our approach focuses on changes to the built environment of Long Island. For the sake of conservatism, we assume that land presently in active agriculture as well as existing protected open spaces are not available for development in the future and remain protected in the current functions. Additional land that remains undeveloped past 2035 may also be considered for conservation measures or as additions to open space in the future.

Our baseline and projections for 2035 will serve as the basis for the development of prospective sustainability strategies in a subsequent stage of work on the Long Island Sustainability Plan. These basic land-use assumptions provide inputs required for the other Long Island Sustainability Plan thematic areas in areas such as energy, water, waste, land-use, and transportation. None of the scenarios shown reflect strategies that will be developed in subsequent stages of the Long Island Sustainability Plan ("LISP") development process.

1.2 Scenarios

Arup developed an analytical model which uses ACS data and RPA’s parcel database in conjunction with 2035 residential and employment and demographic projections from NYMTC and HR&A, and a set of quantitative algorithms developed by the Arup team to estimate and, for 2035, project land-use patterns by Long Island town.

The scenarios reference the towns and two counties of Long Island. An index map is provided below for reference:
Figure 1:– Map of Long Island

As part of this analysis, three scenarios were developed and modeled:

- **2008 Baseline** – A baseline 2008 characterization of land-use and development patterns for the towns of Nassau and Suffolk County was developed, with calculations of gross floor area by built program type based on residential population, household and housing unit information from the US Census Bureau’s 2008 American Community Survey, RPA’s parcel-level land use database, and employment figures presented by HR&A.

- **2035 Historical Pattern Continuation** - 2035 land-use and development patterns were projected for Long Island towns for a scenario wherein the development typologies and demographic characteristics prevalent historically continue into the future. This approach focuses on the development of single family homes and other development types in proportions consistent with historical development patterns. Population growth projections by county are based on modified NYMTC projections for the towns. Changes in developed land-use are based on the 2008 baseline characterization. Effectively, the 2035 Historical Pattern Continuation (“Historical”) scenario represents a continuation of the average of historical development patterns as they are still reflected in the current built environment and in land-use regulation.

- **2035 Business-as-Usual** - 2035 land-use and development patterns were projected for Long Island towns for a development scenario in which the development typologies and demographic characteristics are more consistent with current zoning and the expressed future land-use intentions of the towns, current, as opposed to historical, trends in demand for real estate product types, and where demographic characteristics reflect emerging instead of purely historical patterns. Top-line population growth projections for the two counties are left unchanged relative to the Historical Case, again using modified NYMTC projections, and changes in developed land-use are based on the 2008 baseline characterization. This scenario assumes smaller household sizes and thus more total households.

The 2035 Business-as-Usual Case represents our best guess as to what Long Island’s future will look like from a land-use perspective based on current realities, all other factors being equal and without significant changes in both markets and current policies. The scenarios do not reflect strategies that the Long Island Sustainable Plan may suggest or any policy changes which may result from those strategies. The projection of outcomes with such strategies taken into account will occur in a subsequent stage of the LISP process.

---

1 Modifications refer to HR&A adjustments to NYMTC projections.
1.3 Summary of Findings

Our analytical model produced three scenarios – a baseline of existing conditions for 2008, and the two future scenarios described above. For the purpose of these figures, currently protected open space is not subject to future development and is not counted in the "developed" figures.

- Nassau –
  - Approximately 141,900 acres, of a total dry-land area of 183,500 acres, were developed as of 2008.
  - An additional 7,600 acres were considered to be available for future development by RPA.
  - Existing development consisted of approximately 365,300 single family residential units at an average density of 4.6 units per net residential acre, and 93,000 multi-family residential units at an average density of 15.1 units per net residential acre.
  - 495 million square feet in non-residential building space, by our model.

- Suffolk –
  - Approximately 456,000 acres, of a total dry-land area of 584,000 acres, were developed in Suffolk County, as of 2008.
  - An additional 43,500 acres were considered to be available for future development by RPA.
  - Existing development consisted of approximately 463,200 single family residential units at an average density of 2.3 units per net residential acre, and 81,000 multi-family residential units at an average density of 10 units per net residential acre.
    - 564 million square feet in non-residential building space, by our model.

Our findings for 2035, which are summarized in the following table, present two alternative views of Long Island’s possible future development. Other development patterns are possible, and any strategies developed as part of the LISP process may change these outcomes significantly.
Table 1: Changes in Net Land Area Developed, 2009 to 2035
Additional Acres Developed, 2009-2035
Arup Model Outcomes for Residential, Commercial, Industrial, Institutional Program

<table>
<thead>
<tr>
<th></th>
<th>Historical</th>
<th>Business-as-Usual</th>
</tr>
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<tbody>
<tr>
<td>Residential(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>18,503</td>
<td>16,059</td>
</tr>
<tr>
<td>Nassau</td>
<td>6,840</td>
<td>4,486</td>
</tr>
<tr>
<td>Total</td>
<td>25,343</td>
<td>20,545</td>
</tr>
<tr>
<td>Non-Residential(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>1,522</td>
<td>(694)</td>
</tr>
<tr>
<td>Nassau</td>
<td>(370)</td>
<td>(1,950)</td>
</tr>
<tr>
<td>Total</td>
<td>1,152</td>
<td>(2,644)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>20,025</td>
<td>15,365</td>
</tr>
<tr>
<td>Nassau</td>
<td>6,470</td>
<td>2,536</td>
</tr>
<tr>
<td>Grand Total</td>
<td>26,495</td>
<td>17,901</td>
</tr>
</tbody>
</table>

(1) net incremental acres developed, 2009 to 2035.
(2) net incremental acres developed, negative or show returns to undeveloped status due to job loss.

The 2035 Historical case would result in the virtual build-out of Nassau and Western Suffolk, as well as a considerable amount of development of estate homes in new areas of Eastern Suffolk.

The 2035 Business-as-Usual Case would result in a higher proportion of multi-family home and higher density commercial development in centers such as Hempstead, Babylon and Islip, and somewhat of a lower built footprint generally in Nassau and Western Suffolk.

1.3.1 2035 Historical Pattern Continuation – Detailed Findings

- Nassau – Virtually all developable but currently undeveloped land is projected to be developed by 2035.
- The County will be 99% built out (up from 94% in 2008).
- Projected cumulative single family residential unit development will consist of approximately 406,700 units at a virtually unchanged average density of 4.7 units per net residential acre.
- Projected cumulative multi-family residential unit development will consist of approximately 100,600 units at an average density of 15.8 units per net residential acre.
- Projected cumulative non-residential development will consist of approximately 510 million square feet in building space, representing the employment loss anticipated in the HR&A analysis.
- Only 1,025 acres in land will remain undeveloped, much of which will be formerly industrial parcels in de-industrializing areas such as older industrial parks.
- Suffolk – Western Suffolk will be largely built-out, with some additional capacity to absorb future development in Brookhaven. Eastern Suffolk will lose some of its rural character.
- Suffolk will be 92% built out (up from 86% in 2008), assuming no net loss of active agricultural land.
- Projected cumulative single family unit development will consist of approximately 555,500 units at a slightly higher average density of 2.5 units per net residential acre.
Projected cumulative multi-family unit development will consist of approximately 90,100 units at a higher average density of 11.6 units per net residential acre.

Projected cumulative non-residential development will consist of approximately 673 million square feet in non-residential building space, representing sizable future predicted employment growth, particularly among retail and office workers.

Some 23,600 acres in land will remain undeveloped by 2035, mostly in Eastern Suffolk.

1.3.2 2035 Business-as-Usual – Detailed Findings

- Nassau – The proportion of Nassau that is developed will only increase slightly from 2008 levels,
  - By 2035, the County will be 96% built out, representing increases in resident population at higher average densities than in the 2035 Historical Case, with a particular focus on multi-family residential and dense commercial development in the Hempstead area.
  - Projected cumulative single family unit development will consist of approximately 386,500 units at an average density of 4.6 units per net residential acre.
  - Projected cumulative multi-family unit development will consist of approximately 129,700 units at a significantly higher average density of 18.7 units per net residential acre.
  - Project cumulative non-residential development will consist of 510 million square feet in non-residential building space, but clustered at somewhat higher densities than in the Historical Case.
  - Some 5,000 acres in land will remain undeveloped, allowing for conservation measures and possible expansion of open space strategies, as well as the prospect of additional urban development beyond the LISP time horizon.

- Suffolk – Suffolk will see a greater proportion of its total developed by 2035.
  - The proportion of Suffolk County built out will increase from 86% to 91%.
  - Projected cumulative single family unit development will consist of approximately 535,500 units at an average density of 2.4 units per net residential acre.
  - Projected cumulative multi-family unit development will consist of approximately, and 131,700 multi-family residential units at a higher average density of 14.3 units per net residential acre, and 627 million square feet in non-residential building space. Islip and Babylon will be centers for multi-family residential development, whilst pockets of relatively intense commercial development will occur in those two towns, Huntington and Brookhaven.
  - Some 28,000 acres in land will remain undeveloped, mostly in Eastern Suffolk and Brookhaven, allowing for conservation measures and possible expansion of open space strategies, as well as the prospect of additional development beyond the LISP time horizon.
2 Scope of the Analysis & Use of Demographic Assumptions – Land Use

2.1 Study Purpose

The purpose of the study is to provide general parameters, based on current trends, to guide discussions about sustainable planning strategies for Long Island’s future. These parameters represent only two of countless possible outcomes, and are heavily predicated on assumptions, based upon current and historical property market conditions, of existing land-use regulation and land-use plans, of expectations of future economic and demographic growth and of future consumer preferences with respect to living environments. We have not undertaken a detailed analysis of existing zoning, with the caveat that projections are generally in line with current zoning practices and land-use policies.

2.2 Basis for Projections

Our scope required us to apply county- and town-level population projections provided by NYMTC to develop a quantitative model of likely future land-use patterns. We were advised by NYMTC and HR&A to use the NYMTC county-level population projections unchanged as a basis for our analyses of land-use and resource utilization, irrespective of the scenario.

Using these top-line projections, we developed a parcel-level land-use analysis based on available land for development (as identified by RPA), past and likely future development typologies, trends in property markets, current land-use regulation, vacancy rates, and NYMTC long-term demographic projections. Since the county-level total population projections were identical in the two scenarios, the number of households was allowed to vary as a function of the different development patterns modeled in the two scenarios.

Employment projections are taken from town-level jobs forecasts prepared by HR&A based on NYMTC employment growth forecasts. The model attaches per employee space requirements by land-use type and land-use efficiencies and vacancy rates to these forecasts – all based on prevailing market practice, to derive the amount of gross floor area required by the projected number of workers by town.

Existing parcel boundaries were based on RPA’s land-use database, with some re-classification of use types required to consistently characterize land-uses across the two counties. Future development on existing parcels was deemed to be similar in nature to existing development patterns, except in the case of non-residential space (commercial, industrial and institutional) where projected job losses result in the release of currently occupied areas for future development. Otherwise, net future development was deemed to occur on land classified by RPA as presently vacant and available for future development.

The land-use efficiency of new development (the ratio between the area of development parcels and of those parcels plus their local streets), as well as land presently classified as infrastructure, open space and agriculture are assumed to be unchanged between 2009 and 2035.
2.3 Existing Land-use Characterization

The following land-use categories, derived from the RPA parcel data-base, were used as the basis for our analysis and reflect current zoning and land-use regulation:

- **Single-Family Residential**

  This category covers subdivided parcels currently zoned for detached and attached single-family home products, whether or not those parcels are currently built upon. In all cases, each one single family residential unit was assumed to occupy a single parcel. Unit sizes and types vary from town-to-town and area-to-area. Single-family unit types exhibit different land-use characteristics and may be broadly classified into urban, suburban, exurban and estate-home density types. Housing units located on land administered by the Bureau of Indian Affairs are excluded from the study.

- **Multi-family Residential**

  This category covers subdivided parcels currently zoned for apartments, condominiums, and townhomes, along with most forms of cluster development, where or not those parcels are currently built upon. At least two units are assumed to be present on a single parcel. Unit sizes and types vary somewhat from town-to-town; however, as a practical matter, a limited number of multi-family typologies actually exist on Long Island. Group quarters, such as hospices, prisons, barracks, and dormitories, are not included in the study. Similarly, housing units located on land administered by the Bureau of Indian Affairs are excluded from the study.

- **Commercial**

  This category covers subdivided parcels currently zoned for retail, commercial office, and commercial flex/research and development space, irrespective of typology and regardless of whether or not they are currently built upon. Broadly speaking, commercial space is located within malls of various types, in traditional downtowns and business districts, along arterial roadways (“commercial strips”), and in industrial, and technology parks. A reliable breakout of office and retail space was not possible given data constraints, although such a breakout would have been useful.
- **Industrial**
  Industrial land-uses cover subdivided parcels currently zone for manufacturing, warehousing and logistics, and automotive servicing, and storage, whether or not those parcels are currently built upon. Industrial land uses tend to be concentrated on Long Island in industrial parks and along logistics corridors.

- **Institutional**
  Institutional land-use includes parcels currently zoned for government offices and facilities, schools, colleges and other academic campuses, churches, hospitals and healthcare facilities, research institutes including the Brookhaven National Laboratories, and community organizations, regardless of whether or not those parcels are built upon.

- **Agricultural**
  Land classified as agricultural is left unchanged for the projection period. For modeling purposes, parcels currently classified as agricultural are assumed to be protected from future development.

- **Open Space**
  Land classified as open space is left un-changed for the projection period. Open Space may include structured and unstructured parkland, recreational land (including golf courses), as well as designated conservation areas. For modeling purposes, parcels currently classified as open space are assumed to be protected from future development.

- **Infrastructure**
  Infrastructure includes land set aside for utilities (waste, water, transportation including airports and air strips, public logistics, and energy, including the Shoreham nuclear power plant site), for major streets, and for major road and rail rights-of-way. Local streets are generally not included in the infrastructure category and are instead captured in the difference between total land area and the sum of all of the categories above. Land area associated with local streets is not assumed to be available for future development except insofar as those local streets is required to support new future development on currently undeveloped land.
• **Undeveloped Land/Available for Development**

  Undeveloped parcels are included in this category, based on RPA’s classification of parcels which are presently not subdivided but are known to be available for future development. Future uses for undeveloped parcels were evaluated with respect to currently expressed land-use and zoning intentions, although generally, these parcels are unzoned or differentially zoned. Undeveloped land does not include infrastructure or streets, except for local access required to support future new development.

2.4 Residential Space Methodology

2.4.1 **Baseline 2008**

The following methodology was used to create the baseline year model:

- Aggregate total acres were calculated for each of the re-classified land-use types above, using the RPA parcel database.

- Using town-level data from the US Census Bureau’s 2008 American Community Survey (“ACS”), current vacancy rates, and housing unit densities for single- and multi-family residential units were calculated.

- Using building footprint information available in the GIS (“geographic information system”) and in AutoCAD as well as three dimensional photographic information from the Google Earth Street View database, representative lot coverage ratios as well as building heights were calculated for typical single- and multi-family units. Approximately 45 case studies, at the block scale, were tested, representing a wide cross-section of building typologies in Long Island.

- Gross Floor Area calculations were derived using the foregoing assumptions, and Gross Floor Area per unit was derived and cross-checked against available real estate market information on residential product types. Market reports prepared by major residential brokerages were used, along with calibration spot-checks of available inventory from property sales databases, to validate the calculated per unit floor areas. In addition, refinements were made, as required, to the lot coverage ratios and building heights.

- Using the foregoing calculations as inputs, total household population and household count by town was derived and compared with the actual 2008 ACS population estimates. If material discrepancies (in excess of 1%) were found to exist for any given town, the foregoing assumptions were re-examined and adjusted until the discrepancies were eliminated, assuring a high degree of data integrity.

- In general, this methodology accurately matched parcel counts and population and household forecasts, with observed material discrepancies only for single family homes in some eastern Long Island resort and vacation areas with characteristically high amounts of seasonal variation in housing tenure. These areas – East Hampton, Southampton, Shelter Island, Southold, and, to a lesser extent, Riverhead – required adjustments to vacancy rates to balance the inputs with the ACS data for a total of approximately 12% of the households in Suffolk County.

2.4.2 **Projection 2035**

Increases in population by county and by town, using the NYMTC population forecasts as vetted by HR&A, were used to determine the targeted total increase in population from 2009 to 2035. Growth by town of this population was distributed by three housing types described in the table below.
Population declines forecast by NYMTC were not allocated by unit type projection and the existing proportion of unit types was used instead.

It should be noted that in some cases the NYMTC/HR&A forecasted demographic changes resulted in more population in a given town than would be supported by the available land, at any reasonable density. Such excess population growth was redistributed to surrounded towns using the methodology described below.

Table 2: New Residential Development Type Allocation, 2009 to 2035

<table>
<thead>
<tr>
<th>Land Constrained/Urbanizing Towns (Hempstead, Long Beach, Babylon, Islip)</th>
<th>Suburban Areas/Less Land Constrained</th>
<th>Resort/Rural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nassau</td>
<td>90% single/10% multi</td>
<td>90% single/10% multi</td>
</tr>
<tr>
<td>Suffolk</td>
<td>90% single/10% multi</td>
<td>90% single/10% multi</td>
</tr>
<tr>
<td>Business-as-Usual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nassau</td>
<td>35% single/65% multi</td>
<td>80% single/20% multi</td>
</tr>
<tr>
<td>Suffolk</td>
<td>35% single/65% multi</td>
<td>85% single/15% multi</td>
</tr>
</tbody>
</table>

Source: Arup research.

- Using Census data, HR&A age-distribution calculations, and projected demographic multipliers derived from New York-area calculations by the Rutgers University Center for Urban Policy Research and presented in their database, 2035 household sizes were calculated for each town (where possible) by unit type (as per distribution above). The increase in households was then calculated on the basis of these household sizes.

- A constant 4% vacancy rate was assumed for all residential types and towns, except for the Suffolk seasonal resorts (see 2.4.1 above).

- The following assumptions were used for average size (in square feet, gross floor area) of new units to be constructed between 2008 and 2035, based on the case studies and discussions with local real estate brokers.

Table 3: New Residential Development Unit Sizes

<table>
<thead>
<tr>
<th>Land Constrained/Urbanizing Towns (Hempstead, Long Beach, Babylon, Islip)</th>
<th>Suburban Areas/Less Land Constrained</th>
<th>Resort/Estate Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>2,800 sq ft</td>
<td>3,200 sq ft, 4,100 sq ft for high income</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>1,250 to 1,450 sq ft</td>
<td>1,450 sq ft</td>
</tr>
</tbody>
</table>

Source: Arup research.

- Using the foregoing assumptions, total gross floor area, total vacant and occupied floor area, and the number of housing units constructed were calculated.
The average height in floors (gross floor area divided by base floor area) and the average percentage lot coverage was then estimated using the following assumptions.

### Table 4: New Residential Development Typologies

<table>
<thead>
<tr>
<th>Land Constrained/Urbanizing Towns (Hempstead, Long Beach, Babylon, Islip)</th>
<th>Suburban Areas/Less Land Constrained</th>
<th>Resort/Estate Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single Family</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors/Base Ratio</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Lot Coverage</td>
<td>30% to 35%</td>
<td>25% to 30%</td>
</tr>
<tr>
<td><strong>Multi-Family</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors/Base Ratio</td>
<td>4.0</td>
<td>2.0 to 4.0</td>
</tr>
<tr>
<td>Lot Coverage</td>
<td>35% to 40%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Source: Arup research.

It is important to note that these forward-looking building size ratios will differ substantially from calculated ratios for the 2009 baseline period. 2009 figures reflect an averaging of all historical development, and, for most towns, generally implies a significantly lower parcel coverage ratio (for example, for single family homes, typically 20% to 30% for urbanizing towns, 15% to 20% for suburban areas, and 10% to 13% for estate and outlying areas). Conversely, historical unit sizes tend be smaller. Such low coverage/small floor area products are, generally speaking, no longer being constructed, with the present and most likely future mode of development emphasizing smaller lots with higher coverage and larger homes.

A provisional total of incremental land developed in acres was then calculated for each town and tested against the amount of available land. Where the indicated total land area required to support projected population growth using the assumptions above exceeded the amount of developable area, development was re-allocated to similar towns within the same county, proportionately to 2008 population. The lower limit for the amount of incremental development thus allocated was based on 2008 baseline population and the upper limit was based on the total amount of available land. Allocations may occur between any Nassau towns; however, in Suffolk, allocations are allowed only between the towns in the western portion of the county (Babylon and Islip to Smithtown, Huntington and Brookhaven, with projected incremental development in the rural and resort communities in Eastern Suffolk fixed to their NYMTC growth rates.

### 2.5 Non-Residential Space Methodology

#### 2.5.1 Baseline 2008

The following methodology was used to create the baseline year model:

- Existing developed land use in acres for each land-use category was calculated from the RPA parcel database and aggregated to the town level.
Average vacancy rates, floor-to-base ratios, and lot coverage ratios were determined for each town.

On the basis of the foregoing research, gross floor areas, occupied floor areas and vacant floor area was calculated.

Using employment space multipliers provided by the State of New York and the Center for Urban Policy Research’s RDM Multiplier database, gross floor area per worker was calculated for each land-use type, to arrive at a calculated number of jobs.

The calculated number of jobs was then back-checked with NYMTC employment figures, as reclassified by HR&A, for each of the three categories. Where more than 4% discrepancy existed, floor-to-base ratios and lot coverage ratios were adjusted accordingly through a serial re-calibration process.

### 2.5.2 Projection 2035

HR&A’s restatement of NYMTC’s 2035 employment calculations by category were used to determine the net change in employment for each land-use type,

Based on market research and the baseline year calibration process, the following floor plate per employee assumptions were used: 375 sq feet per commercial worker (reflecting 250 sq feet per office worker and 500 sq feet per retail worker), 700 sq feet per industrial worker, and 500 sq feet per institutional worker.

Flat vacancy rates of 4.0% for institutional and industrial and 8.5% for commercial/retail was assumed, based on historical performance in comparable markets.

Gross floor area, occupied floor area and vacant floor area was calculated using the foregoing assumptions.

The following assumptions were used for floor-to-base ratios and lot coverage was used.

### Table 5: New Non-Residential Development Typologies

<table>
<thead>
<tr>
<th></th>
<th>Institutional</th>
<th>Industrial</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Historical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors/Base Ratio</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Lot Coverage</td>
<td>20%</td>
<td>30%</td>
<td>25%, 50% for Hempstead</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Business as Usual</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Floors/Base Ratio</td>
<td>2.0</td>
<td>2.0</td>
<td>4.0 to 4.5 for Hempstead, Babylon, Islip, 3.0 for town centers, 1.0 to 2.0 elsewhere</td>
</tr>
<tr>
<td>Lot Coverage</td>
<td>20%</td>
<td>30%</td>
<td>35%, 50% for Hempstead</td>
</tr>
</tbody>
</table>

Source: Arup research.

A provisional incremental land use projection was then calculated for each town by category and tested against the amount of available land (after residential development). Where total
incremental (new) development, using the NYMTC projections, exceeded the actual amount of
developable land area, development was re-allocated to similar towns within the same county
proportionate to baseline 2008 population, with a lower limit based set at the 2008 baseline
population and an upper limit based of the amount of available land.
3 Baseline 2008 Model – Land Use

The baseline model characterizes existing conditions and was used, with the methodology described above, to enable calibration of the 2035 projections.

3.1 New Development Land Area

The principle output of the Baseline model is the land area required to support projected population growth.

Nassau and Suffolk counties exhibit significantly different developed land use patterns, with Suffolk characterized at once by a substantially higher proportion of single family detached homes and substantially larger stocks of commercial and industrial development. Institutional and multi-unit residential land use is comparable for the two counties.

3.1.1 Nassau County, Acres & Percentage

Nassau County is rapidly approaching build-out, with a high potential for densification in targeted locations, such as the existing downtown areas of towns like Hempstead.

*Graph 1 – Baseline 2008 Land Use Distribution in Acres and % of Total Developed Land-Use, Nassau County*

According to the RPA land-use database, 94% of Nassau County’s land area is built out, based on the total acreage of developed parcels across all land-use types including agriculture and open space. Glen Cove is the least developed area (84%) and Long Beach the most (100%). Residential and non-residential development (excluding agriculture, open space, and infrastructure) totals approximately 128,750 acres. A total of approximately 7,600 acres is still developable, with the largest portfolios of undeveloped land in Hempstead (approximately 2,000 acres) and Oyster Bay (approximately 3,500 acres).

3.1.2 Suffolk County, Acres & Percentage

Suffolk County still retains substantial reserves of undeveloped and developable land – approximately 43,500 acres according to the RPA database; however, much of this remaining reserve is in the largely rural eastern portion of the county. Many of the western Suffolk Towns are actually no less land-constrained than their Nassau counterparts, with Brookhaven being the key exception.
Approximately 86% of Suffolk County's total land area is built out, with Babylon the most developed (97%) and Southampton the least (73%). All towns in western Suffolk are approaching build-out except for Brookhaven, which is only 86% developed (Huntington is 95%, Islip is 96%, and Smithtown is 94%). Residential and non-residential development totals approximately 269,250 acres.

Graph 2 – Baseline 2008 Land Use Distribution in Acres and by % of Total Developed Land-Use, Suffolk County

Of the western Suffolk towns, Brookhaven has, by far, the largest reserve of undeveloped land, with over 12,900 acres potentially developable. Huntington also has a substantial reserve of undeveloped land (7,100 acres). Babylon and Islip, by contrast, are effectively built-out relatively to their large populations, with, respectively, 550 and 1,500 acres still developable.
3.1.3 Summary
The following Graph provides a summary of total land developed in acres, by town.

Graph 3 – 2008 Baseline Total Developed Land-Use by Town, acres

3.2 Density
3.2.1 Nassau County Residential
Single family home development at typically North American suburban densities has characterized development in Nassau; however, given land constraints, this emphasis has already started to change. According to our findings from the RPA parcel database, using up-to-date data from the ACS as a baseline, the average composite housing density in Nassau County is 5.3 housing units per net residential acre.

- Oyster Bay has the lowest effective density (3.0 units per net residential acre).
- Hempstead – an area targeted for significant future densification - has relatively high density, at an average of 7.9 units per net residential acre.
- Long Beach is already a high density community, with an average housing unit per net residential acre count of 25.5 – comparable to many neighborhoods in neighboring Queens, New York.

Density by typology reflects a similar pattern, also according to our comparisons of RPA data with Census baselines.
• The average single family home density for Nassau is a typically suburban 4.7 homes per net residential acre, ranging from low average of 2.9 units per net residential acre in Oyster Bay and (apart from Long Beach) a high of 6.9 units per net residential acre in Hempstead.

• Attached single family products predominate only in Long Beach, which has an average single family home density of 15.5 units per net residential acre.

• Multi-family housing in Nassau averages 15.1 units per net residential acre, with highs of 19.7 units per net residential acre in Hempstead and 46.1 units per net residential acre in Long Beach (mostly beachfront apartment blocks).

3.2.2 Suffolk County Residential
Suffolk, by contrast with Nassau, has a more exurban character with respect to density. From our analysis of the RPA database and the latest American Community Survey baseline data, Suffolk County has average of only 2.6 housing units per net residential acre; however, there is a key distinction between the western Suffolk communities of Babylon, Islip, Smithtown, Huntington, and Brookhaven and the eastern rural and resort communities.

• The average single family home density in Suffolk is only 2.3 units per net residential acre, with highs of 5.3 in Babylon and 3.2 in Islip and average lows of as low as one per acre in some outlying and rural towns,

• Babylon has the highest density, with 6.2 units per net residential acre, with Brookhaven and Islip also displaying a suburban character (respectively, 3.3 and 3.8 units per net residential acre). The other western towns have residential densities averaging between 2.0 and 2.5 per acre.

• The rural and resort communities in Eastern Suffolk tend to have average housing densities of between 1 and 1.5 units per net residential acre.

The eastern communities average only one home per net residential acre.

Multi-unit homes average 10.2 units per net residential acre for Suffolk, with a high of 18.8 units per net residential acre in Babylon and 13.8 in Islip.
### 3.2.3 Overall Development Intensity

The following chart illustrates average development density across all programs, by town:

**Graph 4 - Average Development Intensity, Gross Square Feet per gross developed acre**

![Graph showing average development intensity across towns]

### 3.3 Land-use Types & Case Studies

In order to arrive at a better understanding of the current state and the future direction of built form in Long Island and to validate the assumptions used in the baseline studies and the 2035 projections, we undertook comparative studies of Long Island typologies. With these studies, which relied upon CAD-based measurements of development footprints in actual representative neighborhoods, plus analysis of photographic evidence of building heights, we sought to acquire an understanding of typical patterns with respect to built form and land-use on Long Island, through a set of measures of land-use performance. The measures investigated include the following:

- Parcel Coverage %
- Floors/Base Ratio
- Floor Area Ratio ("FAR")
- Floor Area/Unit
- For housing, Units/Net Residential Acre

Such patterns provided the generalizable guidance we needed to prepare the 2035 projections.
3.3.1 Case Study Parameters
The following table describes built form and land-use parameters for representative case studies of both legacy Long Island conditions and potential future development patterns. These parameters were then used as the basis for our land-use calculations in the methodology described in Section 2 above.

Table 6: Land-use Performance Measures for Representative Case Studies

<table>
<thead>
<tr>
<th></th>
<th>Parcel Coverage</th>
<th>Floor/Area Ratio</th>
<th>Floor Area/Unit</th>
<th>Units/Net Hig Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Long Island</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estate Single Family Residential</td>
<td>Locust Valley (Nassau)</td>
<td>6%</td>
<td>1.80</td>
<td>0.11</td>
</tr>
<tr>
<td>Transitional Rural Residential</td>
<td>Sherwood Lane (Suffolk)</td>
<td>5%</td>
<td>1.50</td>
<td>0.08</td>
</tr>
<tr>
<td>Exurban Single Family Residential</td>
<td>Briarroot Drive, Smithtown (Suffolk)</td>
<td>13%</td>
<td>1.80</td>
<td>0.23</td>
</tr>
<tr>
<td>Suburban Single Family Residential</td>
<td>Brooklyn Blvd, Bay Shore (Suffolk)</td>
<td>23%</td>
<td>1.20</td>
<td>0.28</td>
</tr>
<tr>
<td>Transitional Suburban Residential</td>
<td>Booth Street, Hempstead (Nassau)</td>
<td>27%</td>
<td>1.50</td>
<td>0.40</td>
</tr>
<tr>
<td>Urban Mixed-Type Residential</td>
<td>E. Walnut St, Long Beach (Nassau)</td>
<td>35%</td>
<td>1.30</td>
<td>0.45</td>
</tr>
<tr>
<td>Attached Townhome Cluster</td>
<td>Woodland Estates, Baldwin (Nassau)</td>
<td>30%</td>
<td>1.60</td>
<td>0.48</td>
</tr>
<tr>
<td>Multi-Family Apartment Cluster</td>
<td>Wilshire Lane, Oakdale (Suffolk)</td>
<td>33%</td>
<td>2.00</td>
<td>0.65</td>
</tr>
<tr>
<td><strong>Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Box Outlet Mall</td>
<td>Gateway Plaza, Patchogue (Suffolk)</td>
<td>24%</td>
<td>1.00</td>
<td>0.24</td>
</tr>
<tr>
<td>Main Street Retail</td>
<td>East Main, Davis Park (Suffolk)</td>
<td>41%</td>
<td>1.80</td>
<td>0.75</td>
</tr>
<tr>
<td>Commercial/Industrial Park</td>
<td>Modular Ave, Commack (Suffolk)</td>
<td>33%</td>
<td>1.10</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Likely Future Typologies (given current market trends)

<table>
<thead>
<tr>
<th></th>
<th>Parcel Coverage</th>
<th>Floor/Area Ratio</th>
<th>Floor Area/Unit</th>
<th>Units/Net Hig Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residential</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-market Detached Residential</td>
<td>Plymouth, MA</td>
<td>30%</td>
<td>1.80</td>
<td>0.70</td>
</tr>
<tr>
<td>High-end Detached Residential</td>
<td>Loudoun County, VA</td>
<td>34%</td>
<td>1.50</td>
<td>0.52</td>
</tr>
<tr>
<td>Multi-Family Apartment Cluster</td>
<td>Melrose, MA</td>
<td>37%</td>
<td>2.80</td>
<td>1.03</td>
</tr>
<tr>
<td>TOD Multi-Family Apartments</td>
<td>San Diego, CA</td>
<td>43%</td>
<td>3.00</td>
<td>1.20</td>
</tr>
<tr>
<td><strong>Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gateway Center</td>
<td>Irvine, CA</td>
<td>33%</td>
<td>3.44</td>
<td>1.13</td>
</tr>
<tr>
<td>TOD Main Street Retail</td>
<td>San Diego, CA</td>
<td>35%</td>
<td>1.40</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Source: Arup research.

3.3.2 Estate Single Family Residential & Transitional Rural Residential
Rural development patterns and suburban estate home development patterns that are designed to evoke rurality represent the lowest density of development present on Long Island. Estate homes, are located all over the island but concentrated in Eastern and Northern Suffolk and North Shore Nassau. Rural development with smaller (non-estate) homes tends to be focused in and around villages in Eastern Suffolk County.

Case studies found that these homes are typically developed at less than 0.5 to one unit per net residential acre at floor area ratios (“FARs”) of about 0.1 and with net parcel coverage of 5% to 8% (the portion of the net parcel area built upon).

Rural non-estate development has, in the past, followed a similar pattern but with smaller homes (0.5 to 2 units per net acre, FARs of 0.1 to 0.2, at 5% to 10% parcel coverage. Most development of this nature occurred prior to 1990.

Barring significant changes in land-use policy, estate homes will likely continue to be constructed, particularly in western Long Island and the resort communities, displacing areas previously developed in non-estate rural residential densities, and perhaps at slightly higher coverage and FAR with even larger homes per parcel.
In general, land-use regulations in estate home subdivisions preclude other forms of residential.

Diagram 1 Long Island Estate Single Family Residential & Transitional Rural Residential

<table>
<thead>
<tr>
<th>Estate Single Family Residential</th>
<th>Transitional Rural Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;.5-1 units/net acre</td>
<td>FAR 0.1, 5-8% cover</td>
</tr>
<tr>
<td>FAR 0.1, 5-8% cover</td>
<td>&lt;.5-2 units/net acre</td>
</tr>
<tr>
<td>&lt;.5-2 units/net acre</td>
<td>FAR 0.1, 5-10% cover</td>
</tr>
</tbody>
</table>

3.3.3 Exurban & Suburban Single Family Residential

Exurban and suburban single family residential make up the single largest usage of developed land on Long Island.

Exurban

Exurban single family residential typologies predominate in much of Suffolk County and in some older areas of Eastern and North Shore Nassau County. Case studies found that this development generally took place at densities between 2 to 4 units per net residential acre, with FARs between 0.2 and 0.25, and net parcel coverage between 10% to 15%.

Anecdotal information suggests that the traditional exurban single family typology is somewhat endangered in today's development environment, with consumers increasingly unwilling to pay for relatively small homes on relatively large parcels. Recent construction has tended to fill somewhat smaller (quarter and fifth acre) parcels with significantly larger homes, with limits on housing unit size approaching limits in local land-use regulations.

Suburban

Suburban single family homes are commonplace throughout Nassau and Western Suffolk, especially along the South Shore and in Central Long Island. Case studies found that such development is characterized by development densities of 4 to 6 units per net residential acre, with FARs between 0.25 and 0.3, at 20% to 25% net parcel coverage.

Similarly, where land-use regulations permit, economics and consumer preferences have increasingly come to favor larger homes on smaller lots. This is especially the case in land-constrained environments such as those portions of Long Island where the suburban single family typology predominates. One-eighth-acre, near zero-lot configurations are now commonplace for products provided to socio-demographic groups that used to favor the 4 to 6 units per net residential acre suburban product.
3.3.4 Transitional Suburban Residential & Urban Mixed-Use Type Residential

Transitional suburban residential refers to those areas originally developed largely in single-family detached product but which have become increasingly urbanized, with some re-zoning and redevelopment to permit two, three and four family attached and stacked products on odd-lots. Limited end-block mixed-uses may exist in some such areas as well (such as corner convenience shops). A number of such neighborhoods exist in older areas of towns such as Hempstead and Babylon, and sporadically through Central and Southern Nassau. These typologies are relatively rare compared to the lower density types described above.
3.3.5 Attached/Townhome Cluster & Multi-Family Apartment Cluster

Multi-family residential units tend to be concentrated in cluster developments throughout Nassau and western Suffolk. Configurations vary broadly, and the representative typologies are relatively uncommon.

Historically, townhomes and two-story single-loaded “motel-style” corridor buildings have been favored; however, more recent development has been observed to favor double-loaded perimeter blocks, developed at somewhat higher densities (20 to 55 units per net residential acre, with FARs of 0.7 to 1.2 and 35% to 40% parcel coverage).
3.3.6 Commercial & Industrial

Commercial and industrial typologies tend to comprise of lowrise (1 to 3 story) structures, with some higher rise buildings (averaging 3 to 6 stories) in major activity centers like Hempstead, Babylon and Islip.

Very little new main street development is being undertaken, with new development of this nature tending toward horizontally mixed-use configurations with a combination of big-box development set behind street-fronting shops and multi-family development on separate but directly adjacent clusters. Such projects may be seen near transit stations and in centers like the downtowns of Hempstead and Babylon.

Diagram 5 - Commercial & Industrial

<table>
<thead>
<tr>
<th>Mall/Big-Box Retail/Commercial</th>
<th>Main Street</th>
<th>Industrial/Technology Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAR 0.2-0.3, 20-25% cover</td>
<td>FAR 0.5-1.0, 30-40% cover</td>
<td>FAR 0.3-0.5, 25-35% cover</td>
</tr>
</tbody>
</table>

3.3.7 Institutional & Government

Institutional and government building typologies vary broadly, including many complexes in large campus settings. Density is typically lower than commercial and industrial typologies, with relatively higher proportions of sites devoted to parking and servicing.

3.4 Basic Land-use Typologies – By Scenario

The likely future direction of development patterns, following the trends and generated using the methodologies described above, are illustrated in the following page.

(Please see attachment – LI2035 Basic Land-use Typologies)
4 2035 Scenarios – Land Use

4.1 Total Land Developed

Projected development to 2035 under the two scenarios is summarized in the charts below. In general, the Business-as-Usual case has a lower developed land use footprint.

For Suffolk County, the proportion of single family product appears to be higher in the 2035 Business-as-Usual case because the higher development densities and consequently smaller development footprints of the multi-family residential and commercial typologies take up less space relative to single family home development patterns.

As previously discussed, the Business-as-Usual case represents the more likely outcome given today’s development patterns. The Historical case represents a return to development patterns and demographic characteristics typical of the 1980s and 1990s and earlier.

Graph 5 – Comparison of Total Cumulative Development in Acres & % of Total, to 2035 Historical and Business-as-Usual Cases
The chart below summarizes the distribution of cumulative developed land use by town in the 2035 Historical Scenario:

**Graph 6 - 2035 Historical Land-Use Scenario, cumulative acres**

The chart below summarizes the distribution of land-use by town in the Business-as-Usual Land-Use Scenario:
Graph 7 - Business-as-Usual Scenario, cumulative acres

- Southold
- Southampton
- Smithtown
- Shelter Island
- Riverhead
- Islip
- Huntington
- East Hampton
- Brookhaven
- Babylon
- Oyster Bay
- North Hempstead
- Long Beach
- Hempstead
- Glen Cove

0,000 20,000 30,000 40,000 50,000 60,000 70,000 80,000 90,000 100,000

- Single Family Residential
- Multi-Unit Residential
- Institutional
- Industrial
- Commercial/Retail/Other
### 4.2 Cumulative Housing Units & Density

The following charts illustrate the distribution of housing units by type under each of the two scenarios for 2035, showing the correspondingly higher proportion of multi-family units along with the larger number of assumed total households in the 2035 Business-as-Usual land-use case, and the correspondingly lower density of development in the 2035 Historical land-use case.

**Graph 8 - Cumulative Housing Units & Density, 3 Scenarios, Units and Units/Acre**

![Graph showing cumulative housing units and density for 2008 Baseline, 2035 Historical, and 2035 Business-as-Usual scenarios for Suffolk and Nassau counties. The graph displays the number of units and units per acre for single-family and multi-family units.]
5 General Conclusions – Land Use

This study presents a characterization of baseline existing conditions as well as two alternative scenarios for the future development of land-use on Long Island. These results present a conceptual basis for the future development of strategies that may facilitate more sustainable patterns of development in Long Island’s future.

Long Island is in a position to choose between development scenarios which attempt to establish a balance between population growth and conservation pressures.

Long Island may be described in terms of three separate zones, each following somewhat different development paths:

- The first zone consists of a largely built-out and rapidly urbanizing Nassau County, where future land-use issues will increasingly shift toward redevelopment, densification, and the graceful accommodation of aging and demographic change. Nassau County has a heavily residential character, which will likely continue into the future, with New York City and all of its amenities continuing as the center of gravity. Connectivity between these residential neighborhoods and local activity hubs with New York City combined with smart development patterns around those local hubs and connection points will be critical in alleviating the congestion that will inevitably accompany any continued population growth.

- The second zone consists of western Suffolk County – a patchwork of built-out and densifying areas and other areas that are still attracting considerable new subdivision-style development. Many communities will want to exploit opportunities for employment centers and services to catch-up with decades of rapid residential growth, allowing Suffolk County to become increasingly diverse, with its own, largely self-contained, centers for economic activity. Its rich array of institutions, research centers, technology-driven employment clusters, and retail amenities allow portions of Suffolk to maintain centers of gravity that are less directly linked to New York City relative to those of Nassau County. Sprawl-control and growth-management measures will be critical as development begins to favor denser typologies. Avoiding mass-matches between low density development types and the needs of an increasingly diverse population – including segments without ready access to the private automobile – will be another priority for consideration for Suffolk County’s planners.

- The third zone consists of eastern Suffolk County, with its substantial agricultural and recreational resources and its isolated system of towns and new subdivisions. Here, the primary question relates to growth and sprawl management and the desirability of subdivision-style new development before areas to the west reach build-out – in other words, leapfrog development. Growth pressures are high, and balancing the need to protect local, often rural, character with leapfrog development pressures will continue to be a significant challenge.

The development of strategies should take these differences in town and regional character into account, allowing different types of places in Long Island to build upon their respective strengths from a land-use perspective.

The 2008 baseline and 2035 projected land-use futures described in this report provide a basis not only for the development land-use strategies but also the basic data on demographics and development that will underpin other decisions, in arenas from economics, to governance, to infrastructure.
6 Goals – Land Use

In general, we believe that our approach to land-use should be consistent a systems approach, integrated land-use with energy, water, waste, socio-cultural, mobility and accessibility systems, and based on networks of complementary communities, services, and systems. The systems approach must be flexible enough to cover all applicable scales of Long Island, reaching beyond municipal boundaries to address issues of regional significance.

6.1 Transit Oriented Development

Much attention has been given to transit-oriented development ("TOD") as an alternative model for Long Island's towns – the placement of future development, at high densities, within easy walking distance of commuter lines and other transit corridors. The 2035 Business-as-Usual scenario shows a total development footprint where effective TODs are implemented, largely under existing land-use plans, for the downtown centers of select towns, while the 2035 Historical scenario essentially shows the development footprint without any TOD strategies. Appropriate TOD strategies, more broadly implemented (with more hubs) and at higher densities, have the potential for further shrinking the new development footprint beyond the levels modeled in the Business-as-Usual scenario.

Figure 2: Nassau Hub.

Our findings suggest that transit-oriented development strategies are, in all likelihood, required to achieve the dense concentrations of population in the vicinity of the centers of towns such as Hempstead, Babylon and Islip shown in the 2035 Business-as-Usual scenario. These concentrations are necessary to enable Long Island to absorb NYMTC’s projected level of population increases, given the total land available for development. Moreover, if appropriately implemented, with proactive zoning and hub-focused development incentives, transit-oriented development strategies could even further improve upon the Business-as-Usual scenario, by facilitating that development of more centers and at somewhat greater density, thereby further decreasing the footprint of new development beyond that anticipated in the Business-as-Usual scenario.

TOD-related goals may include the following:

- Alignment of transportation-related investments and station upgrading initiatives with town and regional land-use planning.
- Mixed-use zoning for existing town centers, especially with proximity to transit stations.
- More targeted TOD-specific masterplans as presently being undertaken for hubs such as Mineola and Wyandanch.
- Promotion of the development of activity hubs that provide employment and amenities as well as housing that, when grouped together, these activity nodes provide an amenity package comparable to NYC.
- For TOD and projects of regional significance: Match greater predictability in the development process, with certainty of benefits for existing residents and businesses
- Incorporation of traffic calming as well as pedestrian and bicycle networks into existing communities; produce model road standards.
- Improvement of connectivity and accessibility within and between hubs, creating a viable hierarchy of urban places and activity intensities.
- Protection and promotion of the region’s downtowns and Main Streets as viable activity hubs
- Development of the “urban character” and “sense of place” of hubs

### 6.2 General Land Use Management Policies

We believe, however, that land-use interventions should not be limited to transit-oriented development. Rather, land-use regulation should encourage developments both within and outside of regional hubs that positively contribute toward integrated, quality-of-life-enhancing, and sustainable urban systems for Long Island. Such systems should cover a broad array of economic, socio-cultural, accessibility/mobility, environmental, resource management, disaster resilience/public safety planning, and physical dimensions, relating land-use patterns within Long Island’s town to their super-regional context, including the relationship with New York City and other suburban sectors. Taken together with Smart Growth and TOD strategies, these additional measures will further reduce Long Island’s future development footprint as well as improve quality-of-life across the board.

#### 6.2.1 Performance–based Zoning and Land management

Introduction of performance-based zoning combined with small changes to land management policy can lead to big impacts on sustainability by shaping the type of development that occurs. Land-use impacts that can be influenced by land management policy, with goals that might include:

- Reducing unit sizes.
- Indirect incentives to increase lot coverage and encourage smaller lots.
- Indirect incentives for densification and exploitation of infill opportunities instead of virgin land development, where appropriate.
- Indirect effects on the form of cluster development.
- Prevention of excessive leap-frog development.
- Reduction of impacts to virgin land.
- Integrated conservation and farmland preservation planning.
- Development controls designed to minimize risks from potential disasters and facilitate greater disaster resilience particularly in areas vulnerable to storm-related flooding.
- Disposition of lands forecasted to remain undeveloped past 2035, including possible reclassification into protected open space, agriculture or conservation lands.
In general, these measures may serve to indirectly regulate the location and form of new development, manage and reduce land-use efficiency (thereby leading to greater density smaller unit sizes, and so forth), and facilitate conservation/preservation of valuable community assets.

6.2.2 Land-use Regulatory Changes

Land management tools can be designed to work toward these ends without changing home-rule principles. Examples of ways in which local policies may be adjusted to relate to the type of performance-based zoning and other land management effects described above, may include the following:

- Product-differentiated and regional-scale development impact fees.
- Fireshed, watershed/wetland, farmland and woodshed conservation regulations and initiatives.
- Common open space accessibility standards.
- Water management design and pervious surface requirement.
- Land-banking/transferable development rights systems.

Such measures may also be implemented through regional or county-scale cluster development and subdivision development regulations in ways that avoid or minimize controversial changes directly to zoning codes and direct land use regulations.

6.2.3 Community Development Guidelines & Voluntary Measures

Municipalities, towns and even neighborhoods and new subdivisions can establish guidelines for specific neighborhoods of villages to facilitate desirable and voluntary land-use and urban design/planning objectives. This model would be an extension of what many Long Island communities are already doing through planned development districts. Goals which may be achieved through voluntary guidelines may include:

- Provision for localized and voluntary land-use regulations, covering neighborhood identity/urban design/architecture guidelines, building and community design
- Provision for historical and character preservation initiatives.
- Provision for district-scale urban agriculture, perhaps on vacant sites or on conserved tracts.
- Provisions for additional community facilities and amenities.

A uniform set of voluntary regional guidelines and performance standards may be developed for entire towns or even counties and/or all of Long Island.

6.2.4 Redevelopment

The NYMTC and HR&A projections for both the 2035 Business-as-Usual and Historical suggest that hundreds of acres of primarily industrial land will become vacant. Many of these sites are located in areas that can support redevelopment more easily than the leapfrog development of Greenfield tracks in now undeveloped areas. A general goal may be to encourage redevelopment and urban regeneration instead of greenfield redevelopment.

- Revitalize vacant and underutilized malls and strip malls, especially those with the potential to serve as mixed-use neighborhood centers.
- Revitalize and promote Main Streets as mixed-use neighborhood centers, encouraging higher density infill development where appropriate.
- Revitalize under-utilized or abandoned industrial park, industrial and other brownfield sites, including consideration of such sites for open space and urban agriculture.
Long Island Regional Planning Council

Long Island 2035 Regional Comprehensive Sustainability Plan

Technical Report-Equity
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party
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Figure 2: This map shows the geographic distribution of Long Island’s racial and ethnic groups.

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Figure 4: Comparison of Median Household Income within Half Mile Buffer of LIRR and the Entire Village, Hamlet, or Place

Figure 5: Percent of Children Living in Each Place Below Poverty Level. Figure 6: Concentration of Children living below the Poverty Level

Figure 7: Percent of Housing Units that are Rental by Village, Hamlet, and Place

Figure 8: Income that would be Needed to Afford Average-Priced Existing Housing in Nassau and Suffolk Counties

Figure 9: Average Annual Housing and Transportation Costs: This map indicates that even in areas where housing costs alone are (relatively) affordable, high transportation costs push the combined basic living costs to levels unaffordable to many Long Island families. Transportation costs in many cases, including many high-growth areas of Suffolk County, reflect the cost of multiple car ownership that many households need for commuting and non-work travel
1 Methodology for Equity Analysis

1.1 Baseline Data Source

Baseline data for the equity analysis is from the 2000 US Census, which is the most recent source of demographic data at the census tract level. Because racial, economic, and social disparities occur at the geographic level of Long Island’s smallest political units – villages, hamlets, and places – more current sources such as the American Communities Survey will not reveal the patterns that need to be identified to discuss equity issues and trends.

Mapping of census data reveals patterns of racial and ethnic segregation, as well as spatial disparities in income, poverty, property wealth, and access to employment and economic opportunity.

We have also reviewed the Long Island Index, studies by other organizations on housing segregation and discrimination, and the Economy and Governance sections of this report.

2 Current Conditions

2.1 Racial and ethnic segregation

Mapping of census data confirms that while Long Island’s population is increasingly diverse, it remains highly segregated. The majority of Long Island’s villages, hamlets, and places are predominantly white non-Hispanic, while black and Hispanic residents are concentrated in a small number of places. Asians today make up a small but growing proportion of Long Island’s population, but 2000 census data is unclear on the degree to which their places of residence are dispersed or segregated.

Historical factors contributing to present-day patterns of racial segregation include practices that were codified in both law and practice until the passage of the Civil Rights Act of 1968. Deeds on Levittown’s initial 17,400 homes, for example, prohibited their ownership or occupancy by “anyone other than a member of the Caucasian race.”

While a small number of free black communities on Long Island date back to the pre-Civil War era, restrictive covenants and other forms of de jure segregation limited the choices available to black families who came to Long Island during the post World War 2 period when the island experienced its most rapid growth, and set into place patterns of segregation that have persisted for decades. Those patterns have been perpetuated in some instances by overt and ongoing racial discrimination by landlords, sellers, and lenders; racial steering by real estate brokers has also been documented. Additionally, some nominally race-neutral policies, such as a preference for local residents in the allocation of new affordable housing units, have the effect of reinforcing pre-existing patterns of segregation. And enforcement of fair housing laws by state and federal agencies has been inconsistent. For example, the US Department of Housing and Urban Development has largely failed to follow its own regulations, which require municipalities receiving funding under HUD programs to report on their plans and policies for reducing segregation. As of 2008, only four of the 100 Long Island municipalities that receive HUD funding have submitted the required reports, according to The Racial Equity Report Card: Fair Housing on Long Island – released in 2008 by ERASE Racism.1

Thus, while approximately 23.5% of Long Island’s total population was black, Hispanic, Asian, or other as of 2000, many areas have non-white populations between zero and ten percent, while a relative handful of communities have populations that are over 85% non-white.

Figure 1: While the overall percentage of Long Island residents who describe themselves on the US Census as other than white non-Hispanic is 23.5%, this map shows the uneven distribution of this population among Long Island’s communities.
Figure 2: This map shows the geographic distribution of Long Island’s racial and ethnic groups.
2.2 Income and poverty

Household and per capita incomes and rates of child poverty show a similar pattern of disparity. The concentration of affluence and poverty generally tracks the distribution of non-Hispanic white vs. black and Hispanic populations, insofar as all of the communities whose populations are predominantly black or Hispanic also have low incomes and high concentrations of poverty, though some communities whose populations are more than 50% white also have low household and per capita incomes, relative to Long Island as a whole.

(see map, Per Capita Income of Residents.)

In many communities, income inequality manifests at a very fine-grained spatial scale. Village and town centers (mapped here as areas within ½-mile of Long Island Rail Road stations) in almost every case have median household incomes lower than those of the surrounding village, hamlet, or place. This disparity is probably a function of the concentration of both rental and (relatively) low-cost housing in these centers, discussed further in the housing section of this chapter.

(see map, Comparison of Median Household Income with Half Mile Buffer of LIRR and Entire Village, Hamlet, or Place.)
Figure 3: Per Capita Income

Figure 4: Comparison of Median Household Income within Half Mile Buffer of LIRR and the Entire Village, Hamlet, or Place
Child Poverty

Communities with high concentrations of child poverty face multiple challenges to providing those children with a high-quality education. Children living in poverty need more – and more expensive services – from their schools, from remedial and special education classes to nutrition programs and added school security. But the districts in which they live are precisely those with the lowest levels of taxable property wealth, and often also lack commercial real estate and sales tax revenue. They thus have the highest school expenses per child, and the lowest levels of revenue from the sources upon which local school districts depend for funding.2

This pattern not only results in marked disparities in present-day expenditure per child, but is of even greater concern in view of the trend toward unsustainable future levels of school costs island wide, as described in the Governance section of this report.

Figure 5: Percent of Children Living in Each Place Below Poverty Level. Figure 6: Concentration of Children living below the Poverty Level

In some areas with low overall population densities, the prevalence of child poverty as a percentage of all children is relatively high. Mapping both the percentage and number of children in poverty helps to clarify both the extent and the intensity of the problem.
Table 1: Chart from the Long Island Index: The effort required to raise revenues varies tremendously across Long Island.

Many of the districts with the largest numbers of children also have the lowest property values, while districts serving fewer children often have much higher property values. Thus, the impacts of disparities in property wealth are multiplied. This graph illustrates the relative cost to homeowners in each district of increasing per-pupil expenditures by $250 per year. In the most property-rich districts, the owner of a home valued at $450,000 would pay as little as $10 per year in added property taxes, while the owner of a $450,000 home in the poorest districts would pay over $300 more per year.

Source: New York State Education Department. Fiscal Policy Institute.
2.3 Housing tenure, cost and affordability

Housing tenure, cost, and affordability vary greatly among Long Island communities. On the average, about 20% of housing units on Long Island are renter (19.70% of units in Nassau County, and 20.23% of units in Suffolk County.) But while some communities (shown on the map below in red) have a much larger proportion of rental units – 30 to 61% of their housing stock – others, shown in blue, have much less than their proportionate share of rental housing. Scarcity of rental units means that new and younger working families, who do not yet have sufficient savings to qualify for the purchase of a home, have very limited options in seeking housing on Long Island.

While high housing values underpin the ability of many Long Island communities to sustain schools and other public services, high housing costs also constitute a challenge to the region’s future growth and competitiveness. Housing prices in almost all of Long Island’s communities exceed levels affordable to most current Long Island residents, though affordability also varies markedly among communities.

Maps on the following page illustrate the uneven distribution of rental housing among villages, hamlets, and places, and the gap between the actual cost of housing, and levels that would be affordable to households earning the median incomes in Nassau and Suffolk Counties.

The combined cost of housing and transportation add to the burden carried by many Long Island households, and to the challenges facing younger workers, their families, and their employers. Data from the Center for Neighborhood Technology indicates that even in areas where housing alone is relatively affordable, the combined cost of housing and transportation frequently exceeds its benchmark of affordability (combined housing and transportation costs of less than 48% of household income), leaving families struggling to meet these basic needs.
Figure 7: Percent of Housing Units that are Rental by Village, Hamlet, and Place

Figure 8: Income that would be Needed to Afford Average-Priced Existing Housing in Nassau and Suffolk Counties
Figure 9: Average Annual Housing and Transportation Costs: This map indicates that even in areas where housing costs alone are (relatively) affordable, high transportation costs push the combined basic living costs to levels unaffordable to many Long Island families. Transportation costs in many cases, including many high-growth areas of Suffolk County, reflect the cost of multiple car ownership that many households need for commuting and non-work travel.
3 Implications of Demographic and Economic Trends

The Technical Report section on Long Island's economy projects a number of trends that have important implications for social and economic equity on Long Island. In particular, it notes that Long Island will continue to become more racially diverse through 2035. In both Nassau and Suffolk Counties, the white population will decline in absolute numbers and as a percentage of the total, with non-white Long Islanders likely to become a majority in both counties by 2035.

This diversification in many ways bodes well for Long Island's future. New Long Islanders – Black, Hispanic, and Asian – will help to mitigate the decline in the working-age population as the current and majority white workforce ages. And in a globalized economy, diverse and inclusive regions will have important competitive advantages. A diverse population brings a range of skills, entrepreneurial energy, and connections to worldwide social and business networks; it also adds cultural richness to Long Island's attractions for young workers from all racial and ethnic groups.

But if Long Island is to benefit from these advantages, it must welcome newcomers, and offer its signature assets - access to opportunity and a high quality of life – to all racial and ethnic groups. And this will not be possible if existing patterns of racial, ethnic, and economic segregation are allowed to persist.

Challenges:

The burdens of fragmented and inefficient delivery of key public services, particularly education, fall most heavily on low- and moderate-income communities. As the costs of those services continue to rise, communities with the lowest levels of taxable property wealth will be unable to sustain essential services, or to prepare their children to compete in a 21st-century economy.

Patterns of racial segregation in housing persist. Overt racial steering and discrimination by real estate professionals and lenders still occurs, and enforcement by state and federal agencies is poor. And policies that give local residents preference in new affordable housing perpetuates existing patterns of segregation.

Key sectors of Long Island's economy rely increasingly on an immigrant workforce, but businesses and communities have largely failed to grapple with the short- and long-term implications of that reliance. Agriculture, landscaping, and construction in particular rely on seasonal, transient, and permanent workers, many of whom are Latino immigrants. The needs of these workers for housing, transportation, education, health care, and other essential services are often met in ways that create conflict with municipalities and expose the workers themselves to harassment and violence.
4 Conclusions

Many of the strategies and actions that are needed to address Long Island’s economic and governance challenges, particularly those that seek to create more efficient structures for governance and for the financing of public services, to diversify housing and transportation choices, and to revitalize aging downtowns, also have the potential also to address issues of integration and equity.

But if these synergies are to be achieved, equity goals need to be articulated, a political consensus on their importance needs to be reached, and strategies need to be put in place to integrate equity into the planning and implementation of strategies on governance and taxation, the economy, land use, transportation, and infrastructure. In some cases, strategies will need to incorporate specific provisions to avoid exacerbating inequality. For example, plans to revitalize downtowns and incentivize transit-oriented development (TOD) need to incorporate measures to preserve the affordability of existing housing in station areas, and avoid displacing low-income residents.

In addition, specific actions need to be undertaken to eliminate discriminatory practices, particularly in the real estate industry, that have allowed segregation to persist half a century after the passage of the federal Civil Rights Act of 1968.

Examples of linkages and synergies

- **Housing**: increasing the range of housing options, including choices of location, available to all segments of the population, will help to reduce racial, ethnic, and economic segregation.

- **Governance and finance**: creating efficiencies and reducing the cost of public services, while enhancing their quality, as well as reducing reliance on local property taxes, will greatly reduce the inequities built into the current system of financing schools and other services.

- **Transportation**: broadening the range of transportation choices will improve the mobility of Long Islanders of all age and income groups, and will improve their access to jobs, education, recreation, etc. without adding to congestion.

- **Civic participation, cultural, and regional identity**: strengthening cultural and civic institutions and networks in minority and immigrant communities adds to Long Island’s shared base of cultural assets, catalyzes economic development, and promotes a new and shared sense of regional identity.

Where Equity-specific initiatives are needed

- Develop an action plan and timetable to eliminate housing discrimination: a combination of enforcement of existing laws and regulations, and education of real estate industry actors. Set goals on a regional basis, and make a range of tools and strategies available to enable localities to choose how best to achieve them.

- Convene a task force on immigrant workers in agriculture, landscaping, construction, and other immigrant-dependent industries. Bring together industry leaders, immigrant organizations and advocates, representatives of impacted municipalities, and nonprofits with expertise in housing, education, health, and other relevant areas. Their mandate would include developing a shared framing of the problems faced both by workers and host communities, as a precursor to the development of goals and strategies for addressing them.