CLIMATE SMART COMMUNITIES

Year 1 Report

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Energy Research & Development Authority

Prepared by

Cameron Engineering & Associates, LLP

An Independent Contractor to NYSERDA

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1. Executive Summary

During the past year, the Long Island Region endured one of the worst natural disasters in New York history. Long Island communities face many challenges as they continue to recover and rebuild from Superstorm Sandy – ranging from damaged infrastructure to displaced residents and businesses. While the storm delayed the progress of the Long Island Climate Smart Communities program, it also drew attention to the need for climate mitigation and adaptation strategies throughout the region. Today, Long Island communities are far more open to unique and innovative ideas related to sea-level rise and storm preparedness – setting the stage for the development of strong and effective climate action plans.

Year 1 saw three new communities join the Climate Smart Communities program – Suffolk County, Town of Southampton and the Village of Great Neck Plaza. The Long Island CSC Team also helped to reactivate several dormant programs, including the Town of East Hampton, Town of Islip and the Village of Greenport. Together, these communities are among the leaders in energy-efficient and climate smart actions on Long Island. The Team has already initiated the climate action planning process with the Town of Southampton and Suffolk County – demonstrating their eagerness to plan and prepare for the future. Two of the smaller communities, the Village of Great Neck Plaza and the Village of Greenport, have developed proposals for leading-edge anchor projects. The Village of Greenport Eco Energy Park and the Village of Great Neck Plaza multi-family solar initiative represent well-developed, creative projects that take advantage of the unique attributes of their respective communities. Copies of report appendices are available upon request by contacting NYSERDA or the New York State Department of Environmental Conservation (DEC).

2. Regional Climate Smart Communities Plan

At the start of the year, the Long Island Climate Smart Communities (CSC) Team developed a regional CSC plan outlining the team's work plan for the year (Appendix A). The regional plan focused on three main areas: the regional greenhouse gas inventory, engagement with communities and the development of climate action plans. This process would be aided by coordination with the Cleaner Greener Communities program, whose regional experience could help to inform the local climate action planning process.

3. Recruit Climate Smart Communities

3.1. Initial Outreach

All municipalities on Long Island (119 in total, including Nassau and Suffolk Counties) received a detailed questionnaire requesting information on facilities, operations, actions, and projects undertaken and planned by the municipality to reduce GHG and prepare for climate change (Appendix B). The survey was e-mailed to all municipalities on Long Island and included the survey document as well as a link to complete the survey online. The survey was patterned after the one issued by the Sustainability Institute at Molloy College to

municipalities as part of its Clean Energy Task Force program. Since the response rate to the survey was low, the Team followed up with phone calls and personalized emails to engage both participating and candidate CSCs.

3.2. Participating and Candidate CSC

As of May 2013, fourteen communities on Long Island had adopted the Climate Smart Communities Pledge (see Appendix B for adopted pledges):

Counties:	Suffolk County
Towns:	Babylon, Brookhaven, East Hampton, Huntington, Islip, North Hempstead, Smithtown, Southampton
Villages:	East Rockaway, Port Jefferson, Woodsburgh, Greenport, Great Neck Plaza

Out of these 14 communities, Suffolk County, the Town of Southampton and the Village of Great Neck Plaza adopted pledges within the past year. These new CSCs have demonstrated a strong desire to adopt climate action plans and begin work on new projects. Suffolk County has formed a highly motivated CSC task force and work has started on the development of a draft climate action plan. For many years, the Town of Southampton has been one of the leaders on Long Island in terms of innovative approaches to environmental stewardship. Since adopting the pledge it has been eager to participate and has also initiated the climate action planning process. The Village of Great Neck Plaza is also a leader in terms of environmental stewardship and the incorporation of smart growth planning principles. It has been an important addition to the program and has already developed several unique ideas for local anchor projects.

In addition to these 14 registered CSCs, the Long Island Team has been working with several municipalities who are very interested in the program but have not yet adopted the formal pledge. These municipalities include City of Long Beach, City of Glen Cove, Town of Hempstead, Town of Oyster Bay, Town of Riverhead, Village of Rockville Centre, and Nassau County. On western Long Island, the City of Long Beach is very eager to begin work on projects related to climate adaptation. The storm-ravaged city has a unique opportunity to rebuild with a focus on climate-resilient projects and policies. The Town of Hempstead has a long history of leading-edge environmental initiatives, including the development of an energy park and zero-energy house located on the south shore of Long Island. The Town of Oyster Bay has been a local leader in energy-efficient fleet management, particularly in the area of natural gas. Oyster Bay has developed its own compressed natural gas (CNG) fueling station at its primary Department of Public Works facility, allowing the town to purchase and compress its own natural gas. The town's entire sanitation fleet, along with several passenger vehicles, now operates exclusively on CNG.

While the Team will be focusing its future efforts on the adoption of the CSC pledge and the development of climate action plans in these communities, all Long Island municipalities will continue to receive CSC notifications about webinars, events, grant opportunities, and marketing materials that describe the program and its benefits. Moving forward, the team

will continue to meet regularly with all Climate Smart Communities and provide additional support to communities wishing to pursue the upcoming CSC Certification program.

The Team has also met with the Suffolk County Water Authority (SCWA) to discuss facility retrofits and fleet upgrades. Although the SCWA is not a municipality, the Team felt that, given the number of facilities under its control (233 pump stations) and the size of its fleet (approximately 300 vehicles), there would be opportunities to partner with municipalities on alternative fuel fleets and charging/filling stations.

4. Greenhouse Gas Emissions Inventory

4.1. Development of the Inventory

In late 2011, the Rauch Foundation funded an effort by the New York Institute of Technology (NYIT) to draft a comprehensive regional greenhouse gas (GHG) emissions inventory for Long Island's (LI) Nassau and Suffolk counties. NYIT released the complete results of the inventory in the form of a report and interactive website in early 2013. The *Long Island Carbon Footprint Project* provides a complete inventory and analysis for 2010, as well as comparisons between 2005 and 2010 emissions. The website also hosts a tool that features an interactive map that provides emissions data by sector, source, region, and municipality. Once the Long Island Climate Smart Communities webpage is launched, there will be a direct link to the NYIT report, tool and methodology for the Long Island inventory.

The LI GHG inventory includes the following sources:

- Fuel use (oil and natural gas) and electricity
- Transportation
- Industrial processes
- Agriculture
- Waste (wastewater and solid waste)
- Land use, land-use change, and forestry

The inventory utilizes data from the following sectors:

- Residential - building energy consumption
- Commercial and Industrial - building energy consumption
- Municipal - building energy consumption (included in commercial sector)
- Land Transportation - vehicle and fuel types, vehicle miles traveled (VMT)
- Marine Transportation - recreational only
- Solid Waste - generation rates and disposal types
- Waste Hauling - types and destinations
- Wastewater Treatment – large and small wastewater treatment plants, and on-site wastewater systems
- Land Use - agriculture, forested areas, open space

- Streetlights - type

Most data collected in the inventory are parsed by taxing jurisdiction (town, county and city) and in some cases by zip code.

- LIPA electric data by municipality (including villages and some unincorporated areas)
- National Grid gas data by zip code – request made to sort by municipality
- Fuel Oil – from the Oil Institute of Long Island
- Transportation data – by community, but includes vehicles traveling through

Inventory methodology was based in large part on the protocols developed by the New York State (NYS) GHG Protocol Working Group managed by Climate Action Associates and administered by the New York State Energy Research and Development Authority (NYSERDA). Cameron Engineering provided additional data and GIS analysis to complete the inventory, including Transportation Analysis Zone (TAZ) trip data to complete the transportation section of the inventory, land use and forestry cover data, and any available agriculture data (note that 2010 data were not available for Long Island).

4.2. Utilization of the Inventory

The CSC Team utilized the Long Island GHG inventory as the 2010 emissions baseline for each of the participating municipalities. The inventory and 2005-2010 comparisons will be included in the relevant climate action plans, allowing municipalities to assess emissions trends.

The emissions inventory was provided to participating CSCs using the template developed by the NYS GHG Protocol Working Group (see Appendix C). In addition, the spreadsheets developed by NYIT for each sector were distributed to participating CSCs to allow for future emissions tracking. The NYIT spreadsheets contain all of the raw data, calculations, emissions factors, and methodology involved with the development of the Long Island GHG inventory. After delivery of the inventories, the Sustainable Southampton Green Advisory Committee reached out to the CSC team for additional assistance in refining the Town of Southampton's inventory (see Appendix C). The Committee is interested in incorporating the findings of the Inventory into their climate action plan, and potentially the Sustainability Element Update of the Town of Southampton Comprehensive Plan. The Long Island CSC Team also provided assistance to the Cleaner Greener Communities regional program to incorporate the Long Island Inventory within the Long Island Regional Sustainability Plan. Within the Plan, the Cleaner Greener Communities Team developed GHG emissions projections forward-casted to the year 2020. These projections may be useful for municipalities as they continue to develop climate action plans, providing a context for future climate actions and their potential consequences.

Based on the NYIT project, there was a significant reduction in emissions on Long Island from 2005-2010, which has been very encouraging for many of the municipalities. As a region, Long Island reduced its overall emissions output by 9.75% from 2005 to 2010. Quantitative metrics, like emissions reductions and cost savings, are often missing from community-level environmental initiatives. The provision of these metrics helps to justify both past and future actions, as they help to highlight the benefits associated with

environmental initiatives as opposed to the typical focus on initial costs. These metrics also allow municipalities to prioritize sectors for action, which is often a necessary step, given their limited resources and staff. The 2010 GHG inventory will also be used to measure the success of the climate action plans developed by the participating CSCs. Some municipalities have expressed reservations about adopting specific emissions reductions targets. Even without a specific emissions target, however, municipalities can still use the available data and standardized template to monitor emissions, costs and energy consumption or use the emissions data to promote particular areas of achievement.

5. Market CSC Program

The Long Island CSC Team has given formal presentations and informal overviews on the CSC program to the following organizations (see Appendix E):

- Nassau County Village Officials Association
- Suffolk County Village Officials Association
- Long Island Green Homes Consortium
- Suffolk County Legislature Energy & Environment Committee
- Cleaner Greener Communities
- Clean Energy Task Force

In addition, Cameron Engineering gave formal presentations and presented informal overviews of CSC and climate adaptation issues at the following events:

- Hofstra University Conference on Recovery and Rebuilding After Superstorm Sandy: Legal Perspectives
- Vision Long Island Smart Growth Summit (led panel discussion, manned booth and discussed CSC with municipal officials)
- Suffolk County Planning Federation Conference
- APA East End Planning Conference

The Team also distributed flyers and informational handouts at a Long Island US Green Building Council meeting, Hofstra Land Use Forum events, and Sustainable Long Island community-outreach events (see Appendix B for flyers).

Cameron Engineering worked on the development of a website to serve as a portal for CSC program information, including a collection of local resources and planning tools. The website will include all of the deliverables developed throughout the past year and links to relevant tools and links, such as the NYIT *Long Island Carbon Footprint* report and GHG tool.

Working with the Greater Long Island Clean Cities Coalition (GLICCC), Cameron Engineering developed an alternative fuels map and searchable database that includes all compressed natural gas (CNG), propane (LPG), ethanol (E85), and electric charging stations on Long Island (see Appendix D).

In an effort to address post-Sandy concerns within the CSC framework, the Team created an information packet concerning National Flood Insurance Program (NFIP) changes, Community Rating System (CRS) insurance discounts, and FEMA rebuilding standards to assist both municipal officials and residents (see Appendix D).

Cameron has also created informational handouts regarding energy-efficient fleets, infrastructure adaptation and mitigation, green and cooperative purchasing, reducing municipal energy use, and local energy-efficient policies and ordinances (see Appendix D).

6. climate action planning

6.1. Support Local Climate Action

The Team has performed extensive research and analysis to support climate action planning at the local level. The Team developed and maintained a database that includes a comprehensive list of projects, policies, and plans for each of the CSCs on Long Island (see Appendix D). The database plays an important role in the development of climate action plans, allowing municipalities to catalog past, present and future climate actions. The database was used during each of the Team's meetings with CSCs to assess their successes and failures and review the actions of other Long Island communities. In addition, it allowed municipalities to identify potential areas for collaboration, which became a common theme during meetings with the East End towns.

One of the Team's goals was to re-introduce and reactivate several existing Climate Smart Communities. The Town of East Hampton, Town of Islip, and Village of Greenport had all adopted the CSC pledge in 2010, but their programs were dormant. The communities cited the transition of elected officials and reductions in staff as the primary reasons behind their inactivity. Since reactivating these communities, they have been among the most eager to move forward and pursue innovative anchor projects. In particular, the Village of Greenport has taken significant steps towards the development of a full-scale energy park, complete with several renewable technologies, including solar, wind and geothermal systems.

For the towns, villages and cities on Long Island, the Team provided information on land use policies and codes that would result in reduced emissions and reduce vulnerability to climate change impacts. Unlike the counties, the region's smaller municipalities have the ability to regulate land use and building codes. New York State law allows these municipalities to adopt stricter code standards than required by the State – allowing for localized approaches to energy efficiency, climate mitigation, and adaptation. During a meeting with the Town of Southampton and members of the Sustainable Southampton Green Advisory Committee, the Town shared its experience with an innovative approach to building codes – both for residential and commercial properties. The Town's residential code features a tiered energy rating system that holds larger homes to stricter energy standards. The Town also has a similar provision for energy-efficient residential swimming pools. For commercial properties, the Town has developed an incentive-based system that uses LEED ratings as a benchmark. The Town will allow commercial properties to exceed height or gross-floor area restrictions if it is constructed to current LEED standards. The Team shared the Town's innovative codes and their performance analysis with all participating CSCs in the region.

Throughout the meetings with participating and candidate CSCs, it became apparent that municipal building audits and retrofits play a key role in local emissions and cost-reduction strategies. Communities often cited these audits and retrofits as "low-hanging fruit," as many retrofits and energy-efficient office practices can be easily implemented with immediate cost-savings. Typically, municipal audits are provided by local utilities or ESCOs on a contingency basis, requiring no capital investment. Audits are paid for through the calculated energy-savings of the retrofits. The Team encouraged municipalities to obtain such audits and offered the services of Cameron Engineering to review the recommended energy-efficient measures. Several completed audits are expected later in 2013.

The Climate Smart Communities Team offered individual assistance to communities, with an approach tailored to their particular needs or goals. At the same time, by meeting with many communities across the region, each was made aware of the others' successes and opportunities for cooperative initiatives. For example, after meeting with the Village of Lynbrook, the Team was able to share the village's experience with LED retrofits of street and outdoor lighting. The village provided all of the technical and financial research that led them to the selected LED technology. Perhaps more importantly, they shared their experience with the Long Island Power Authority (LIPA) adjusting billing rate schedules to capture the cost-savings provided by their retrofits. Other municipalities were largely unaware of this billing issue. For Lynbrook, their retrofits and work with LIPA have resulted in cost-savings of approximately $130,000 annually.

The Team also provided assistance to communities looking to reduce costs through energy-efficient projects. With the assistance of the CSC team, the Town of Southold applied for and received 75% rebates for office equipment and LED lights purchased under NYSERDA's appliance rebate grant program. The Team has sent almost weekly notifications to Long Island municipalities providing information about grants available through NYSERDA, DEC, FEMA, EPA, LIPA/National Grid, and other organizations.

6.2. Facilitate Local Climate Action Planning

The Team utilized the regional database of climate and energy-efficient actions to develop a climate action plan template for use by local municipalities. With 119 municipalities on Long Island, including many small villages, these small local governments typically do not have the staff to prepare a complete climate action plan. To assist with this effort, the Team developed and refined a climate action plan template that provides the organizational framework for the plan as well as a complete list of climate actions for each sector within the plan. The Team included past actions, present initiatives and potential future actions to assist with the process. It also allows municipalities to discuss past efforts and the challenges and opportunities associated with these efforts.

The plan template is broken down by the following sectors: municipal facilities and operations (including fleets and exterior lighting), residential initiatives, commercial/ industrial initiatives, waste (including solid waste, wastewater and organic waste), transportation, and adaptation initiatives (including sea level rise adaptation and emergency preparedness). The climate action plan template also includes the municipality's GHG inventory, using the template developed by the NYS GHG Protocol Working Group.

The Team worked extensively with the Suffolk County CSC Task Force and the towns of Southampton and East Hampton on the development of draft climate action plans. There is a strong focus on completing the Suffolk County climate action plan, as it is the second-largest county in the state in terms of land area and the fourth-largest county in the state in terms of population. Completion of the Suffolk County plan will establish a regional precedent and aid the other municipalities in the completion of their own climate action plans. Since the County does not have regulatory authority over land use, zoning and building codes, the County plan will be designed to complement future city, town and village-level plans. As a result, the County plan will serve as a key visioning and guidance document as opposed to a prescriptive land use and zoning plan.

7. Identify and Support Anchor Projects

One of the more exciting aspects of the Climate Smart Communities program has been the opportunity to discuss innovative concepts for climate smart anchor projects. At each meeting, municipalities were eager to share several ideas for capital projects that would lower GHG emissions or prepare for climate change and have a lasting impact on the community. The recently announced Consolidated Funding Application includes Cleaner, Greener Communities Phase II funding for innovative sustainability projects focused on energy-efficiency and climate adaptation. While a number of ideas were discussed during meetings, the Team encouraged several Climate Smart Communities to apply that had projects that would likely qualify for implementation funding.

One such project has been spearheaded by Mayor David Nyce of the Village of Greenport. The village wishes to develop a facility that would generate two to four megawatts of renewable energy. The Greenport 'Eco Energy Park' would be located on an 8.7-acre village-owned parcel at Clark's Beach in the Town of Southold. Wind and solar installations would provide renewable energy to supplement the five-megawatts of upstate hydroelectric power currently powering the village. During peak summer months, electrical demand in the village exceeds the five megawatts of hydroelectric power and the village must purchase power through NYPA on the open market (from fossil fuel sources) to maintain electrical service. On-site renewable power generation would eliminate the need to purchase this additional power, resulting in significant cost-savings and emissions reductions. As an example, in July 2012, overage accounted for 27.8% of power used but nearly 80% of costs. The site would also be developed as a public park, educational facility, conference center, and demonstration site for a range of sustainable and green infrastructure practices. The site would also address stormwater management and wastewater treatment by re-establishing local wetlands and other forms of green infrastructure. Greenport is unique among Long Island communities, in part due to its isolated geographic location but also due to the fact that it is not a LIPA customer, granting it additional flexibility in terms of the potential for renewable energy projects.

In early April, the Team met with the East End Transportation Commission (EETC) to explore the feasibility of group purchasing agreements for municipal alternative fuel vehicles and filling/charging stations. The Team suggested the formation of an East End Alternative Fuel Vehicle Consortium to increase their purchasing power and make their fleet needs more attractive to vendors. Such a consortium could also develop a plan for strategically locating fueling and charging stations to encourage wider participation in the use of electric and CNG

cars and trucks. The EETC continues to meet and further discussion of the initiative is anticipated.

On western Long Island, the Town of North Hempstead is planning to move forward with a town-wide fueling and charging station initiative. The initiative would place alternative fueling (CNG and biodiesel) and electric vehicle charging stations at several strategic locations throughout the Town. The Town is currently constructing a CNG fueling station at its Highway Department facility in New Hyde Park but plans to develop additional stations, roughly located at the four "corners" of the Town. Intermunicipal cooperation is the driving force behind the project. It would serve the Town's incorporated villages (31), school districts (13) and special districts (more than 50). This level of intermunicipal participation greatly improves economies of scale for alternative fuels. Fuel providers can offer better contract rates as usage will be higher and more predictable. Perhaps most importantly, the project will provide significant public health benefits. CNG buses and trucks would reduce diesel particulates throughout the Town, which is particularly important for school children who are exposed to diesel buses daily and are more susceptible to respiratory illnesses.

In western Long Island, the Village of Great Neck Plaza proposed a large scale project that would encompass several private properties. The village is the densest community in the state of New York with respect to household density. It is a highly walkable village, with easy access to transit and many restaurants and shops. Jean Celender, the mayor of Great Neck Plaza, raised the possibility of installing solar photovoltaic arrays on the roofs of many of the village's apartment complexes. In particular, the mayor identified one apartment owner with 30 buildings in the village, providing an opportunity for large-scale renewable energy generation. The village is interested in assistance with its codes to ensure that such a project would be feasible. It would encourage the property owner and others to participate in such a large scale renewable energy project.

8. Provide Education and Training

In an effort to improve the efficiency of municipal fleets across the region, the Team has worked closely with several regionally-based organizations, including Greater Long Island Clean Cities Coalition (GLICCC) and the Long Island Electric Auto Association (LIEAA). On April 25th and 26th, GLICCC and the CSC Team hosted two alternative fuel vehicle workshops – one in Nassau County at the Town of North Hempstead's Yes We Can LEED Platinum Community Center and one in Suffolk County at the Suffolk County Community College Culinary Arts Center in Riverhead. The workshops brought together industry experts, fleet managers, and municipal officials to learn about new technologies, review case studies, and discuss opportunities for action.

The Team has attended several local events related to climate change and strategies for adaptation to promote the CSC program. In January, the Town of Babylon hosted a public hearing on climate change impacts and rebuilding efforts in the wake of Superstorm Sandy. It specifically focused on adaptation and mitigation strategies for rebuilding Long Island.

The Team also met with Town of Brookhaven staff and the Town's Conservation Advisory Committee to discuss incorporating climate change adaptation strategies and renewable energy generation measures into the Town's comprehensive plan update. The Town is seeking to implement a variety of climate actions, including the development of a 60 MW

renewable energy park. The CSC Team has also met regularly with the Suffolk County CSC Task Force to bring new ideas to the county.

Cameron Engineering coordinated the development of a webinar on the National Flood Insurance Program (NFIP) Community Rating System (CRS), broadcast on June 6, 2013. The CRS provides discounts to NFIP policyholders based on the flood mitigation actions undertaken by the municipality. The webinar is an educational and training tool for communities wishing to pursue insurance discounts through the CRS. Given the effects of Sandy on Long Island, as well as the planned changes to the NFIP, many communities are eager to enroll in the CRS program.

9. Reporting

The Long Island Team provided regular progress reports to NYSERDA highlighting achievements and work completed during each month of the program. Moving forward, the Team intends to use the Long Island CSC website to promote the experiences and accomplishments of CSCs in the region.