



New York Climate Smart Communities

Town of Huntington - Climate Action Plan

June 2015



**Climate Smart
Communities**

HUNTINGTON TOWN BOARD**Frank P. Petrone, Supervisor****Mark A. Cuthbertson, Councilman****Susan A. Berland, Councilwoman****Eugene Cook, Councilman****Tracey A. Edwards, Councilwoman****ACKNOWLEDGEMENT**

The Town of Huntington Climate Smart Community Committee includes the following members:

- Terese M. Kinsley, PE, LEED AP BD+C, Chief Sustainability Officer
- Jacob Goldman, Chairman, TOH ACEERS
- Billii Roberti, Recording Secretary, TOH ACEERS
- Jay Best, member, TOH ACEERS
- Peter Hellermann, member, TOH ACEERS
- Pete Kelly, member, TOH ACEERS
- Ronald Lanner, member, TOH ACEERS
- Anthony Musso, member, TOH ACEERS
- Pete Smith, member, TOH ACEERS
- Gene Stern, member, TOH ACEERS
- Eve Tenzler, member, TOH ACEERS
- Marilyn Urso, member, TOH ACEERS

The Town's *Advisory Committee on Energy Efficiency, Renewables, and Sustainability* (ACEERS) functions as Huntington's Climate Smart Communities (CSC) Task Force. The CSC Task Force also acknowledges the contributions of Cameron Engineering & Associate, LLC, and the Sustainability Institute at Molloy College for assisting with the development of this plan in the course of performing their work as CSC Coordinators contracted for and sponsored by the New York State Energy Research and Development Authority (NYSERDA). New York State Climate Smart Communities is a free and voluntary program of the departments of Environmental Conservation, Health, State, and Transportation; the Energy Research and Development Authority; and the Public Service Commission.

NOTICE

New York State Climate Smart Communities Program is sponsored by the New York State Energy Research and Development Authority (NYSERDA). The opinions expressed in this report do not necessarily reflect those of NYSERDA or the State of New York, and reference to any specific product, service, process, or method does not constitute an implied or expressed recommendation or endorsement of it. Further, NYSERDA, the State of New York, and their contractors make no warranties or representations, expressed or implied, as to the fitness for particular purpose or merchantability of any product, apparatus, or service, or the usefulness, completeness, or accuracy of any processes, methods, or other information contained, described, disclosed, or referred to in this report. NYSERDA,

the State of New York, and the contractors make no representation that the use of any product, apparatus, process, method, or other information will not infringe privately owned rights and will assume no liability for any loss, injury, or damage resulting from, or occurring in connection with, the use of information contained, described, disclosed, or referred to in this report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
Summary of Initiatives.	1
1 INTRODUCTION.....	2
1.1 Climate Action Plan Summary	2
Existing Plans, Studies and Reports	2
Pledges/Memberships/Associations.....	2
Renewable Energy Task Force 2010 Draft Energy Master Plan	2
Climate Smart Community Task Force	3
Greenhouse Gas Inventory	3
Greenhouse Gas Emissions Reductions Targets	4
Climate Smart Community Certification	5
2 MUNICIPAL FACILITIES AND OPERATIONS	7
2.1 Buildings	7
2.1.1 Past Actions and Achievements	8
2.1.2 Projects and Policies Currently Under Consideration, Development or Implementation ...	8
2.1.3 Potential Future Actions and Initiatives	9
2.2 Renewables	14
2.2.1 Past Actions and Achievements	14
2.2.2 Projects and Policies Currently Under Consideration, Development or Implementation .	15
2.2.3 Potential Future Actions and Initiatives	15
2.3 Exterior Lighting	17
2.3.1 Past Actions and Achievements	17
2.3.2 Projects and Policies Currently Under Consideration, Development or Implementation .	17
2.3.3 Potential Future Actions and Initiatives	17
2.4 Fleet.....	18
2.4.1 Past Actions and Achievements	18
2.4.2 Projects and Policies Currently Under Consideration, Development or Implementation .	18
2.4.3 Potential Future Actions and Initiatives	19
2.5 Solid Waste, Wastewater and Stormwater	20
2.5.1 Past Actions and Achievements	20
2.5.2 Projects and Policies Currently Under Consideration, Development or Implementation .	20
2.5.3 Potential Future Actions and Initiatives	22

2.6 Operations.....	23
2.6.1 Past Actions and Achievements	23
2.6.2 Projects and Policies Currently Under Consideration, Development or Implementation .	24
2.6.3 Potential Future Actions and Initiatives	24
3 COMMUNITY-WIDE POLICIES AND INITIATIVES.....	26
3.1 Residential Buildings	26
3.1.1 Laws, Codes and Regulations in Effect	26
3.1.2 Potential Future Actions and Initiatives	26
3.2 Commercial and Industrial Buildings.....	29
3.2.1 Laws, Codes and Regulations in Effect	29
3.2.2 Potential Future Actions and Initiatives	29
3.3 Community-Wide Policies and Initiatives to Promote Renewable Energy	31
3.3.1 Laws, Codes and Regulations in Effect	31
3.3.2 Potential Future Actions and Initiatives	31
3.4 Transportation.....	32
3.4.1 Laws, Codes and Regulations in Effect	32
3.4.2 Potential Future Actions and Initiatives	32
3.5 Educational Initiatives	36
3.5.1 Current Programs and Policies	36
3.5.2 Potential Future Actions and Initiatives	36
3.6 Land Management	39
3.6.1 Laws, Codes and Regulations in Effect	39
3.6.2 Potential Future Actions and Initiatives	39
4 CLIMATE CHANGE, PLANNING AND ADAPTATION	41
4.1 Climate Change in New York	41
4.1.1 Observed Effects of Climate Change	41
4.1.2 Projected Climate Changes.....	41
4.1.3 Projected Effects of Climate Change	41
4.1.4 Hazard Mitigation Grant Program	42
4.1.5 New York Rising Community Reconstruction Program	42
4.2 Community Self-Assessment and Planning.....	43
4.2.1 Town Initiatives	43
4.2.2 Current Programs and Policies	43

4.2.3 Potential Future Actions and Initiatives	44
4.3 Resilience Strategies.....	49
4.3.1 Community Planning and Capacity Building.....	49
4.3.2 Health and Social Services	50
4.3.3 Housing.....	50
4.3.4 Infrastructure	50
4.3.5 Natural and Cultural Resources.....	50
APPENDICES.....	51

APPENDICES

- Appendix A: Possible and Anticipated CSC Certification Points
- Appendix B: Pending Town of Huntington Projects
- Appendix C: Town of Huntington Case Studies

EXECUTIVE SUMMARY

This Climate Action Plan (CAP) for the Town of Huntington was produced as part of the New York State Climate Smart Communities (CSC) program. The Town adopted the Climate Smart Communities pledge by resolution on July 24 2012. The plan was developed by the Town's *Advisory Committee on Energy Efficiency, Renewables, and Sustainability* (ACEERS), which functions as the Town's CSC Committee. As subsequent steps are completed this section will be updated.

This CAP is organized into three sections: *Municipal Facilities and Operations*; *Community-wide Policies and Initiatives*; and *Climate Change Adaptation and Resiliency*. Section One provides information on facilities and operations over which the Town has direct control and describe *Past Actions and Achievements*; *Projects and Policies Currently Under Consideration, Development or Implementation*; and *Potential Future Actions and Initiatives*. Section Two looks at a number of items that the Town can affect by policy and describes *Laws, Codes, and Regulations in Effect*; *Current Programs and Policies*; and *Programs and Policies under Consideration or Planning for Potential Future Action*. Section Three, *Climate Change Planning and Adaptation*, provides an overview of the Town's plans to adapt to the effects of climate change including rising sea level, more intense rainfall, higher temperatures, and more frequent droughts.

Summary of Initiatives.

- Established Renewable Energy Task Force, Later Upgraded to an Advisory Committee on Energy Efficiency, Renewables & Sustainability (ACEERS)
- Professional Chief Sustainability Officer Hired
- Long Range Energy Efficiency Plan
- Energy Analysis & Long Range Energy Efficiency Plan
- Energy Star® and LEED Upgrades for Town Hall
- Street Lighting Upgrades to High Efficiency Lighting Fixtures
- Sewage Treatment Plant Upgrades
- Town Fleet Upgrades to Hybrid Trucks, Buses and Compressed Natural Gas Sanitation Vehicles
- Town Website Upgrades to Communicate Successes and Promote Green Initiatives to Residents
- Residential Energy Efficiency Retrofit Program
- Solar Photovoltaic Electric Generating System Installation on Town Hall Rooftop
- Solar Electric Vehicle (EV) Charging Station Installation

1 INTRODUCTION

1.1 Climate Action Plan Summary

This Climate Action Plan is prepared in accordance with the commitment made by the Town of Huntington when they adopted the Climate Smart Communities pledge. Huntington has been aggressively pursuing a number of energy and sustainability initiatives for several years.

Existing Plans, Studies and Reports

- Adopted a Clean Energy Action Plan (2005).
- Town of Huntington Master Plan.
- Report on financial savings from clean energy efforts.
- Renewable Energy Task Force 2010 Draft Energy Master Plan

Pledges/Memberships/Associations

- Climate Smart Communities
- USDOE Better Buildings Challenge
- LI Clean Energy Leadership Task Force
- LI Green Homes Consortium
- NYSERDA's Cleaner Greener Communities
- Sustainability Institute at Molloy College
- Vision LI
- Suffolk County Planning Commission Energy & Environment Task Force
- Greater Long Island Clean Cities Coalition
- Cool Cities

Renewable Energy Task Force 2010 Draft Energy Master Plan

The Renewable Energy Task Force (RETF) was established to promote renewable energy and sustainable development in the Town of Huntington and to recommend specific projects, actions, plans, and legislation to the Supervisor and Town Board that will allow the Town to address sustainability issues today and in the future. The charge of the RETF is to work with Town staff to develop policies and projects regarding sustainable practices, renewable energy, and progressive legislation on climate change, greenhouse gas emissions and developing technologies. The RETF consists of eleven members of the Huntington community who have special expertise and/or interest in "Green" issues, meriting their appointment by the Town Board.

The Huntington RETF developed the Draft Energy Master Plan in 2010 (the Plan). It was intended to be a living document that could be updated and expanded as advances are made in the science and technology of energy sustainability and through the suggestions, feedback of Town residents, and the Town's elected representatives. These recommendations are included in this document either verbatim or as subsequently modified at subsequent meetings of the RETF.

Climate Smart Community Task Force

In 2014, the Town Board changed by resolution the RETF name to reflect its expanded advisory role in the Town. It is now Huntington's *Advisory Committee on Energy Efficiency, Renewables, and Sustainability* or ACEERS. With its expanded role, ACEERS will also function as the Town's Climate Smart Community Task Force.

Greenhouse Gas Inventory

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 results of the inventory as a report and [interactive website](#) in 2013. The *Long Island Carbon Footprint Project* provides an inventory and analysis for 2010 and comparisons to 2005 emissions. The website also hosts an interactive map that provides emissions data by sector, source, region, and municipality. Inventory methodology was based in large part on the protocols developed by the New York State (NYS) GHG Protocol Working Group that was administered by the New York State Energy Research and Development Authority (NYSERDA).

The LI GHG inventory includes the following sources:

- Fuel use (oil and natural gas) and electricity
- Transportation
- Industrial processes
- Agriculture
- Waste (wastewater, stormwater 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 –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. Other data were from the following sources:

- PSEG-Long Island 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 municipality, but includes vehicles traveling through

The NYIT project documented a significant reduction in emissions on Long Island from 2005-2010. As a region, Long Island reduced its overall emissions by 9.75 percent from 2005 to 2010. The following breakdown of GHG emissions for the Town of Huntington was compiled by NYIT as part of their comprehensive GHG emissions inventory for Long Island’s Nassau and Suffolk counties:

<i>Town of Huntington GHG Emissions: 2005 - 2010 (MT CO₂e)</i>		
Source	2005	2010
Electricity	1,059,773	1,047,288
Natural Gas	410,096	417,766
Fuel Oil	586,189	428,756
Gasoline	928,376	707,914
Diesel	126,104	134,521
Total	3,110,538	2,736,245

The NYS GHG Protocol Working Group also developed a template for future emissions tracking by municipalities. That template was populated with local data for each sector from the spreadsheets developed by NYIT. The template contains the raw data, calculations, emissions factors, and methodology used for the *Long Island Carbon Footprint Project*. The template will be used for tracking of future Town of Huntington GHG emissions.

Greenhouse Gas Emissions Reductions Targets

This Climate Action Plan seeks to establish policies and identify strategies that will reduce greenhouse gas (GHG) emissions to levels consistent with mitigating the worst effects of climate change. Scientific consensus suggests that an 80 percent reduction in GHG emissions under 1990 levels by 2050 is necessary to achieve that result. One goal of the 2014 Draft New York State Energy Plan is “to reduce the intensity of its carbon emissions from the energy sector by 50% by 2030 (measured in CO₂ emissions per Gross State Product from 2010 baseline), putting New York on a pathway to achieve an 80% reduction in total emissions by 2050.”¹

Government Operations Goals

The Town of Huntington has direct control over a number of buildings and other facilities and a fleet of vehicles. Investment in and management of these assets can make significant changes in energy use and GHG emissions. A target of 20 percent reduction in energy use intensity by 2020 from 2005 baseline government operations represents a meaningful but achievable goal for the Town. This target matches

¹ 2014 Draft New York State Energy Plan, <http://viewer.epaperflip.com/Viewer.aspx?docid=3b57bb73-4134-4739-ac2d-a2b300fff076#?page=28>, pp.28-9.

that proposed in New York State Executive Order 88, which calls for a 20 percent reduction in energy use intensity in State owned and operated buildings by 2020.

Community-wide Goals

As a Town, Huntington government has direct control of the policies that impact community emissions, including zoning authority/control over land use. This level of authority allows the Town to pursue emissions reductions for the built environment and transportation sector. These programs and policies are highlighted in Section 3 of this plan.

There is reason to be somewhat optimistic concerning community-wide reductions in GHG emissions. The Long Island Carbon Footprint Project found that overall emissions in the Town of Huntington dropped from 3,110,538 metric tons CO₂e in 2005 to 2,736,245 metric tons CO₂e in 2010, a reduction of about 12 percent. Analysis by the Sustainability Institute at Molloy College indicates that already planned changes to the PSEG-Long Island electric generation fleet on Long Island, along with projected reductions from energy efficiency programs and investments in renewable energy would reduce the carbon emitted by electric generation by an amount approximately equal to 10 percent of Long Island's overall GHG emissions in 2010.

Vehicle related emissions make up about 31 percent of Long Island's total GHG emissions. Emissions from on-road vehicles dropped from 12,960,118 MT CO₂e in 2005 to 10,854,420 in 2010, a drop of 16.25 percent, even though vehicle miles traveled increased slightly during that period. This is believed to be due primarily to consumers choosing more fuel-efficient vehicles. It is anticipated that increases in federal fuel efficiency standards for new vehicles (new Corporate Average Fuel Economy standard of 54.5 mpg by 2025) will have a significant effect on reducing GHG emissions in the Town of Huntington, as these more efficient vehicles displace the existing fleet.

With this in mind, this Climate Action Plan sets a target of 20 percent reduction in community-wide vehicular emissions below the 2005 baseline by 2020.

Climate Smart Community Certification

The Town of Huntington is participating in the recently-launched Climate Smart Communities (CSC) certification process to document the efforts being made by the Town. The CSC certification program provides municipalities a unique platform to share and promote their climate action achievements. It is designed to align with the ten CSC pledge elements, which were adopted by the Huntington Town Board on July 12, 2012 (Resolution #2012-348, Schedule A).

The certification program awards communities using a point-based rating system based on four levels: Certified (150 points), Bronze (250 points), Silver (350 points), and Gold (450 points). There are over 120 climate actions that generate points towards a community's CSC certification. Out of these 120 actions, 13 have been designated as "priority" actions, which are critical activities that are required across all levels of certification.

The chart below provides a summary of the possible certification points based on these ten pledge elements and the points that are anticipated for the Town's actions as described in this Climate Action

Plan. The number of points that will ultimately be approved for the Town will depend on how well the Town's actions correspond to the certification program's detailed requirements. It appears from the chart that the Town could at a minimum qualify for Silver Certification. The full list of possible and anticipated certification points is found in Appendix A.

Table 1: Summary of CSC Certification Points by Pledge Element

Pledge Element	Possible Points	Percent of Total Points	Anticipated Points	Awarded Points
Pledge Element 1: Pledge to Combat Climate Change by Becoming a Climate Smart Community	31	4%	31	-
Pledge Element 2: Set Goals, Inventory Emissions, Develop a Plan	40	5%	32	-
Pledge Element 3: Decrease Energy Demand from Local Government Operations	138	16%	73	-
Pledge Element 4: Encourage Renewable Energy for Local Government Operations	62	7%	23	-
Pledge Element 5: Realize Benefits of Recycling and Other Climate Smart Solid Waste Management Practices	49	6%	21	-
Pledge Element 6: Reduce Greenhouse Gas Emissions Through Use of Climate-Smart Land Use Tools	109	12%	57	-
Pledge Element 7: Plan for Adaptation to Unavoidable Climate Change	117	13%	41	-
Pledge Element 8: Support a Green Innovation Economy	56	6%	16	-
Pledge Element 9: Inform and Inspire the Public	18	2%	18	-
Pledge Element 10: Commit to an Evolving Process	11	1%	7	-
Innovation	15	2%	15	-
Performance Bonus	230	26%	115	-
TOTAL	876	100%	449	-

2 MUNICIPAL FACILITIES AND OPERATIONS

2.1 Buildings

Buildings are one of the largest consumers of natural resources. Buildings consume 72% of the electricity load in the U.S. and account for 39% of all CO₂ emissions in the U.S. (more than any other sector: buildings, transportation and industrial). Most of the emissions come from the combustion of fossil fuels to provide on-site heating and for electricity generation for cooling, lighting, and running appliances and electrical equipment. By transforming the built environment to be more energy-efficient and climate friendly, the building sector can play a major role in reducing the threat of climate change.²

Reducing energy consumption through energy efficiency improvements and conservation measures in existing buildings is one of the most cost effective ways to reduce greenhouse gas emissions. At the same time, this work will increase economic activity by creating local jobs and reducing municipal energy costs for taxpayers.

The 2010 Draft Energy Master Plan (the Plan) proposed that the Town reduce the carbon footprint and energy use in its facilities by 20% and 50% respectively. Specific implementation actions are discussed in the following sections.

The Town of Huntington has 360 PSEG-Long Island accounts. It would like to be able to manage all accounts with Utility Management services and New York Independent System Operator (NYISO) Demand Response Program to promote the following benefits to the Town:

- Better organize utility billing data
- Track Expenditures
- Better manage cash flow
- Insure better scope of energy efficiency improvements
- Document and verify resulting Energy Savings
- Provide the hardware (i.e. smart meters) for the Demand Response Program and Interval Metering at the largest Town facilities which consists of 80% of the Town building's energy consumption.

The Town has benchmarked approximately 120 Town properties on EPA's Portfolio Manager as part of the USDOE's Better Buildings Challenge. The Town has also used the USDOE's Energy Efficiency and Conservation Block Grant to upgrade Town Hall. In addition, the Town's Wastewater Treatment Plant has had energy efficiency retrofits and upgrades that are ongoing.

The Town of Huntington has consistently been an early adopter of many of these energy efficient technologies, which has resulted in significant returns in terms of energy and cost savings.

² USGBC, *Buildings and Climate Change*, PDF, <http://www.usgbc.org/redirect.php?DocumentID=5033>



2.1.1 Past Actions and Achievements

- Town Hall
 - Conducted LEED Feasibility Study and Analysis.
 - Implementation of energy conservation measures.
 - Upgraded HVAC and lighting.
 - Installed Building Management System and Variable Frequency Drives (VFDs) on all HVAC Air Handlers.
 - Obtained EPA's Energy Star Label Rating in 2010.
 - Completed installation of a 28kW Solar Photovoltaic electric generating system in March, 2011
- Town Wastewater Treatment Plant
 - Upgraded to energy efficient lighting.
 - Retrofitted with an HVAC system upgrade.
- Town's Dix Hills Park Ice Rink lighting upgrade.
- Began a Long Range Energy Efficiency Plan, tracking energy use in all of its facilities using the [USEPA Portfolio Manager](#) bench-marking tool. The ten (10) facility energy auditing of its major facilities following Town Hall and the wastewater treatment plant is the start of a Town-wide project to audit all Town facilities and buildings. Energy assessments, benchmarking and recommendations have been done at the following Town facilities:
 - Boxer Court Maintenance Facility
 - Cavanagh Maintenance Facility
 - Crab Meadow Golf Course
 - Dix Hills Park
 - East Northport Garage
 - Elwood Administration Highway Department
 - Flanagan Senior Center
 - Hart Bus
 - LIRR North Parking Garage
 - Oakwood Highway Facility

2.1.2 Projects and Policies Currently Under Consideration, Development or Implementation

- Pursuing lighting and HVAC upgrades in Town facilities
- Pursuing use of geothermal technology at Dix Hills Ice Rink
- Pursuing LEED Certification for new business incubator
- Pursuing online building portfolio management
- Pursuing Huntington Armory renovation project:
 - Continue with budgeting for an energy efficient renovation including; a geothermal HVAC system, Solar PV and a food green roof, to convert the former New York State Armory into the James D. Conte Community Center located at 100 East 5th Street,



Huntington Station which is classified as a New York State Brownfields Opportunity Study Area, Environmental Justice Area, and a Low moderate Income Census Tract area

- Continue Long Range Energy Efficiency Plan to audit all Town facilities and buildings

2.1.3 Potential Future Actions and Initiatives

The Draft Energy Master Plan proposed that the Town reduce the carbon footprint and energy use in facilities. As part of the Town's potential future actions and initiatives four implementation actions were recommended.

- Establish a baseline on Town of Huntington facilities,
- Utilize baseline analysis to target improvements on Town of Huntington facilities,
- Adjust the Town's energy codes to reflect the importance of sustainable design, and
- Communicate successes

Establish Baseline

The first implementation action was the establishment of an energy utilization baseline for Town-owned facilities. The Plan recommended starting with Town Hall, followed by major Town facilities and finally all Town facilities. It was recommended that the baseline include an inventory of all energy utilizing equipment, operating hours of such equipment, estimate of energy used by identified equipment as well as carbon footprint and then correlated to energy bills.

Target Improvements

The second implementation action was to *utilize baseline analysis to target improvements for Town facilities*. Once a facility has been audited and a baseline created, conservation and sustainability measures should be enacted that target reductions in carbon emissions and energy use. The Plan sought to establish goals of 20 percent reductions in carbon emissions and 50 percent reductions in energy use. Budgeting for conservation measures was recommended to be part of the Town's annual budget process.

Adjust the Town's Energy Codes to Reflect the Importance of Sustainable Design

The third implementation action was to incorporate additional energy requirements into the Town's Energy Codes. It was recommended to add the requirement for new commercial buildings and major renovations to commercial buildings undertaken in the Town of Huntington to require LEED certification through the USGBC. This requirement was expected to be required of Town owned and operated facilities as well.

It was also recommended that the codes require a minimum of 5 LEED points be achieved in LEED credit EA 1 (utilizing version 3 of the LEED standards. Set efficiency standards for the installation of new HVAC equipment to be 5% better than ASHRAE 90.1, 2007 to assist in achieving the 5 LEED points in EA 1).

In addition, the following was recommended: providing education to the HVAC industry of these new standards; publishing a list of efficiencies for common types of HVAC equipment; developing an Inspection (Town) protocol; and removing hurdles to permitting wind and solar structures with Town



zoning code. (Initiate a discussion with “regulatory” agencies/departments to create clear, “user friendly” requirements for solar, geothermal heat pumps and wind).

Communicate Successes

The final implementation action to meet the Plan’s goal was to *communicate successes*. The Master Plan suggested that as the Town and its residences and businesses achieve success in this goal it is imperative to publicize milestones to increase awareness and accelerate the achievement of milestones.

Other actions under consideration by the Town include the following:

- Continue with budgeting for conservation and sustainability measures as part of the Town’s annual budget process.
- Continue with the establishment of energy utilization baselines for all Town owned facilities.
- Continue with the establishment of goals for the Town for reductions in carbon emissions and energy use.
- Continue with amendments to the Town’s energy codes (and requirements for Town-owned and operated facilities) to reflect the importance of Sustainable Design and Practices.
- Consider a policy requiring compliance with LEED principles, although not certification, for new construction and major renovations of Town buildings, and for projects “built to suit” for long-term lease.
- Consider a policy for the Town to give preference to space that is certified under Energy Star, LEED, or equivalent sustainability constructions or standards for Town leases.
- Consider a policy to give preference to projects that will have a major impact on achieving the Town’s sustainability goals.
- Consider ASHRAE compliant Energy Audits for all facilities starting with facilities that use the most energy.
- Consider a policy requiring green roofs or cool roofs for new construction or renovation of facilities with flat roofs.
- Consider building envelope projects like improved insulation, infiltration sealing, window shading and new windows.
- Consider a policy that establishes the requirement/use goals of renewables (in conjunction with Section 1.2) for renovations, rehabilitations and new construction of Town Facilities.
 - Consider where present installation of renewable technology is deemed inappropriate, that, at a minimum, items such as conduits, wiring or piping for future renewable installations shall be included as part of the renovations and rehabilitations being undertaken.
- Consider a policy requiring any municipal facility replacements, renovations or new construction to have energy efficient building Heating, Ventilation and Air Conditioning (HVAC) systems be evaluated/installed:
 - Require an evaluation of and conversion to a more sustainable energy source as part of replacement/renovation process.
 - HVAC equipment



- Use of independently certified energy saving products (i.e. Energy Star)
 - Evaluation of rebate eligible equipment
 - Percentage performance increase in efficiency (i.e. 20%)
 - Evaluation of full Life Cycle Cost
- HVAC distribution
 - Evaluation of full Life Cycle Cost
- HVAC controls
 - Programmable thermostats with setback controls
 - Building management (BMS) systems
 - Variable Frequency drives on all motors and compressors
 - CO₂ sensors
 - Economizers
- Consider a policy requiring any municipal facility replacements, renovations or new construction to have energy efficient lighting and lighting systems be evaluated/installed:
 - Lighting in general
 - Use of independently certified energy saving products (i.e. Energy Star)
 - Evaluation of rebate eligible equipment
 - Percentage performance increase in efficiency (i.e. 20%)
 - Evaluation of full Life Cycle Cost
 - Lighting Devices
 - LED
 - Induction
 - Compact Fluorescent
 - Any additional New efficient lighting technologies
 - Lighting Controls
 - Occupancy sensors
 - Timers
 - Daylighting systems/controls
- Consider a policy requiring any municipal facility replacements, renovations or new construction to have energy or sustainable resource efficient electrical/plumbing furnishings and equipment be evaluated/installed:
 - In general:
 - Use of independently certified energy saving products (i.e. Energy Star)
 - Evaluation of rebate eligible equipment
 - Percentage performance increase in efficiency (i.e. 20%)
 - Evaluation of full Life Cycle Cost
 - Examples
 - Hand dryers
 - Variable Frequency drives (pumps, motors)
 - Appliances



- Vending machines
 - Copiers
 - Computers
 - Toilets
 - Urinals
 - Faucets
 - Showers
- Consider a policy when designing any new Town facility parking lots (and any planned renovations of existing parking lots) to require the incorporation of renewable energy systems.
- Consider a policy to require new separate metering (and/or sub metering) on new systems being installed in Town Facilities.
- Consider a policy to require new separate metering (and/or sub metering) on existing systems in Town Facilities.
- Consider a policy to require cost/benefit analysis based on Life Cycle Costs for replacements of construction items be conducted (not just cheapest items, to avoid premature replacements or reduced sustainable features from being employed).
- Consider a policy to require use of independently certified energy saving products (i.e. Energy Star) in new and existing Town Facilities. If a rating is unavailable, consider products in the top 25% of energy efficiency for appliance, equipment of its type or an equivalent documented sustainability benefit.
- Consider a policy to require the use of independently certified water efficient products (i.e. WaterSense®) in new and existing Town Facilities. If unavailable, consider products in the top 25% of water efficiency for equipment or device or that provides an equivalent documented sustainability benefit.
- Consider a policy to evaluate building products that are known to enhance the health and wellbeing of Town employees.
- Consider a policy to require 70% of all Town facilities' building construction, remodeling and demolition waste be recycled.
- Consider a policy to require a reduction in all other Town waste that is produced and not recycled.
- Consider a policy to reduce (and eventually eliminate) use of potable water for all Town facility building-related landscape irrigation.
- Consider a policy to encourage renovations rather than new construction for Town facilities.
- Consider a policy to require green building expertise in selection of professional consultants.
- Consider a policy to require a commissioning component for all projects with the commissioning requirements specifically being tailored to the size and complexity of the building/system to assure that the project needs have been met, systems perform efficiently and as intended, and that operators/users are properly trained.



- Implement web-based interface and dashboard of building automation systems to monitor and control all Town-owned buildings. This can be electronically linked to building drawings, equipment operation guides, and maintenance records
- Make municipal facilities available for third parties to install and test new or emergent technologies and systems
- Consider a policy to evaluate technologies that are known to enhance the productivity of Town employees



Buildings



2.2 Renewables

Renewable energy technologies are clean sources of energy that have a lower environmental impact than conventional energy technologies. Most renewable energy investments are spent on materials and workmanship to build and maintain facilities, rather than on energy imports. This helps to create local jobs, lower greenhouse gas emissions, and reduce reliance on foreign sources of energy. As an example, the solar PV industry creates 22.4 jobs per megawatt while natural gas in comparison creates 1.1³ jobs.

New York State has a distinguished history of renewable energy leadership. The goal of using renewable energy sources is to reduce greenhouse gas (GHGs) emissions, improve energy security, and independence, reduce respiratory and other health impacts caused by GHGs and attract renewable resource generators, manufacturers, and installers to New York. The state has taken several steps to achieve these objectives.

In 2004, the Public Service Commission (PSC) adopted a Renewable Portfolio Standard setting a goal of increasing the proportion of renewable electricity used by New York consumers from the 2004 level of 19.3% to at least 25% by 2013. In 2014, the PSC commenced its *Reforming the Energy Vision (REV)*⁴ initiative to reform New York State's energy industry and regulatory practices.

In 2009, the NYS Department of Environmental Conservation (DEC) issued its *Executive Order No. 24* for NYS reduce its GHG emissions 80% by 2050.⁵ While in 2014 the New York State Energy Research and Development Authority (NYSERDA) issued its first draft of its *Clean Energy Fund (CEF) Proposal*⁶. These initiatives all support the "80 by 50" goal of the DEC.

The Town of Huntington used 23,928,243 kWhs of electricity in 2010 at a cost of \$4,130,315.

2.2.1 Past Actions and Achievements

- 12.6 kW Solar PV used to power the Electric Vehicle (EV) Charging Station at LIRR Station in Huntington Station.
- 5 kW Rooftop PV on new Business Incubator.
- 28 kW PV system on the roof of Town Hall

³ EPA *Clean Energy Strategies for Local Governments On-site Renewable Energy Generation (2008)*. Figure 7.2.1. "Job Creation From Renewable Energy Projects per MW Capacity,"

http://www.epa.gov/statelocalclimate/documents/pdf/on-site_generation.pdf.

⁴ NYS *Public Service Commission Staff Report and Proposal, Reforming the Energy Vision*, <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={5A9BDBBD-1EB7-43BE-B751-0C1DAB53F2AA}>

⁵ Department of Environmental Conservation, *Executive Order No. 24 (2009)*, "Establishing a Goal to Reduce Greenhouse Gas Emissions Eighty Percent by the Year 2050 and Preparing a Climate Action Plan," <http://www.dec.ny.gov/energy/71394.html>.

⁶ New York State Energy Research and Development Authority *Clean Energy Fund Proposal*, http://www.energymarketers.com/Documents/NYSERDA_Clean_Energy_Bank_proposal.pdf.



2.2.2 Projects and Policies Currently Under Consideration, Development or Implementation

As part of the operations of the Town of Huntington's Wastewater Treatment Plant, the methane gas that is generated in the digesters is currently flared off. A new project would capture that methane gas and supplement it with a new natural gas line to run a new 65kW Micro Turbine for Combined Heat and Power (CHP). The electricity generated by the micro turbine would reduce the electrical load of the sewage treatment plant by approximately 550,000 KWh per year, and ease the electrical demand on the grid. In addition, the waste heat generated by the micro turbine would be used to heat the digesters which are currently heated by a boiler operating on fuel oil. Therefore, converting the boiler to natural gas will eliminate the annual fuel oil consumption of approximately 13,000 gallons per year. The boiler will only be used to supplement the waste heat from the micro turbine. The elimination of the methane gas emissions will eliminate average annual Greenhouse Gas emissions by approximately 5,000 Metric Tons of Carbon Dioxide Equivalent (MtCO₂e).

2.2.3 Potential Future Actions and Initiatives

The Plan recommended installation of solar PV capacity on every facility that can reasonably support it. It was suggested that the Town inventory facilities collecting the following data: location, square feet of southern exposed roof, roof pitch, age of roof, current electric demand, determination of clear line of sight to the southern sky, etc. Once this inventory has been taken, facilities can be ranked and prioritized. To achieve economies of scale, the Town should bid multiple installations together and/or use requirements contracts to promote efficiencies.

Noting that solar thermal is an economical way to heat water the Plan suggested its use in Town of Huntington facilities. Nearly all Town facilities have hot water needs that are currently being met by conventional electric, natural gas and oil sources. As these conventional systems come up for replacement, solar thermal systems should be used where solar systems can be installed.

Wind is a clean, non-fossil fuel source of energy. Wind parks are a fast-growing industry around the globe and are becoming cost competitive with fossil fuel sources. Currently, Huntington has a moratorium on wind turbines, while reviewing the efficacy of their use in largely built out suburban settings. As it considers, Huntington should study the feasibility of installing demonstration turbines at one or more of the larger properties in the Town's portfolio where acreage and the wind resource are adequate. The Plan recommended an analysis of Town properties for attributes conducive to wind power such as average sustained wind speed (ASWS), optimum height of ASWS, space required for tower(s), and available electrical demand. In addition to site selection, it was suggested that the Town conduct a public education and outreach program to focus attention on the potential benefits of wind power. The following types of locations were recommended for study as feasible wind power demonstration sites:

- Large Parks (e.g., Dix Hills, Crab Meadow)
- Town beaches
- Highway facilities



The Plan also addressed bio-gases, specifically methane recapture to supply power for the sewer treatment facility. The Federal government pre-qualified the following five companies for implementing Federal Biomass and Alternative Methane Fuels initiative. The Town can start the ball rolling by contacting pre-qualified vendors:

- Constellation Energy Source, Baltimore, MD
- DTE Biomass Energy, Inc., North Falmouth, MA
- Energy Systems Group, Evansville, IN
- Exelon Services Federal Group, Knoxville, TN
- Honeywell International, Phoenix, AZ

Other actions under consideration by the Town include the following:

- Explore the feasibility of geothermal heat pump systems at municipal facilities.
- Explore public-private partnerships to provide sites for new renewable technology projects.
- Explore educational partnerships and training programs.
- Seek renewable incentives from PSEG Long Island
- Seek funding for renewable energy technology projects through any NYS program that is deemed suitable.
- Consider purchasing Green Power through the EPA Green Power Purchase program.
- Evaluate existing requirements for renewable energy at Town facilities. (Prince George County, Maryland: requires the County to budget an additional 2 percent in construction costs for every building to pay for a renewable energy installation. Every building must have 1 kilowatt of clean energy for every 1,000 square feet of gross floor area. 2013)



2.3 Exterior Lighting

Improving the efficiency of exterior lighting is one of the simplest, yet most effective changes to be made at the municipal level. In the municipality exterior lighting consists of street lighting, parking lot lighting and ball field lighting.

Street lighting represents over 40% of the Town's electrical cost. Conversion of the existing high-pressure sodium (HPS) street lighting fixtures to high efficiency induction ones will have a substantial and beneficial impact on the Town's energy efficiency strategy to reduce street lighting energy consumption by up to 50%. The induction fixtures are rated for 100,000 hours, or roughly 20 years, as compared to the average life of 2 years for the HPS. It will also lower maintenance costs. The Town has almost 19,000 street lights that consumed 7,730,754 kWh in 2008 before the conversion began.

2.3.1 Past Actions and Achievements

- Upgraded 26% of street lighting from existing HPS fixtures to induction fixtures; 80% was funded with USDOE and NYSEERDA grant money. This project is ongoing with Town funds.
- Replaced all lighting fixtures at LIRR Huntington Station South Parking Garage with induction fixtures funded in part with EOSPA funds.

2.3.2 Projects and Policies Currently Under Consideration, Development or Implementation

- Replace all lighting fixtures at LIRR Huntington Station North Parking Garage with induction fixtures funded in part with EOSPA funds.

2.3.3 Potential Future Actions and Initiatives

In light of rapid advances in LED technology and cost reductions, consideration should be given to modifying this project to begin using LED lighting and focused fixtures in place of induction lamps. This will further increase the electricity cost savings above that expected from the high efficiency induction lamps.

- Perform audit of all exterior lighting in the Town facilities.
- Convert remaining metal halide and high-pressure sodium lighting fixtures to more efficient LED or induction technology based on life cycle cost. Inventory SKU minimization should be considered.
- Evaluate "Quality of Lighting" factors including focusing of light dispersion to needed areas, limiting wasted, stray light and over-lighting, and improving light uniformity through the use of application-specific light fixtures, reflectors and improved reflector material. The goal is to reduce the total number of lighting fixtures and wattage required, while still maintaining safe lighting levels.
- Explore the feasibility of renewable sources of power for streetlights.
- Consider the feasibility and cost savings of utilizing presence sensors for lights on public buildings and structures. They save power by operating at low (idle) level normally, and full power upon presence of people and vehicles. Pending updates to exterior lighting code that are expected to be adapted by NY State will require these features for new construction and major renovations.



2.4 Fleet

There are numerous benefits to developing a more fuel efficient fleet. By purchasing and driving vehicles that have a higher fuel efficiency rating, the Town can decrease greenhouse gas emissions while cutting fuel costs. The initial additional cost associated with more fuel efficient vehicles can typically be recouped in a relatively short time.

Each Town department makes independent purchases of vehicles. There is no central purchasing or management of fleets. As of 2007, Huntington had already purchased:

- 6 Honda hybrids
- 4 GEM cars
- 4 John Deer lawn tractors (electric)
- 1 Zamboni (electric)
- 6 Ford escape hybrids
- 8 Toro workman plug-ins

As of the publication of the 2010 Renewable Energy Task Force (RETF) Draft Energy Master Plan, the Town had planned to purchase three more Ford Escape hybrids, two hybrid buses and one all electric bus, as well as retrofitting a diesel garbage truck to be hybrid. As of 2010, the Town had 27 hybrid vehicles in its inventory and had replaced gasoline-powered General Services equipment with electric versions.

Using USDOE funding, administered by Greater Long Island Clean Cities Coalition (GLICCC), Huntington has retrofitted four (4) trucks, purchased one (1) new CNG truck and placed an order for one (1) more. The Town is currently planning to order at least one (1) more CNG truck for its fleet.

2.4.1 Past Actions and Achievements

- Leased several electric vehicles but leases expired and vehicles were returned
- Purchased 14 hybrids, 11 flex fuel vehicles, and 4 CNG garbage trucks
- Constructed CNG fueling station in cooperation with the Town of Smithtown at the landfill
- Retrofitted is in the process of converting its Huntington Area Rapid Transit (HART) bus fleet to Clean Diesel.

2.4.2 Projects and Policies Currently Under Consideration, Development or Implementation

- Ongoing conversion of the refuse hauling fleet to CNG.
- Ongoing retrofitting and/or conversion of its HART bus fleet to Clean Diesel. Ongoing conversion of vehicle fleet to more energy efficient and/or hybrid cars/trucks.
- Collaborate with other Nassau and Suffolk towns to obtain operating experience and cost/benefit information on the operation of fleet vehicles operating with alternate fuels. Compare the results with the operating experience and cost data for the Huntington Town owned vehicles.



2.4.3 Potential Future Actions and Initiatives

Mass Transit

The Town should promote greater use of HART bus service. Innovative promotions to raise ridership. The Town should consider collaborating with businesses along established routes to enhance customer feedback to improve the value of the bus services to the community.

Other actions under consideration by the Town include the following:

- Replace or convert vehicles, focusing on alternative fuel vehicles, hybrids and electric vehicles to improve gas mileage, reduce emissions, and potentially cut life-cycle/operational costs.
- Consider municipal capital leasing in place of purchases to eliminate upfront cost. Capital leases would allow for the purchase of additional or more expensive hybrid or electric vehicles.
- Determine best locations for charging/filling stations, in coordination with other municipalities and private facilities. Potential locations could include: municipal facilities, transit stations, schools, and office complexes. Explore entering into multi-year contracts for private companies to install charging/filling stations for use by the public.
- Install GPS tracking, route optimization and anti-idling technology in fleet vehicles.
- Deposit a percentage of fuel cost savings into a municipal Climate Smart Fund (see Operations).
- Acquire a fleet decision-making tool and implement standardized purchasing guidelines
- Explore the feasibility of reducing fleet size. This could be achieved through vehicle sharing between departments and sharing between the Town and special districts, such as the school district.



Fleet



2.5 Solid Waste, Wastewater and Stormwater

Sewage collection and treatment in the Town of Huntington is provided in six sewer districts. The three County districts include the Southwest district (CSD-03), the Strathmore district (CSD-05) and the Walt Whitman Mall district (CSD-17). The Town operates the Huntington (TSD-06) and the Centerport (TSD-07) sewer districts. The Village of Northport is served by the Northport Village Sewer district (VSD-02). Efforts to reduce water consumption can reduce the flow to the treatment plants and thus reduce the energy consumed for treatment.

Efficient management of solid waste is also vital to the health of the Town, as every step in the life cycle of municipal solid waste (MSW) management contributes to greenhouse gas emissions— from the production of the products that eventually become municipal solid waste to its collection and eventual decomposition.

It is important to find synergies to alter the path of solid waste, out of the septic/sewer system and into alternative fuel/fertilizer stream where it can be utilized, not deposited as refuse and treated.

The Town should also re-evaluate the current stormwater systems in relationship with increases of storm events by using multiple options for water currently being guided to aquifers.

2.5.1 Past Actions and Achievements

- Established a solid waste recycling facility that accepts glass, paper, metal, and electronics
- Established a hazardous waste (paints, batteries, petroleum solvents, etc.) drop-off facility.
- Added an e-waste (computers, phones and other electronic equipment) location at the drop-off facility.
- Instituted curbside "single stream" recycling in a program, "[Huntington Recycles: All In One](#)" as of January 2105. Single stream recycling refers to placing all acceptable recyclables (bottles, cans, plastics, paper and cardboard) in a single container for collection. Residents will no longer need to sort their paper and cardboard from their bottles and cans, nor will they have to keep track of whether it is a "paper pick up week" or a "bottles and plastic pick up week."
- Retrofitted the Sewage Treatment Plant with:
 - HVAC System Upgrade (Electric to Natural Gas)
 - Energy Efficient hybrid compressor blowers (3) that reduced amount of energy needed for drying post-treatment sludge.
 - Retrofitted natural in-pipe, up-stream biodegrading technology, reducing energy usage.
 - Energy Efficient LED Lighting Retrofit (All Fixtures).

2.5.2 Projects and Policies Currently Under Consideration, Development or Implementation

- Removal & Replacement of Rotating Biological Conductor #1 (RBC) the primary form of pre-treatment for the scavenger waste, reducing demand for electrical energy and chemical treatment. (RBC #2 replacement scheduled for 2016.)
- Convert sewer facility to natural gas, starting in 2015, reducing carbon footprint by eliminating the use of oil as a fuel.



- Install new multi-fuel capable Digester heat exchange boiler & digester pumps, yielding energy efficiency gains.



— Solid Waste and Wastewater —



2.5.3 Potential Future Actions and Initiatives

2.5.3.1 Solid Waste

- Implement paperless office preference in Town offices
- Consider programs to reduce the use of Styrofoam and other disposable products throughout the Town. (NYC, 2015, passed a law to ban the use of plastic-foam, such as Styrofoam, food service containers.)
- Explore feasibility of a regional composting initiative - potential partners: five east end towns
- Consider creating local laws governing construction waste and where it is sent. There is a value to these products which is lost if it is merely brought to a dump.
- Consider that when local trees need to be taken down, the best, highest use could be to make lumber, or paneling, instead of shredding it for wood chips. Many local mills search out fallen trees as they have a value and can be used in building/decoration.

2.5.3.2 Wastewater

- Explore the feasibility of a single Town-wide water/wastewater district that includes all properties, sewer and unsewered
- Consider a Water Protection Fee in place of sewer fees that is paid by all property owners. Fee based on water use, assessed value, on-site system, or sewer connection. All wastewater systems contribute to the nitrification of groundwater and local waterways. Funds could be used for maintenance of wetlands or other forms of climate adaptation
- Utilize the Water Protection Fee to upgrade onsite systems (OWTS) and wastewater treatment plants (WWTPs), construct new regional and community WWTPs, and service all OWTS and WWTPs
- Consider gray water reuse systems for appropriate Town facilities, such as golf courses and parks
- Consider developing a system of monitoring and repairing wastewater infrastructure. Home laterals and septic tanks both require regular inspections and maintenance
- Build awareness of water conservation and utilization and its impact on our aquifers and its impact for future development in Town departments.
- Consider expanding the sewer district area. This is a long term project and may be driven forward as a result of Huntington Station revitalization plans.

2.5.3.3 Stormwater Runoff

- Consider ways to redesign recharge basins to enhance the surrounding neighborhood with vegetation and a water feature to add value as well as function to an existing retention pond.
- Consider having regular inspections, if this is not already done, to keep recharge basins free from dumping (not just toxic waste, but old tires, shopping carts, etc.).
- Consider designing new rain gardens and/or using permeable paving in lieu of impervious paving at sidewalks and roadways to allow water to percolate back into the soil.
- Consider using an agreed-upon percentage of area at public parks or local green pockets to become retention ponds.
- Consider new designs using permeable pavers when fixing or replacing existing hardscape for town-wide locations, as well as encouraging this for local commercial and residential retrofits.



2.6 Operations

Environmentally preferable products, services and operations have a reduced effect on human health and the environment when compared with competing products or operations. Often, small changes to purchasing and operating protocols contribute significantly to meeting the Town's environmental goals, improving worker safety and health, and reducing health and disposal costs. These small shifts in the selection of products and office operational practices can have a major impact on energy use and expenses.

All Town operations personnel should be reminded their facilities may qualify for some of the EOSPA green funding recommended by ACEERS to promote energy efficient projects.

In order to promote and prioritize sustainability throughout the Town, it is important to have the Town staff with the requisite qualifications and training in place. It is also important to have the active participation of members of the Town Board.

The Town can promote effective energy choices and decisions by recognition and offering awards. A town "Green award" could recognize improvement through sensible decision making at the operations level. The intent is to build a mindset and culture that rewards sustainable thinking in the Town and that contributes to operations and purchasing decisions of all sizes to contribute to the overall goal.

All operations personnel need to be made aware of the existence of the ACEERS committee its willingness to help them with their evaluations. As the Town's Climate Smart Committee, it is available to guide and assist in climate smart purchases, researching potential incentives and calculating return on investments, etc., helping them evaluate optional technologies and products.

2.6.1 Past Actions and Achievements

The Plan recommended that that Town establish a full-time position reporting to the Town Board to develop a culture that embraces renewable energy in Town projects, purchases, and planning. It suggested that the Sustainability Officer actively review capital projects and large-scale maintenance projects to ensure that all opportunities to capitalize on renewable energy are included in project parameters. The Sustainability Officer, it said, should also develop town-wide renewable energy standards. The Town established that position in 2009 and has since employed a Chief Sustainability Officer who has been involved in the following projects:

- A fast track policy in the Building Department to expedite solar (PV and thermal) project building permits.
- The Town's updated website, which allows people to obtain information and download forms, such as building permit applications, quickly, avoiding the need to drive to Town Hall.

The Sustainability Officer has also been instrumental in writing successful grant proposals:

- Energy Efficiency & Conservation Block Grant (EECBG) by the United States Department of Energy in the amount of \$1,725,000. USDOE, thereafter, approved Huntington's five (5) recommended and partially funded project activities:
 - Project 1: Energy Efficient Street Lights



- Project 2: Renewable Energy Solar Photo-Voltaic Panels on Town Hall
- Project 3: LEED Feasibility Study for Town Hall
- Project 4: Residential Energy Efficiency Retrofit Program
- Project 5: Long Range Energy Efficiency Plan
- NYS Energy Research & Development Agency Grants partially funded:
 - Project 1: Energy Efficient Street Lighting permitted the Town to extend its project to replace its high wattage, energy inefficient High Pressure Sodium streetlights with high efficiency Induction lamps. Total bulbs replaced under this grant project: 1,846.
 - Projects 2/3: Installation Solar Photo-Voltaic Panels/Installation of Electric Vehicle (EV) Charging Station

The Town Hall solar photovoltaic (PV) project has been a huge success and its visibility sends a clear message that renewable energy and sustainability are town priorities and that the town is leading by example. This was a project that grew from an operations re-roofing and alterations project.

The successful street light relamping project was made possible by best practice strategies.

2.6.2 Projects and Policies Currently Under Consideration, Development or Implementation

The Town continues participation in the Better Buildings Challenge to reduce the energy consumption of commercial and industrial properties in the United States by 20% by 2020.

The “Armory” project and its adaptive reuse is currently in the planning stage. If it can be used as a model green renovation, its success will serve as a testament to comprehensive energy choices and climate smart considerations. Recognition that grant monies may be available serves as an example of all-encompassing Operations planning.

2.6.3 Potential Future Actions and Initiatives

The Plan also recommended that the Town identify a Board member who would focus on sustainability and serve as a liaison to the Task Force. It was suggested that this Town Board member spearhead the work of the ACEERS and help lobby for outside funding and grants to aid in the change to renewable energies and sustainable design. The Board member should meet periodically with the ACEERS and maintain ongoing contacts with Federal, State and County legislators representing Huntington who can assist Huntington with funding and legislation. Additionally, it was recommended that the Board member should act as the Town’s spokesperson in presenting innovative proposals to Federal and State granting agencies. The ACEERS hoped to achieve a high level of commitment from elected officials at all levels of government.

Other actions under consideration by the Town include the following:

- Communicate the existence of ACEERS and the Climate Smart Committee (CSC) to Town personnel and motivate Town departments and facilities managers to work collaboratively with them.



- Consider implementing energy-saving office practices, including: automatic shutdown of computers after a designated time; installation of light sensors and occupancy-driven heating/cooling
- Consider implementing Asset Management System to track material, equipment, and labor expenditures to identify savings opportunities
- Consider implementing a Town-wide green-purchasing policy
- Consider implementing a group purchasing policy. Where possible, look to collaborate with other municipalities and agencies in an effort to reduce capital costs. Organizations such as the Long Island Purchasing Council (LIPC) can help to facilitate group purchase agreements.
- Consider encouraging Town operation personnel who are the purchasing decision makers to work with the CSC to make sound energy choices and climate smart environments across all Town facilities.
- Consider encouraging paperless operations within departments as a goal.
- Consider establishing a Town Environmental Savings Fund, or Climate Action Fund, to save funds generated by energy savings for use in funding future Climate Smart projects and purchases and/or community-wide Climate Smart projects. This may require centralized purchasing of certain products and services
- Consider instituting a “Green Service Award” or “Green Manager of the Month/Year” to promote and recognize renewable and/or energy efficient choices and decision-making at the operations level by Town departments or facilities managers to build a mindset and culture focused on sustainability and energy efficiency in the Town.
- Consider instituting a “Green Building of the Month/Year” designation for a building, such as a Town’s school, library or other municipal facility for that models renewable and/or energy efficient choices.
- Consider instituting Town Engineering and Building Departments policies to promote energy efficient projects by fast-tracking extreme energy efficient projects such as LEED platinum, Passive House-certified or Zero-Net energy. They should also adjust and reduce the building permit fees accordingly.



3 COMMUNITY-WIDE POLICIES AND INITIATIVES

3.1 Residential Buildings

According to the US Energy Information Administration most recent Residential Energy Consumption Survey, US homes built in 2000 and later consume only two percent more energy on average than homes built prior to 2000, despite being on average 30 percent larger⁷. The same agency also found a decline in the proportion of energy consumption used for heating and cooling (48 percent in 2009 vs. 58 percent in 1993⁸). The study attributed the decline to increased adoption of equipment that is more efficient, better insulation, more efficient windows, and population shifts to warmer climates. Some of the decline is also due to increased energy consumption for non-heating or cooling appliances and electronics. Although larger appliances such as refrigerators and clothes washers are more efficient, the increasing number of energy-consuming devices has offset these efficiency gains, so they account for a greater percentage than in the past. Nonetheless, buildings account for about 40 percent of the country's energy use⁹.

3.1.1 Laws, Codes and Regulations in Effect

- In 2008 the Town adopted the ENERGY STAR® Certified Homes Program requirement for new single family home construction.
- In 2010 the Town superseded Energy Star labeled code to require newly built or substantially reconstructed single family homes to follow the new Energy Conservation Construction Code of New York State (ECCCNYS 2010). This new code included being rated by an independent Residential Energy Services Network (RESNET)-certified Home Energy Rating System (HERS) rater, and achieving a home energy rating index of 70 or lower.
- In 2010 the Town adopted a fast-track system for the installation of solar PV and solar thermal systems for residential properties.
- Participates in Long Island Green Homes program, promoting home energy audits and performance upgrades to residents
- Participates in Long Island Green Homes Coalition to promote energy audits and home efficiency improvements through NYSEDA and PSEG-Long Island programs to residents.

3.1.2 Potential Future Actions and Initiatives

A critical aspect of energy efficiency education is the need for reliable and comparable energy usage data for homeowners and renters similar to a miles-per-gallon rating on a new car, similar to the EPA/DOE Yardstick. ACEERS recommended that the Town consider adopting an energy consumption

⁷ Energy Information Administration, Newer U.S. homes are 30% larger but consume about as much energy as older homes, February 12, 2013, <http://www.eia.gov/todayinenergy/detail.cfm?id=9951>. Accessed 3/2/15.

⁸ EIA, Heating and cooling no longer majority of U.S. home energy use, March 7, 2013, <http://www.eia.gov/todayinenergy/detail.cfm?id=10271>. Accessed 3/2/15.

⁹ EIA, FAQs: How much energy is consumed in residential and commercial buildings in the United States?, June 18, 2014, <http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1>. Accessed 3/2/15.



calculation for the purpose of benchmarking the homes in the Town of Huntington for not only its new and substantially reconstructed buildings, but also for existing residential housing stock.

The calculation would be conducted once every five years and sent to the Town to help it establish its carbon footprint. In developing this requirement, the Town should evaluate the potential financial impacts on buyers and sellers and establish exemption guidelines for hardships or where data is otherwise available and re-testing is unnecessary.

The audit should comply with the Building Performance Institute (BPI) Standards for residential energy audits (BPI-1100-T-2012). This audit procedure complies with the state and PSEG-Long Island programs that promote improvements to residential energy efficiency. While not guaranteed for the future, these audits are also currently subsidized by NYS and PSEG-Long Island, so for most consumers there is no additional cost for the audit.

A requirement for what might be called an “Energy Performance Certificate” (EPC) would be a low-cost strategy to target residential energy GHG emissions, the largest single portion of the region’s GHG emissions. The time of home sale/rent is one of the few intervention points that municipalities have to encourage existing homeowners (or landlords) to upgrade homes.

An EPC would report the results of an assessment of a home’s energy performance that would be carried out using a program that has been validated by NYSERDA for use in the Home Performance with Energy Star® program. Currently, these include Real Home Analyzer by Conservation Services Group and TREAT (Targeted Retrofit Energy Analysis Tool) by Performance Systems Development. Several others are also being evaluated by NYSERDA and would be incorporated as they are approved. To be most effective in incentivizing energy efficient improvements, the audit should be paid for by the seller prior to the property transfer, if the seller is not eligible for one or more programs that cover the cost of the audit.

The Plan also recommended that the Town adjust its energy codes to reflect the importance of sustainable design. Leadership in Energy and Environmental Design (LEED) is a rating system developed by the U.S. Green Building Council (USGBC). It is the most commonly used standard used to certify green buildings for new construction and major renovations. Buildings account for about 40 percent of our nation’s energy use and are a major source of greenhouse gas emissions. It was also recommended that new construction and major renovations throughout the Town achieve LEED certification through the USGBC. As part of this implementation action, the Plan set out the following goals:

- A minimum of 5 LEED points should be achieved in LEED credit EA 1 utilizing version 3 of the LEED standards
- Set efficiency standards for the installation of new HVAC equipment to be 5% better than ASHRAE 90.1 2007 to assist in achieving the 5 LEED points in EA 1
- Educate the HVAC industry of these new standards
- Publish a list of efficiencies for common types of HVAC equipment
- Develop an inspection protocol for these installations
- Implement the Inspection protocol



Other actions under consideration by the Town include the following:

- Require newly built or substantially reconstructed multi-family homes to follow the ECCCNY 2010. This includes being rated by an independent Residential Energy Services Network (RESNET)-certified Home Energy Rating System (HERS) rater, and achieving a home energy rating index of 70 or lower.
- Incentivize mixed use/mixed income development in village/hamlet centers, downtowns, and transit hubs by reducing sewer connection fees. Discourage development in less desirable areas (valuable open space/undeveloped land etc.) by increasing connection fees and making program revenue neutral. Cleaner Greener Communities Regional Sustainability Plan may be able to provide funding for incentives.
- Explore energy-efficiency measures for multi-family housing. These properties can offer unique opportunities due to shared systems. These properties can also provide ideal locations for renewable energy generation.
- Offer refunds of LEED certification fees for eligible projects. (Town of Babylon, 2006) Cleaner Greener Communities Regional Sustainability Plan may be able to provide funding for incentives.
- Require home sellers to provide an elevation certificate for properties located within the floodplain/flood hazard area. Elevation certificates are an important part of the flood insurance process - securing one will enable a homebuyer to obtain an accurate flood insurance premium cost prior to closing. (Strengthen New York Summit, 2012)
- Participate in carbon monoxide awareness campaign to promote health and safety of residents and to encourage home energy audits and regular maintenance of combustion appliances for both safety and energy efficiency.
- Develop flood and emergency preparation materials for distribution to homeowners. Potential information could include: emergency preparedness procedures, directory of local resources and services, as well as information about flood insurance, home retrofits and resilient building material requirements for properties within flood hazard areas.
- Continue to promote residential recycling and home composting campaign.
- As part of the site plan review process, require new residential construction to incorporate stormwater management features. Could include permeable surfaces/paving, green/white roofs, catch basins, water recycling for irrigation/landscaping etc. Cleaner Greener Communities Regional Sustainability Plan may be able to provide funding for incentives.
- Consider promoting the use of rain barrels throughout the Town to curb stormwater runoff from the roofs of residential properties.
- Build awareness of water conservation and utilization and its impact on our aquifers and its impact for future development.
- Provide free water and energy audits for low-income units in the Town.



3.2 Commercial and Industrial Buildings

Reducing energy and operating costs for local businesses helps both the environment and the local economy.

3.2.1 Laws, Codes and Regulations in Effect

- Require LEED standards for new construction of commercial buildings with over 4,000 square feet of floor area.
- Dark skies outdoor lighting requirements.

3.2.2 Potential Future Actions and Initiatives

It was recommended to enact measures to increase energy efficiency in commercial and industrial buildings and attract “green” businesses to Huntington. The Plan recommended that the Town incentivize the creation of energy usage baselines for commercial facilities and develop a list of conservation measures for commercial facilities to adopt as well as qualified service providers for their installation.

PACE

It was recommended that the Town establish a revolving fund through which commercial entities could borrow money from the municipality to finance conservation measures. It was further suggested that commercial entities would re-pay the Town/sponsoring public agency monthly with financing structured so that money saved through energy savings would be greater than the monthly loan repayment, creating a net positive cash flow for the commercial entity.

That mechanism has since been established in the State. The New York State Energy Improvement Corporation’s *Energize NY (PACE) Benefit Financing Program/Energize NY* (local level) is now available for municipal membership. The *Benefit Financing Program* offers financing for energy upgrades on real property using PACE (*Property Assessed Clean Energy*) financing. The *Energize NY Program* provides marketing and outreach assistance for energy upgrade programs at the local level. The Town should consider participating in the program to establish a PACE funding mechanism for commercial property owners to finance energy-efficient improvements, reducing both emissions and daily operating costs.

Other actions under consideration by the Town include the following:

- For larger commercial/industrial properties, investigate the feasibility of installing on-site wastewater treatment systems, incentivize the installation of such systems
- Amend zoning code to allow for infill development near the Town's transit hubs and employment centers. Limit/prevent significant commercial development outside of these areas (helps to reduce energy consumption and the need for new infrastructure)
- Explore the feasibility of requiring or incentivizing white/green roofs for commercial/industrial properties
- Explore the feasibility of requiring or incentivizing electric vehicle charging stations at centers of employment



- Develop an expedited permitting process for private installation of alternative fuel and electric vehicle charging infrastructure at commercial/industrial properties
- Develop expedited permitting for site plans that incorporate sustainable features and/or practices.
- Explore the feasibility of a local green business incubator
- Recommend energy-efficiency benchmarking (using EPA Portfolio Manager) for commercial buildings greater than 10,000sq. ft. (NYC Local Law 84 of 2009)
- Promote energy-efficiency benchmarking (using EPA Portfolio Manager) for commercial buildings smaller than 10,000 sq. ft.
- Recommend all commercial buildings greater than 10,000 sq. ft. to conduct ASHRAE Level 1 energy audits once every 10 years. Year based on appropriate Section Block Lot number.
- Promote all commercial buildings smaller than 10,000 sq. ft. to conduct ASHRAE Level 1 energy audits once every 10 years. Year based on appropriate Section Block Lot number.
- Require all commercial building projects to meet the latest ratified ASHRAE 90.1 building energy code.
- Partner with local utilities to review, revise and promote energy-efficiency incentives for large commercial properties
- Require new commercial buildings to be designed to be 20 percent more energy efficient than if built to New York State Code requirements, as shown by COMcheck. (Town of Islip)
- Offer refunds of LEED certification fees for eligible projects (Town of Babylon, 2006)
- Offer property tax abatements for new or renovated commercial buildings that meet LEED or similar standards. (Town of Brookhaven, 2013)
- Set up a policy to encourage composting at restaurants, schools and other facilities.
- Consider promoting the purchase of local products and the use of simple recycled packaging to reduce waste and support local economy throughout the Town.
- Consider the re-purposing of products traditionally reserved for trash throughout the Town.
- Consider partnering with local businesses to reuse packaging before recycling (e.g. pallets for stone or building materials, reusable packing peanuts, etc.)



Commercial and Industrial Buildings



3.3 Community-Wide Policies and Initiatives to Promote Renewable Energy

With direct control over local zoning and land use, the Town of Huntington can establish codes, policies, and guidelines to encourage the installation and use of renewable sources of energy. Since 2013, there has been a moratorium on installing wind turbines. ACEERS would like to suggest the Town consider lifting this moratorium either during or after a discussion with regulatory agencies/departments to consider creating clear user-friendly requirements for wind turbines.

3.3.1 Laws, Codes and Regulations in Effect

- In 2010 the Town adopted a fast-track system for the installation of solar PV and thermal systems for residential properties. There is no permit fee for residential solar, although a survey of the property is still required.
- A Real Estate Tax tiered abatement for newly-built LEED-certified homes was passed by the Town Board in 2013.
- Participates in the NY Solar Smart Team Solarize program administered by Sustainable CUNY to offer homeowners discounted rooftop solar PV installations based on group purchasing power. The goal is a minimum of 150kW power generation in total. ACEERS members are part of the team choosing the contractor and performing outreach to homeowners.

3.3.2 Potential Future Actions and Initiatives

- Consider lifting the moratorium on installing wind turbines and explore the feasibility of permitting wind turbines on residential properties (see Town of Islip wind ordinance)
- Initiate a discussion with regulatory agencies/departments to create clear, user-friendly requirements for residential geothermal heat pumps and wind turbines.
- Consider participating in inter-municipal efforts to develop unified commercial solar, geothermal and wind permitting, and adopt fast-track permitting for commercial properties once developed.
- Consider code amendments to incentivize or require renewable energy sources on commercial/industrial properties
- Consider providing incentives, such as property tax abatements, for solar, geothermal pump systems, wind turbines and other forms of renewable energy upgrades.
- Consider adopting the Model Geothermal Permitting Code developed by the Suffolk County Planning Commission and revised by ACEERS and the Chief Sustainability Officer in cooperation with the Town departments of Engineering Services and Planning & Environment¹⁰.

¹⁰ PSEG Long Island, *Suffolk County, PSEG Long Island, LI-GEO Unveil New Geothermal Energy Code to Assist Homeowners and Businesses*, <https://www.psegliny.com/page.cfm/AboutUs/PressReleases/111314-geothermal>.



3.4 Transportation

Vehicles and transportation account for 42% of the CO₂ emitted by fuel combustion in New York State in 2011¹¹. The Town can reduce its carbon footprint by establishing policies to encourage or incentivize reductions in residential, commercial, and government vehicular use.

3.4.1 Laws, Codes and Regulations in Effect

- Installed a five electric vehicle solar PV charging station at the Huntington Train Station in Huntington Station.

3.4.2 Potential Future Actions and Initiatives

The Plan made several recommendations to reduce single-passenger vehicle use and miles travelled, increase use of mass transit and alternative transportation, and increase the use of alternative fuels.

Mass Transit

The Plan suggested that the Town encourage greater ridership on the Long Island Railroad and Huntington Area Rapid Transit (HART) buses through public education via its website, newsletters, and special events. The Plan recommended that the Town also consider offering incentives to encourage ridership.

Alternative Fuels

Huntington was the first town on Long Island to offer free parking at railroad stations, beaches and metered parking spaces for residents who drive alternative fuel vehicles, although this program was discontinued in 2014. Huntington also pioneered the first set of “Th!nk” electric vehicles, supplying plug-in stations at the Huntington train station. This initiative should be reinstituted for the new generation of plug-in vehicles. The Plan recommended that the Town encourage the use of electric vehicles through the re-establishment of plug in stations at the Huntington and Cold Spring Harbor train stations in preferred spots.

It was recommended that the Town work with the villages, school districts, libraries, and fire districts within the township to encourage the use of alternative fuels such as natural gas, bio-diesel, hybrid fuels, or use of filtration systems with ultra-low sulfur diesel. The Plan suggested that the Town explore cooperative bidding and other inter-municipal agreements to accelerate investments in alternative fuels.

Alternative Vehicles

Reductions in vehicle use might be achieved according to the Plan by encouraging the use of highly fuel efficient vehicles with small motors such as scooters for commutes to the train station. The Town could facilitate greater use by providing dry and secure daily storage for such vehicles at train stations. The Town could also pursue educational efforts and traffic calming measures to encourage greater use of

¹¹ NYSERDA, 2014 Draft New York State Energy Plan, Volume 2 [Impacts and Considerations](http://energyplan.ny.gov/Plans/2014.aspx), Figure 1, p. 11, <http://energyplan.ny.gov/Plans/2014.aspx>.



highly efficient transport designed for short trips and minimum space utilization. The Plan also suggested that the Town require golf carts to be electric-powered, with a photovoltaic charging system sized to meet summer requirements and net metered to sell power back to the utility in the off-season.

Bicycling

It was recommended that the Town encourage bicycle use for commuting and recreation for health reasons, to increase appreciation of the Town's scenic spaces, and to reduce greenhouse gases associated with motor vehicle use. The following measures were recommended by the Plan.

- Establish industrial strength bike lockers at train stations and certain municipal buildings to encourage the use of bicycles by providing safe storage options
- Identify roads that are suitable for bicycle lanes and plan to add 10 miles of bike paths/lanes
- Develop Town ordinance to require designation of space on existing roads with wide shoulders or lanes for bike lanes
- Encourage bicycling by establishing a Bike Day with Bike shops exhibiting in Heckscher Park
- Increase bike ridership by establishing a "bike library" program similar to that run by Fort Collins, Colorado. Establish locations for the public to borrow bicycles as well as a donation center where bike mechanics restore old bikes. Work with the Town's existing bicycle shops to develop the program.

Anti-Idling

Idling beyond three minutes by commercial vehicles and school buses is prohibited in the State of New York. The Plan recommended that the Town impose a similar anti-idling rule for its own vehicles).

School Bus Fleet

The Town of Huntington consists of eight school districts. Five of the eight (Cold Spring Harbor, Huntington, South Huntington, Harborfields and Elwood) have school bus transportation provided by a school bus fleet operator, Huntington Coach Corporation. The other three (Commack, Half Hollow Hills and Northport-East Northport) each provide their own transportation. Most, if not all, of these buses operate utilizing diesel fuel.

Diesel exhaust has been a known carcinogen since 1990. According to California studies, approximately 70 percent of the cancer risk from air pollution in the state comes from diesel-particle pollution. Such exhaust from school buses not only pollutes the outdoor air, but exposes the *children in the bus* to as much as 46 times the cancer risk considered "significant" by EPA and under federal law.¹²

Estimates from 2001 show new diesel school buses emit 51 times more air toxics than a new natural gas school bus. A study of commercial buses in Boulder, Colorado demonstrated a 97 percent reduction in

¹² Solomon, Gina M., Campbell Todd R., Ruderman Feuer, Gail, Masters, Julie, Samkian, Artineh, Paul, Kavita Ann and Santos Guzman, Jesus, "No Breathing in the Aisles: Diesel Exhaust Inside School Buses," Natural Resources Defense Council and the Coalition for Clean Air, January 2001, <http://www.nrdc.org/air/transportation/schoolbus/schoolbus.pdf>.



particulate matter and a 58 percent reduction in nitrogen oxides when the same buses were run using compressed natural gas (CNG) instead of diesel.¹³

Cleaner alternatives to diesel, such as natural gas and propane, are already widely available for school bus applications. Although a CNG school bus costs more than a diesel school bus, the operational and maintenance costs tend to be lower so that the initial investment is recouped. Many school bus fleets throughout the country operate natural gas and propane school buses, which have resulted in lower emissions and noise. In addition, more advanced technologies, including hybrid-electric buses that run on natural gas instead of diesel, battery-electric buses, and fuel cells, will be available in the future.¹⁴

In 2010 and 2011 Huntington Coach Corporation was recognized for its commitment to using cleaner school bus fleets and practices to reduce engine exhaust emissions and conserve fuel by the National School Transportation Association's (NSTA), which has been reviewed and endorsed by the U.S. EPA's Clean School Bus USA Program. It is also working toward a cleaner environment through the use of available EPA/CARB verified technologies as well as new bus technology.

Outreach

The Plan recommended that the Town conduct an outreach campaign via its website, printed materials, newsletter, and special events to encourage residents to consider driving choices that could reduce the environmental impacts of vehicle travel. Suggestions could include use of an efficient vehicle, maintenance of proper tire pressure, driving the speed limit, and combining trips to avoid unnecessary vehicle miles traveled.

Other actions under consideration by the Town include the following:

- Consider, complete, adopt and implement Complete Streets policy
- Continue work to develop Town-wide bicycle network, including a bike rental network, the provision of public parking (racks, lockers) and site plan requirements for bicycle racks/access
- Consider providing incentives for carpooling/vanpooling: free park & ride lots, preferred parking at transit hubs etc.
- Consider developing a car-sharing network: promotes use of public/more efficient forms of transportation, such as local shuttles, trains and buses
- Consider instituting synchronized traffic lights on major roadways, such as Route 110, Route 25A and 25, can both control speed and reduce idling pollution.
- Consider siting and constructing an intermodal transit hub, attempt to coordinate schedules across modes
- Consider expanding the network of sidewalks to encourage pedestrian activity throughout the Town
- Consider utilizing transportation assets for multiple functions such as road energy systems that use heat captured by asphalt to store and pipe heated water to nearby buildings

¹³ *Op. Cit.*

¹⁴ *Ibid.*



- Consider developing expedited permitting processes for private installation of alternative fuel and electric vehicle charging infrastructure
- Recommend school bus fleet operators and school districts that provide their own transportation to purchase low-sulfur diesel fuel and retrofit their existing diesel school buses with particulate traps, if they are unable to purchase alternative fuel school buses.
- Recommend school bus fleet operators and school districts that provide their own transportation to immediately modify their purchasing practices to replace aging diesel school buses with cleaner alternative fuel school buses such as natural gas.
- Recommend school bus fleet operators and school districts that provide their own transportation to purchase only alternative fuel school buses.



Transportation



3.5 Educational Initiatives

It is important for the Town to develop educational initiatives to disseminate factual information to its employees and the general public about renewable energy policy and the numerous benefits of renewable energy and energy efficiency. This leads to a better understanding and a greater likelihood that effective Town policies will be established and adhered to.

The Town and its residents are and will be making important decisions regarding energy usage and supply, as well as ways to preserve and adapt to the altering environment. It is important that our Town's residents are well informed so that they can make sound, educated decisions.

The most efficient way to implement educational initiatives is through the school system. Younger minds are more open to new ideas since attitudes and opinions are still in the formative stage. For this reason, most educational programs in energy efficiency and renewable energy are geared for children of various ages. Teaching children may be the best way to involve their parents, who are more likely to be interested in projects their children are studying or researching for school. In addition, children are the future members of the Town.

3.5.1 Current Programs and Policies

The Town of Huntington has an active community outreach effort related to environmental issues, producing educational materials on solid waste, recycling, and reference guides on energy efficiency, residential retrofits, and green living.

3.5.2 Potential Future Actions and Initiatives

The Plan suggested that the Town educate and engage the community in an effort to reduce town-wide GHG emissions with information on GHG emission reduction measures for their homes, schools, and businesses.

The Plan also stressed the role that the Town could play in leading by example. Strong community support is required as major reductions in greenhouse gases (GHGs) cannot be achieved through Town actions alone. It also recommended that a team of renewable energy professionals be assembled to assist with an educational campaign on energy efficiency and sustainability for the community. The Plan recommended the following measures.

Public Buildings

It was recommended that the Town work cooperatively with the USGBC and other governmental jurisdictions within Huntington to promote the benefits of greener public buildings to stress the role of community members in finding solutions to our energy problems. The Plan suggested that the Town encourage, educate, and assist governmental jurisdictions to become more energy efficient by utilizing Huntington's team of renewable energy experts and educators to develop the following programs.

School Programs

Assembly Program – Develop an assembly program similar to or in cooperation with USGBC available to schools, libraries and other public forums in Huntington. The typical program would run under an hour,



featuring two or three guest speakers who are experts in renewable energy. Huntington's solar, geothermal heat pumps, wind, bio-fuel, etc. companies would be invited to participate and lend their expertise free of charge. Guidelines for participation would be established and assemblies tailored to different age and interest groups. Assemblies would be scheduled on a rotating basis to cover all age groups and geographic areas of the Town.

School/Youth Clubs - Young people are the key to long-term energy sustainability efforts. Develop clubs or societies, like National Honor Society, in cooperation with schools and other youth agencies so that youthful participants can get community service credit for college and participate in education on energy efficiency on a continuing basis. Clubs would be self-perpetuating as students can pass on knowledge to new members without outside intervention. Clubs can help set renewable energy goals for their schools and agencies. Educate teachers and youth workers on the benefits of energy audits and develop High School level science curricula where students learn to conduct energy audits.

Green Advisor - Offer a free "Green Advisor" to donate services to schools and local youth agencies in cooperation with planned annual events (*i.e.*, school dance, holiday event). The Green Advisor would be available to meet with the event committee to help green the event and make it energy wise.

Inter-School Competition – The school with the most students whose parents assess their Home Energy Yardstick Scores will win special recognition (to be determined). All the parent has to do is follow the step-by-step instructions on the U.S. Environmental Protection Agency's (EPA) website, print out the results and submit them to the Town of Huntington ACEERS.

Renewable Energy Science Fair - Promote the first Renewable Energy Science Fair and seek participation of school age children in the Town of Huntington. . Attract corporate sponsors, a donated site and ask for a limited number of entries from each school. Develop categories for judging and open for public viewing at certain hours. Contact press for coverage. This Fair could involve a scholarship incentive or prize and have teams focus and enact their projects. It will expand experiential and technical knowledge about renewable energy for teachers and students and is likely to introduce new efficiencies into schools and other buildings where projects are conducted. Encourage team projects with sponsorship.

Residential Programs

Professional Energy Audits – Mail postcards to homeowners in the Town to remind them of the free or reduced rate for professional energy audits available through NYSERDA and PSEG-Long Island programs and describe the financial and environmental benefits of following the energy audit and its voluntary action plan.

Solarize Huntington Program – Perform outreach events to inform public of this limited-time offer for discounted solar PV installations for homeowners (one to four family dwellings) in the Town.

Community Input

The Plan suggested that the Town solicit input from the community on energy efficiency. It suggested the Town develop different avenues for community input including at its own "Green" events (*e.g.*, Earth Day) and at events by others. Community input could be solicited via a feedback section on the Town's website. A mail or web-based questionnaire could be developed soliciting community views on



how the Town or other public resources could help residents and businesses shift to a renewable energy and energy efficiency economy. Chambers of Commerce could solicit views from their member businesses on these issues. The Plan also suggested that the ACEERS invite residents to its meetings one or two times a year. Workshops were also recommended with energy efficiency experts to help coach business owners and homeowners on they might save money by making their businesses and homes more sustainable.

Information Dissemination

The Plan suggested that the Town provide information on its website and in print about home energy audits and improvements that homeowners could make (e.g. caulking and weather-stripping, efficient appliances, etc.). The Plan encouraged the Town to continue its environment educational events on Earth Day and throughout the year and to seek opportunities to do programs at local schools.

In addition to establishing its own greenhouse gas (GHG) emission reduction goals, the Town could encourage emissions reduction targets by residents by placing a carbon calculator on its website with action examples. For example, 84 pounds of carbon can be saved for each incandescent bulb replaced by a compact fluorescent.¹⁵ Or how if every American ate a plant-based diet one day a week we could save 1.2 million tons of CO₂ over the course of a year.¹⁶ The Town should encourage each home to lower its GHG emissions by at least 1,000 pounds per year and graphically demonstrate its effect if achieved by all of Huntington's 200,000 residents.

The Town should continue to reach out to businesses with information about energy efficiency and alternatives and work closely with the Huntington Chamber of Commerce and similar business organizations to keep Huntington businesses abreast of energy efficiency educational opportunities and incentives via e-mail and print. The Plan recommended events such as a solar photovoltaic (PV) and solar thermal (hot water) showcase, a kiosk for public information, weatherization seminars. The Town should also work with the local REALTORS® to disseminate energy efficiency information and services available to all new residents when they purchase homes in the Town.

The Plan stressed the importance of communicating successes. It suggested that the Town send regular press releases to all media contacts, chambers, and business organizations with updates on the Town's energy efficiency and renewable energy initiatives including advisories from ACEERS. A renewable energy scorecard was also recommended for the front lawn of Town Hall powered by solar PV.

¹⁵ Gershon, David. *Low Carbon Diet: A 30 Day Program to Lose 5000 Pounds--Be Part of the Global Warming Solution!*, Empowerment Institute; 3rd, Revised edition (January 15, 2007) and US Environmental Protection Agency, Calculations and References: Number of incandescent bulbs switched to compact fluorescent bulbs, <http://www.epa.gov/cleanenergy/energy-resources/refs.html>

¹⁶ Stone, Gene, ed., *Forks Over Knives: The Plant-based Way to Health*, The Experiment, 1 edition (June 28, 2011)



3.6 Land Management

Land management by the Town is important and necessary to ensure access to land and housing for both residents and businesses. How the Town uses its land to meet the needs of a healthy, growing, thriving community defines it. Access to and use of land is important for economic growth, poverty reduction and the promotion of both private investment and transparent, accountable government. This requires planning for the efficient placement of infrastructure, settlement expansion and other land-use activities for the good of the entire community.

The land management of the Town should implement a zoning that promotes the efforts to reduce environmental impacts and to live more lightly on the land. Efforts to reduce sprawl by the introduction of compatible mixed use of existing developed areas and new developments.

Sustainable land management is a knowledge-based procedure that aims to integrate the management of land, water, biodiversity, and other environmental resources to meet human needs while sustaining ecosystem services and livelihoods. This term refers to community planning and environmental protection, as well as to commercial, property and estate management.

Sustainable land management is the wave of the future. From the Smart Growth America Coalition Member Application:

We believe that the American people deserve healthy cities, towns and suburbs; homes that are both affordable and close to jobs and activities; fewer hours in traffic and more opportunities to enjoy recreation and natural areas; air and water of the highest quality; and landscape our children can be proud to inherit. We believe that ordinary citizens deserve a much greater say, and better options, in choosing their communities' future.

3.6.1 Laws, Codes and Regulations in Effect

- Mixed use zoning is in place in C-1, C-3, C-4, C-5, C-6, C-6 overlay, C-7, C-8 and C-9.

3.6.2 Potential Future Actions and Initiatives

The Plan recommended that the Town continue its efforts to implement Smart Growth, which minimizes driving by encouraging mixed-use development, the reduction of sprawl, and introduction of traffic calming measures, bike and pedestrian paths.

Suggested actions to:

- Continue to utilize form-based code zoning through the application of the C-6 district in conjunction with the newly adopted Design Guidelines incorporated into the Site Plan and Subdivision Regulations. This approach should be considered for the following areas:
 - New York Ave north of Main St.
 - Main St east of Park Ave.
 - New York Ave south of Fairview St.
- Investigate mixed-use parking structures.



- Consider creative parking solutions. The 2014 Long Island Index launched the ParkingPLUS Design Challenge to devise new concepts of parking design to both rethink and enliven our downtowns.
- Prepare an overlay map showing the existing single use sites with the overlay showing the potential of mixed-use.
- Expand and revise current code to allow mixed-use for office and industrial spaces. (Tyson, VA, suburban office mixed use)

Create Green Business District and Incubator

The Plan recommended that the Town attract green business to locate or expand in the Town. A business could qualify as green in a number of ways. Providers of green products would qualify such as a renewable energy company that offered solar, wind or geo-thermal products or services. It was recommended that the Town develop policies to encourage these and existing green businesses to locate in Huntington by establishing a “Green Business District.”

Establishing such a zone would require input from Town departments and members of business groups like the chambers of commerce and business improvement districts. Qualifying green businesses would become a self-reinforcing group, and as a group advocate for advances in energy efficiency and renewables, thereby attracting even more associated businesses.

Certain areas may be best for a Green Business District (GBD). Zoning overlay districts have been used to form enterprise zones in certain areas. Huntington could use this concept to define or transform an area by making it a GBD. This may be suitable in an area that needs some incentive to redevelop such as a “Brownfield” or as a means to accelerate an existing project like Huntington Station Revitalization.

A “Green Business Incubator” could be located inside the GBD to help establish new Green companies and to assist existing companies “go green” by adding new Green products and services. Based on statistics from the National Business Incubator Association, business “graduates” from a well-run small business incubator have an 87% “success” rate (survival rate after they leave the incubator). Entry into the Green Business Incubator could be incentivized with low-interest loans or rent subsidies for commercial space.

Create Clean Energy Initiative Fund to Encourage New Technology Development

The Plan suggested that the Town explore the creation of a Clean Energy Initiative Fund. Growth of new industries starts with the development of new technologies. One technique is to collaborate with universities to incubate these technologies. These initiatives require a funding source that could be a combination of public and private funds including local lenders.

Other actions under consideration by the Town include the following:

- Town drafted prescriptive energy efficiency code – currently under review.



4 CLIMATE CHANGE, PLANNING AND ADAPTATION

4.1 Climate Change in New York

The following summary of climate change effects is taken from the *Climate Smart Resiliency Planning Evaluation Tool for New York State Communities*, developed by the New York State Climate Smart Communities program.

4.1.1 Observed Effects of Climate Change

The New York State Energy Research and Development Authority (NYSERDA) released a report in 2011 that evaluated scientific work to date and discussed the projected effects of climate change in New York over the next 100 years. The report, *ClimAID: the Integrated Assessment for Effective Climate Change Adaptation Strategies in New York State* was the work of more than 50 scientists. The report examines the effect of climate change on a number of sectors in seven geographic areas of the State. Those sectors include water resources, coastal zone, ecosystems, agriculture, energy, transportation, telecommunications, and public health. *ClimAID* noted the following critically important observations:

- Annual average temperatures have risen about 2.4 °F since 1970, with winter warming exceeding 4.4 °F.
- Sea level along New York's coastline has risen about a foot since 1900.
- Intense precipitation and heavy downpours have increased in recent decades.

4.1.2 Projected Climate Changes

The *ClimAID* report made the following predictions for the next 100 years in New York State:

- Annual average temperatures in New York State will rise by 4 to 9 °F by about 2080.
- Average precipitation will increase five to 15 percent by about 2080, with most of the increase in winter.
- Intense downpours will become more frequent.
- Short-term droughts will become more frequent.
- The number and duration of extreme heat events will increase.
- Along the seacoast and tidal portion of the Hudson River (to the Federal Dam at Troy), sea level could rise more than four feet by 2090.

4.1.3 Projected Effects of Climate Change

The report utilized the predicted climate changes to describe the potential effects on the State's natural resources, built environment, and public health. The following potential effects of climate change from the *ClimAID* report will affect the residents of the Town of Huntington:

- Infrastructure (energy, transportation, telecommunications)
 - Disruption of water, transportation, communication, and energy systems due to extreme weather.
 - More frequent and more intense rainstorms increase localized flash floods.



- *Power outages affect apartment dwellers and vulnerable populations in particular.*
- *Public health*
 - *Expansion of vector-borne diseases.*
 - *Heat waves leading to increased illness and deaths from heat stress.*
 - *Increased levels of air pollution, causing asthma and other respiratory illness.*

4.1.4 Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.¹⁷

As disasters occur, the Federal Emergency Management Agency (FEMA) also makes an additional percentage of the total damage amounts incurred available to local governments having an approved Hazard Mitigation Plan (HMP) for implementing rebuilding projects.

The Suffolk County Office of Emergency Management is finalizing the 2014 County Hazard Mitigation Plan Update as required by FEMA in collaboration with the stakeholder community. The County is incorporating data updates from all participants to be included in the Suffolk County Hazard Mitigation Plan Update. The County indicated that its priority and mandate is to ensure that the plan includes all municipalities that are willing to participate. They emphasize that the consequence of non-participation is the potential loss of federal funding for future hazard mitigation projects.

4.1.5 New York Rising Community Reconstruction Program

Through the New York Rising Community Reconstruction Program (NYRCR), New York State is assisting communities to rebuild better and safer through community-driven plans that consider current damage, future threats to community assets, and the community's economic future. In keeping with the National Disaster Recovery Framework, NYRCR Plans consider the needs, risks, and opportunities related to assets in the following recovery support functions: Community Planning and Capacity Building, Economic Development, Health and Social Services, Housing, Infrastructure, and Natural and Cultural Resources. To better align the Town's climate strategies with future funding opportunities, the Town of Huntington's Climate Action Plan addresses adaptation and mitigation within a similar structure and framework, although it was not specifically part of the NY Rising process.¹⁸ The final plans for the NYRCR communities are available on the Office of Storm Recovery's website: <http://stormrecovery.ny.gov>. Implementation of those plans will begin in the later part of 2014.

¹⁷ <http://www.fema.gov/hazard-mitigation-grant-program>

¹⁸ <http://stormrecovery.ny.gov/community-reconstruction-program>



4.2 Community Self-Assessment and Planning

Performing a risk and vulnerability assessment is a critical first step in developing comprehensive adaptation and mitigation strategies for addressing climate change impacts. In general, a comprehensive assessment for non-coastal municipalities would likely focus more on the effects of high summer temperatures, severe rain and wind storms, and the associated power outages. Power outages can be dangerous to certain vulnerable populations as they result in indoor temperature extremes, and non-functioning elevators and medical equipment.

Assets are places or things where economic, environmental, and social functions of the Town take place, or are the critical infrastructure required to support those functions. The *Climate Smart Resiliency Planning Evaluation Tool for New York State Communities* recommends a number of measures to increase the resiliency of New York State communities. Most measures begin with an identification of vulnerable assets and populations. A vulnerability assessment is then performed of Town-owned or controlled sites and facilities, infrastructure, contaminated sites, utilities, transportation systems, building stock (commercial and residential), emergency facilities, parks/recreation/public access areas, vulnerable populations (should be updated on a regular schedule and/or as new data becomes available). Finally, an implementation plan is developed and responsibilities assigned for specific actions to individuals or organizations, and timelines are established for each action.

4.2.1 Town Initiatives

The Town is conducting a vulnerability assessment to assess its susceptibility to sea level rise, damaging storm surges, and severe weather events. The assessment will include infrastructure, the general population, health and social service facilities, private properties, and septic systems. The USGS is conducting a post-Sandy mapping effort.

4.2.2 Current Programs and Policies

Huntington's most important technological resource for assisting with multi-hazard mitigation operations is its use of the Town of Huntington Geographic Information System (GIS), for Mapping and Modeling. GIS mapping and modeling is used to estimate flood hazards, debris volumes and distributions, hazard prone residences and businesses, and identify mitigation opportunities.

The Town of Huntington Geographic Information Systems Section maintains data on Huntington town and its villages, which can be used for a variety of analysis. The Town GIS is also integrated with the Federal Emergency Management Agency (FEMA) HAZUS-Multi Hazard (HAZUS-MH) software program. The HAZUS-MH program uses historical disaster data coupled with building permit information and GIS to produce estimates of disaster debris.

The Town GIS Manager is part of the Incident Command Staff, and can be reached at the Town EOC, during an emergency.

2011 – 2012, The Town initiated a facility inspection program, using GIS. The first phase of this project involved the inventory of town structures for annual insurance underwriting requirements. Under the original insurance program, the town had recorded 143 structures. In the Spring of 2012, the



Department of Finance worked with the GIS Staff to refine the insurance inventory, which had not been updated since 1996.

As a result of this 2012 analysis, the town added an additional 40 structures to the inventory. Each structure was assessed for its individual hazard vulnerabilities from storms. During the Summer of 2012, this inventory was submitted to the town's insurance underwriter for acceptance. Using this inventory, the town insurance underwriter worked with the Department of Finance to increase town coverages, and provided additional flood insurance for properties identified as having potential flood hazards. Super-storm Sandy in October, 2012, caused significant damages to town structures. The town was able to offset these liabilities through its revised insurance strategy; aggressive hazard mitigation and assessment. This information was used to establish flood policies on town properties.

2013 – The town prepared an after action assessment of the impacts of Hurricane Sandy. As part of that assessment, the town considered the effects of sea level rise, and climate change. Using highly accurate topographic data, obtained through light detection and ranging (LiDAR), the town was able to assess all properties within each flood zone, for hazard rating.

2014 – The town migrated to GIS Advanced Enterprise Servers. Huntington's GIS provides staff with a variety of resources for assessing impacts to the community. In addition, the GIS Staff has been trained to conduct assessments, and to perform a variety of analysis.

2014 – The town deployed mobile GIS for asset inspection and inventory as part of the Municipal Separate Storm Sewer (MS4) program. As part of this effort, 198 flood zones have been mapped within the town.

4.2.3 Potential Future Actions and Initiatives

- The Town of Huntington has applied to NYSERDA's RFP 3044 to conduct a NY Prize Stage 1 Feasibility Assessment for the Town of Huntington Community Microgrid located in Huntington, NY. The proposed microgrid will provide energy service to several critical facilities in the immediate area which serve a critical community need and have suffered from historic reliability issues in the past during Hurricane Sandy and Irene. The proposed Town of Huntington Community Microgrid fits all the goals and objectives of NY Prize, has the potential to be a true community microgrid, and increase distributed energy generation resources with an estimated capacity of six to ten megawatts.
 - The sites included in the proposed community microgrid include Huntington Town Hall, Huntington Hospital, Huntington Waste Water Treatment Plant, Huntington YMCA, and the Flanagan Senior Center. These sites are considered critical and would benefit from increased energy reliability. All sites are located within a diameter of 0.7 miles, in an area known as Huntington Village. This area is a busy downtown district and common community gathering place which has suffered from energy reliability issues in the past. Following Hurricane Sandy, this area was without power for ten days. Additionally, the lack of redundancy for Huntington Hospital when running on emergency back-up generation means their ability to perform critical medical procedures is severely limited when the electric grid is down.



- Successful microgrids provide continuous access to power. However microgrids must leverage existing assets and be designed to utilize cost-effective technologies and energy sources to be financially viable. The proposed community microgrid combines the installation of new natural gas combined heat and power (CHP) plants, with flexible electrical distribution system, energy storage components and renewable energy resources. The CHP will be the primary energy source of the community microgrid and will be supplemented by solar photovoltaic arrays and captured methane from a waste water treatment plant. Demand response, energy efficiency, and energy storage benefits will all be assessed to determine the optimal microgrid configuration.
- Electricity will be transmitted using existing power lines, which means ancillary commercial businesses and residences will benefit from the power provided through the community microgrid. However, using existing power lines may make the microgrid susceptible to downed power lines, therefore to provide additional resiliency the assessment will include evaluating looping, sectionalizing, and constructing underground utility lines. Further, the microgrid will need to isolate itself when the greater electric grid is experiencing problems. This will be achieved through remotely operated reclosers which will be located appropriately to isolate the microgrid as needed.
- Floodplain Inquiry Tool (2014, Planned for Public release in 2015) - The Floodplain Inquiry application is a configuration of the Town GIS FIRM Lookup application, which can be used by citizens, land development companies, and real estate professionals to locate parcels impacted by FEMA floodplain boundaries. This application provides access to authoritative floodplain boundary information (DFIRM panels) provided by the Federal Emergency Management Agency (FEMA) so informed decisions can be made during land development and home buying processes.
- Flood Planning (2011) - Flood Planning is used by the Town Staff for public safety, emergency management, public works, or planning to analyze the impact of seasonal flooding scenarios and develop flood response plans. Flood Planning allows you to analyze the impact of flooding for multiple flood levels and create a flood impact plan for each flood level. It also allows you to develop preliminary levee plans and budget estimates for each levee. The flood impact analysis identifies public infrastructure, critical facilities, and vulnerable citizens that may be impacted. This information will help you develop a plan to mitigate the impact on the community, and budget for the cost of proposed levees that may be necessary.
- Community Water Quality Status Tool (2015) - The Water Quality Status application is a configuration of an ArcGIS Online configurable application template. The configurable application template enables the town to utilize GIS data to provide residents with current water quality monitoring status of each waterway. Citizens can quickly determine if waterways or beaches are fishable and swimmable.
- Capital Improvement Planning Module (2015) - The Capital Improvement Planning map is currently being developed to assist town managers with water, sewer, and stormwater



infrastructure planning. This application is designed to rate the condition of infrastructure networks and estimate the cost of capital improvement projects. The tool is also being considered for incorporating sustainability metrics, and performance thresholds, which can be automated. To accomplish these tasks, the map includes flexible geo-processing models to rate condition and an interactive toolset to estimate project costs, and planning requirements. Huntington is the only local municipality on Long island with this capability. It is estimated that this tool will provide the town with approximately \$100,000 in avoided costs each year.

- MS4 Inventory Application (2014) - This GIS based application was developed to enable town-wide compliance with the EPA's stormwater discharge regulations and to assist staff in developing a stormwater management program. This solution allows field crews to collect stormwater asset locations and attach a photo of the completed inspection form. The information collected can then be used by the utility office staff for MS4 annual reports. MS4 Inventory Recorder is a configuration of ArcGIS Online and the Collector for ArcGIS application. The application was first deployed in the Fall of 2014, in anticipation of the EPA / DEC audit. During the EPA audit, this application was cited as part of the top 1% of compliance practices in the nation.
- Construction Site Violations Tool (2015) - The Construction Site Violations solution was developed to compliment the MS4 Inventory Application. This solution allows town field staff to record water/wastewater construction site violations using a mobile device. Construction Site Violations is a configuration of ArcGIS Online and the Collector for ArcGIS application. This allows field staff to input a type and subtype of violation and attach photos as needed regardless of connectivity to the office network. This map can be used in the field assuming cellular coverage is available or offline editing is enabled. This application will be deployed in the Summer of 2015.
- Illicit Discharge Trace Tool (2016) - The Illicit Discharge Trace app allows the user to specify a location, such as the site of stormwater pollution, and trace the network upstream to find potential polluters. This JavaScript based app allows for the input of one or more trace points to begin the upstream trace from. This information is passed to a back end processing model to run the analysis. The results are returned to the app, where connected mains and business within a proximity to stormwater inlets are returned. These resulting business locations can be saved to a feature service or CSV file. This application is currently under review by the GIS Staff.
- Night-Time Flow Analysis (2015) - In 2015, the GIS staff acquired a The Nighttime Flow Analysis solution, which provides a water utility toolset to create, monitor, update and retire a Sub-DMA for the purpose of identifying areas of potential high water loss. For additional details, please read Detecting Water Loss Early With ArcGIS – Using Nighttime Flow Analysis. This solution includes a series of services, maps, and apps for use throughout the Dix Hills Water District.
- Public Parking (2015) - Public Parking is a configuration that can be used by parking staff to inventory parking assets and promote public parking alternatives in a community. The provision of clean, safe, and affordable public parking (lots, garages, on-street spaces, and pay stations) is critical to vibrant downtowns and neighborhoods. The Parking Inventory map and Collector for



ArcGIS application can be used by parking staff to inventory available parking assets in the field. Once parking assets have been inventoried, the Public Parking map and a configuration of the ArcGIS Online Finder configurable application templates can be used by citizens and visitors to locate public parking options in a community.

- Impact Summary Map (2014) - The Impact Summary Map application enables town emergency staff to quickly configure, deploy and communicate impacts from a disaster. The Impact Summary Map can be used by emergency management organizations to quickly communicate impact of an event to interested parties. It utilizes enriched content to facilitate quick summary information for the affected population. Huntington is the only municipality with this capability on Long Island.
- Huntington Walkable Community Map (2015) - The concept of a 'walkable community' serves as a measurable indicator of quality of life at the neighborhood level. Walkable communities reduce auto dependency, provide access to amenities, and encourage the development of a vibrant neighborhood. The Department of planning and Environment is currently using GIS to create a walkable index map to aid future land use planning. In the future, the town may use such an index to evaluate existing community needs and to guide future development.
- GIS Based Facility Planner (2016) - In 2016, the town will have the ability to use the GIS for managing its facility technology systems. The ability of GIS to do analysis and apply models based on different scenarios allows facility managers to create an efficient building from the start that provides the best space usage and energy efficiency possible. As the building matures, staff can model asset usage and depreciation over time and manage security and environmental costs. Most importantly, GIS opens up facilities-specific software and data for use across the enterprise. The town can deploy GIS to assemble and manage the enormous quantities of information provided by building automation and energy management systems and visualize that information in real-time.
- Solar Radiation Map (2015) - Analysis incoming solar radiation (insolation) received from the sun is the primary energy source that drives many of the earth's physical and biological processes. Understanding its importance to landscape scales is key to understanding a broad range of natural processes and human activities.
 - With landscape scales, topography is a major factor that determines the spatial variability of insolation. Variation in elevation, orientation (slope and aspect), and shadows cast by topographic features all affect the amount of insolation received at different locations. This variability also changes with time of day and time of year and in turn contributes to variability of microclimate including factors such as air and soil temperature regimes, evapotranspiration, snow melt patterns, soil moisture, and light available for photosynthesis.
 - The solar radiation analysis tools in the ArcGIS Spatial Analyst extension enable you to map and analyze the effects of the sun over a geographic area for specific time periods. It accounts for atmospheric effects, site latitude and elevation, steepness (slope) and



compass direction (aspect), daily and seasonal shifts of the sun angle, and effects of shadows cast by surrounding topography. The resultant outputs can be easily integrated with other GIS data and can help model physical and biological processes as they are affected by the sun.

- Consider establishing town-wide cooling (and warming) centers. A cooling center is a temporary air-conditioned public space set up by local authorities to deal with the health effects of a heat wave. Usually sited at several locations throughout a city, cooling centers are meant to prevent hyperthermia, especially among the elderly without air conditioning at home. At this time this is done only at the county level.
- Consider retrofitting air conditioning, air source heat pumps or geothermal heat pumps in schools to increase student comfort and learning and to use as cooling centers in the summer.
- Consider increasing and promoting the use of natural mosquito controls to reduce vector-based illness:
 - Keep properties free of stagnant water to reduce mosquitoes breeding grounds
 - Introduce and expand the use of plants and natural mosquito predators to keep mosquitoes away from inhabited areas and reduce their numbers.
 - Pesticides should be discouraged as marginally effective and a major source of water pollution.
- Consider increasing and promoting the use of planting of “line-friendly” trees (lists available from PSEG) along power line right of ways, especially when larger trees are removed. These “line-friendly” trees grow beneath power lines, eliminating power outages due to falling trees, while still providing shade and carbon fixing (absorption of CO₂ from the air). They should be of diverse species so they are more resistant to disease. Many of the trees listed are LI natives and available free of charge as nursery seedlings from the National Arbor Day Foundation.



4.3 Resilience Strategies

The terms “adaptation” and “resilience” are related but often used interchangeably. A recent article defines ‘resilience’ this way: *Community resilience is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change*¹⁹. Adaptation is the set of strategies that communities use to become more resilient. Adaptation strategies to increase the resilience of housing, infrastructure, natural and cultural resources, and health and social service facilities typically fall into the three categories - protection, accommodation, and retreat.

Protection strategies include natural (green or soft) solutions and constructed (gray or hard) solutions. Generally, natural protection strategies, including maintenance of local and regional ecosystems, habitat restoration, coastal buffers, wetland mitigation, urban reforestation, and expanded green infrastructure, are preferred to ‘hard’ structures. These “green” solutions offer ecological benefits in addition to their value for adaptation. Certain community assets are location-dependent and therefore ‘hard’ protection systems may be the only feasible option.

Accommodation strategies do not prevent flooding or inundation, but allow structures to survive (*i.e.*, it makes them more resilient). Examples include elevation of structures and stormwater system improvements.

Retreat strategies do not prevent flooding or inundation but offer options for the loss of use or property value. Examples include buyouts, acquisitions, transfer of development rights, purchase of development rights, rolling easements, and conservation easements.

Still other strategies involve new programs, policies, plans, actions, and data collection. These adaptation strategies are categorized in the NYRCR program as Community Planning and Capacity Building.

Following are the strategies included in Suffolk County’s Hazard Mitigation Plan as well as other strategies under consideration. The strategies from the Mitigation Plan and the others are arranged into the Recovery Support Function categories of the NYRCR program as follows.

4.3.1 Community Planning and Capacity Building

- Integrate sea-level rise planning into other plans and documents. To be effective, local comprehensive plans, hazard mitigation plans, emergency management plans, and post-disaster recovery plans should all address the potential impacts of sea-level rise.
- Expand emergency preparedness public awareness campaign, potentially partnering with the Suffolk County Office of Emergency Management. Continue to distribute and post the Town’s “Be Prepared...” flyer.
- The Town of Huntington will investigate participation in the National Flood Insurance Program’s *Community Rating System*

¹⁹ *Definitions of Community Resilience: An Analysis*, 2013. Community & Regionals Resilience Institute. 14pp.



- Expand floodplain management activities to receive additional FEMA Community Rating System points (residents receive larger discounts on NFIP premiums)
- Promote 'No Adverse Impact' concepts from the National Association of Floodplain Managers.
- Track repetitive loss properties and develop potential strategies for transitioning properties to non-residential/public use.

4.3.2 Health and Social Services

- Consider partnerships with local hotels and other "safe" structures. Or consider storm-proofing Town facilities to increase shelter space
- Consider partnerships with local non-profits and/or elderly care specialists to assist individuals during emergency situations
- Promote Town's Extreme Heat Response Plan, which provides for access to cooling centers during dangerous heat waves
- In preparing for a storm or emergency event, efforts should be made to restrict access to highly vulnerable and/or dangerous areas. This can help evacuation times and reduce unnecessary risks.

4.3.3 Housing

- Work with Suffolk County to expand the use transfer of development rights (TDRs) programs to reduce risks to vulnerable properties, direct development away from undeveloped land, and create compact, walkable communities
- Investigate impact of building code revisions for properties in vulnerable areas. For example, waiving height limits in flood hazard areas to accommodate elevated properties.

4.3.4 Infrastructure

- Reduce reliance on municipal stormwater system through smart landscaping, pervious surfaces, open space protection, and on-site retention
- Develop a wellhead protection program for primary and secondary recharge zones
- Upgrade Town-wide emergency communication systems - radio, mobile cell towers, satellite phones
- Wastewater treatment plant upgrade plans revised to include elevated structures

4.3.5 Natural and Cultural Resources

- Maintain and allow for the expansion of green/natural infrastructure. Set targets for forestry coverage, wetlands, and pervious surfaces
- Evaluate various restoration techniques in marshes and wetlands. Healthy wetlands will adapt and grow with sea level rise, providing a natural buffer for low-lying coastal areas
- Preserve land for public uses for in high-risk areas to reduce vulnerability of residents and properties
- Restore USGS monitoring of ground and surface water
- Develop policies and plans for periods of declared drought.



APPENDICES

Appendix A: Possible and Anticipated CSC Certification Points

Appendix B: Pending Town of Huntington Projects

Appendix C: Town of Huntington Case Studies



Appendices



APPENDIX A

Possible and Anticipated CSC Certification Points

Climate Smart Communities Certification Program Checklist

Local Government Name: Town of Huntington

Action #	Action Name	Action Pathway Phase	Possible Points	Tiered Points	Priority	Currenty Reviewable	Anticipated Points	Notes	Awarded Points
Pledge Element 1: Pledge to be Climate Smart Community			31				31		0
1.1	Pass a resolution adopting the CSC Pledge	Commit	4		✓	Yes	4	Resolution adopted: 7/24/2012	
1.2	Create a community Climate Smart Community task force focused on climate mitigation and adaptation	Build Capacity	8	✓	✓	Yes	8	Advisory Committee on Energy Efficiency, Renewables & Sustainability (ACEERS)	
1.3	Appoint a Climate Smart Community coordinator	Build Capacity	8		✓	Yes	8	Terese Kinsley	
1.4	Create an internal green team focused on climate mitigation and adaptation	Build Capacity	8	✓	✓	Yes	8	how does this differ from task force? ACEERS?	
1.5	Join a national or regional climate campaign or program	Build Capacity	3			Yes	3	USDOE Better Buildings Challenge, LI Clean Energy Leadership Task Force, LI Green Homes Consortium, NYSERDA's Cleaner Greener Communities, Suffolk County Planning Commission Energy & Environment Task Force, Greater Long Island Clean Cities Coalition, Cool Cities	
Pledge Element 2: Set goals, inventory emissions, plan for climate action			40				32		0
Establish a baseline			16				8		0
2.1	Develop a government operations GHG emissions inventory	Assess, Plan, Govern	8		✓	Yes	?		
2.2	Develop a community GHG emissions inventory	Assess, Plan, Govern	8		✓	Yes	8	NYIT LICFP (2005-2010)	
Set goals			8				8		0
2.3	Establish a government operations emissions reduction target	Assess, Plan, Govern	4		✓	Yes	4	Target of 20 % reduction in energy use intensity by 2020 from 2005 baseline	
2.4	Establish a community emissions reduction target	Assess, Plan, Govern	4		✓	Yes	4	20% by 2020 from 2005 baseline	
Plan for climate action			16				16		0
2.5	Develop a government operations climate action plan	Assess, Plan, Govern	8	✓	✓	Yes	8	CSC CAP	
2.6	Develop a community climate action plan	Assess, Plan, Govern	8	✓	✓	Yes	8	CSC CAP	
Pledge Element 3: Decrease community energy use			138				73		0
Building and stationary equipment			55				44		0
3.1	Conduct energy audits of local government buildings	Assess, Plan, Govern	8	✓	✓	Yes	8	Boxer Court Maintenance Facility, Cavanagh Maintenance Facility, Crab Meadow Golf Course, Dix Hills Park, East Northport Garage, Elwood Administration Highway Department, Flanagan Senior Center, Hart Bus, LIRR North Parking Garage, Oakwood Highway Facility	
3.2	Upgrade interior lighting	Implement	5	✓		Yes	5	Town Hall, WWTP	
3.3	Upgrade HVAC equipment	Implement	5	✓		Yes	5	Town Hall, WWTP	
3.4	Install water-efficient fixtures	Implement	4	✓		Yes	?	?	
3.5	Install a building energy management system (EMS)	Implement	5	✓		Yes	5	Town Hall	
3.6	Upgrade building envelope	Implement	7	✓		No	?	Was not clear from CAP - need to ask	
3.7	Adopt a green building standard for local government buildings and facilities	Assess, Plan, Govern	4	✓		Yes	4	As a Better Buildings Challenge Community Partner, the Town has committed to reducing the energy intensity of its municipal properties 20% by 2020.	
3.8	Build a new green building	Implement	10	✓		No	10	"Armory" building adaptive reuse - currently in planning stages? Not sure if it will qualify	
3.9	Upgrade water or wastewater treatment facilities and infrastructure	Implement	7	✓		Yes	7	HVAC System Upgrade (Electric to Natural Gas); Energy Efficient hybrid compressor blowers (3) that reduced amount of energy needed for drying post-treatment sludge; Retrofitted natural in-pipe, up-stream biodegrading technology, reducing energy usage; Energy Efficient LED Lighting Retrofit (All Fixtures).	
Fleet and vehicle fuel			18				8		0
3.10	Adopt a vehicle fleet efficiency policy	Assess, Plan, Govern	3			Yes	3	CNG sanitation truck requirement. Unable to locate policy for standard vehicles.	
3.11	Right-size the local government fleet	Implement	3	✓		Yes	?		

Climate Smart Communities Certification Program Checklist

Action #	Action Name	Action Pathway Phase	Possible Points	Tiered Points	Priority	Currenty Reviewable	Anticipated Points	Notes	Awarded Points
3.12	Replace traditional vehicles with advanced vehicles	Implement	5	√		Yes	5	As of 2010, the Town had 27 hybrid vehicles in its inventory and had replaced gasoline-powered General Services equipment with electric versions. Need updated numbers	
3.13	Adopt an anti-idling policy for government vehicles	Assess, Plan, Govern	3			Yes	?		
3.14	Implement a car-sharing program for local government staff	Implement	4	√		Yes	?		
Outdoor lighting			17				0		0
3.15	Convert streetlights to LED	Implement	5	√		Yes	?		
3.16	Convert traffic signals to LED	Implement	4	√		Yes	?		
3.17	Reduce number of outdoor lighting fixtures	Implement	4	√		Yes	?		
3.18	Upgrade outdoor lighting (other than streetlights and traffic signals) to more efficient and/or solar technology	Implement	4	√		Yes	?	Need to ask	
Government solid waste			13				3		0
3.19	Adopt a waste management strategy for government hosted and permitted events	Assess, Plan, Govern	2	√		Yes	?		
3.20	Provide recycling bins next to all trash receptacles in local government buildings	Implement	3	√		Yes	?		
3.21	Provide organic waste collection and composting in local government buildings	Implement	3	√		Yes	?		
3.22	Provide e-waste collection in local government buildings	Implement	3	√		Yes	3		
3.23	Conduct a local government waste audit and track diversion rate over time	Assess, Plan, Govern	2			Yes	?		

Climate Smart Communities Certification Program Checklist

Action #	Action Name	Action Pathway Phase	Possible Points	Tiered Points	Priority	Currenty Reviewable	Anticipated Points	Notes	Awarded Points
Financial and policy mechanisms			18				14		0
3.24	Adopt an environmentally preferable purchasing policy	Assess, Plan, Govern	4	√		Yes	?		
3.25	Establish a financing mechanism for energy efficiency and renewable energy projects in government owned buildings	Implement	5			Yes	5	There is an EOSPA green fund directed by ACEERS that is available to promote energy efficiency projects.	
3.26	Incorporate energy efficiency and waste handling provisions in standard specifications and government contracts	Assess, Plan, Govern	3	√		Yes	3	Waste-handling provisions: CNG requirement for refuse haulers	
3.27	Utilize a green or sustainability rating system for infrastructure improvement projects	Implement	6	√		No	6	Town Hall: LEED feasibility study/analysis.	
Employee and staff behavior			8				0		0
3.28	Subsidize and incentivize employee alternative commuting	Implement	3	√		Yes	?		
3.29	Engage employees through a green pledge or competition	Implement	2			Yes	?		
3.30	Incorporate green principles, commitments or requirements into staff training	Implement	3			Yes	?	Rec. in CSC CAP	
Energy and GHG management policies and systems			9				4		0
3.31	Implement an energy or GHG management system	Implement	5			Yes	?		
3.32	Adopt an energy benchmarking requirement for government-owned buildings	Implement	4	√		Yes	4	Long Range Energy Efficiency Plan, tracking energy use in all of its facilities using the USEPA Portfolio Manager bench-marking tool. The ten (10) facility energy auditing of its major facilities following Town Hall and the wastewater treatment plant is the start of a Town-wide project to audit all Town facilities and buildings.	
Pledge Element 4: Increase community use of renewable energy			62				23		0
Policies, planning, and financing			20				5		0
4.1	Adopt a green power purchase policy to ensure increasing local government energy supplies come from renewables	Assess, Plan, Govern	4	√		Yes	?		
4.2	Require that new construction of local government buildings is "PV-Ready"	Assess, Plan, Govern	4			No	?		
4.3	Conduct feasibility studies for renewable energy installations	Assess, Plan, Govern	5			Yes	5	Solar PV installation at Town Hall completed.	
4.4	Purchase renewable energy credits (RECs)	Implement	7	√		Yes	?		
Increase use of renewables			42				18		0
4.5	Install a geothermal heat pump or other geothermal technology at a new or existing public facility	Implement	9			Yes	?		
4.6	Install solar hot water and/or solar photovoltaic technology on public property	Implement	9			Yes	9	12.6 kW Solar PV used to power the Electric Vehicle (EV) Charging Station at LIRR Station in Huntington Station; 5 kW Rooftop PV on new Business Incubator; 28 kW PV system on the roof of Town Hall.	
4.7	Serve as a host site for a renewable energy installation and enter into a long-term service contract or power purchase agreement (PPA)	Implement	9			Yes	9	Need to confirm	
4.8	Install a wind system on public property	Implement	9			Yes	0		
4.9	Install a wood pellet heating system on public property	Implement	6			Yes	0		

Climate Smart Communities Certification Program Checklist

Action #	Action Name	Action Pathway Phase	Possible Points	Tiered Points	Priority	Currenty Reviewable	Anticipated Points	Notes	Awarded Points
Pledge Element 5: Realize benefits of recycling and other climate-smart solid waste management practices			49				21		0
Waste diversion policies and plans			6				0		0
5.1	Adopt a zero waste initiative policy	Assess, Plan, Govern	3			Yes	0	Not in CAP	
5.2	Discourage the use of disposable bags	Assess, Plan, Govern	3	√		No	0	Not in CAP	
Implement waste diversion strategies			43				21		0
5.3	Participate in the EPA WasteWise program	Implement	2	√		Yes	?		
5.4	Implement a pay-as-you-throw or similar unit pricing program	Implement	6	√		Yes	?		
5.5	Adopt a construction and demolition waste reduction program or policy	Implement	3	√		Yes	?		
5.6	Set up and manage a resource recovery center to encourage reuse of gently used or new materials that have been discarded	Implement	3			Yes	?		
5.7	Offer recycling to residents	Implement	8	√		Yes	8		
5.8	Offer recycling to commercial entities (or require that they recycle)	Implement	8	√		Yes	8		
5.9	Provide recycling bins in public places and events	Implement	3	√		Yes	3		
5.10	Provide compost bins to residents (for sale or free)	Implement	2			Yes	?		
5.11	Create an organics or yard waste collection program	Implement	6			Yes	?		
5.12	Host household hazardous waste collection days	Implement	2			Yes	2		
5.13	Create an educational campaign to encourage recycling, composting and waste reduction	Implement	2			Yes	2		
Pledge Element 6: Reduce greenhouse gas emissions through use of climate-smart land-use tools			109				57		0
Planning			9				9		0
6.1	Develop and adopt a comprehensive plan with sustainability elements	Assess, Plan, Govern	9	√		No	9	TOH Master Plan (Horizons 2020). Also, Renewable Energy Task Force 2010 Draft Energy Master Plan	
Land use and building codes			31				19		0
6.2	Incorporate smart growth principles into land-use policies and regulations	Assess, Plan, Govern	8	√		No	8	TOH Master Plan (Horizons 2020)	
6.3	Adopt a renewable energy ordinance	Assess, Plan, Govern	4	√		Yes	4	fast track permitting	
6.4	Establish green building codes	Assess, Plan, Govern	6			Yes	6	HERS residential rating system, LEED for commercial incentives	
6.5	Create resource-efficient site design guidelines	Assess, Plan, Govern	4			No	4	?	
6.6	Incentivize renewable energy and energy efficiency projects	Implement	5			Yes	5	LEED Commercial incentives	
6.7	Adopt land-use policies that support or incentivize farmers' markets, community gardens and urban and rural agriculture	Assess, Plan, Govern	4	√		Yes	?	Need more specifics	
Resource-efficient transportation			52				18		0
6.8	Adopt green parking lot standards	Assess, Plan, Govern	4			Yes	?	Need to ask	
6.9	Adopt a complete streets policy	Assess, Plan, Govern	4			No	0		
6.10	Implement strategies that support bicycling and walking	Implement	10	√		Yes	?	recommendations in energy master plan/TOH master plan - any implemented?	
6.11	Install electric-vehicle infrastructure	Implement	8			Yes	8	12.6 kW Solar PV used to power the Electric Vehicle (EV) Charging Station at LIRR Station in Huntington Station	
6.12	Implement strategies that increase public transit ridership and alternative transport modes	Implement	10	√		Yes	?	recommendations in energy master plan/TOH master plan - any implemented?	
6.13	Implement a Safe Routes to School program	Implement	3			Yes	?		
6.14	Implement traffic calming measures	Implement	5	√		No	5	Need examples	
6.15	Adopt and enforce an anti-idling ordinance	Assess, Plan, Govern	3			Yes	0		
6.16	Implement transportation technology solutions	Implement	5	√		No	5	CNG refuse haulers	
Natural Resource and Open Space Preservation			17				11		0
6.17	Develop a natural resource inventory	Assess, Plan, Govern	5			No	5	GIS?	
6.18	Develop a local forestry or tree planting project or program	Implement	6	√		Yes	?		
6.19	Preserve natural areas through zoning or other regulations	Assess, Plan, Govern	6			Yes	6		
Pledge Element 7: Enhance community resilience and prepare for the effects of climate change			117				41		0
Establishing a baseline			8				8		0
7.1	Conduct a vulnerability assessment	Assess, Plan, Govern	8	√	√	Yes	8	Hazard Mitigation Plan? Planning for climate change: An analysis of vulnerability in Suffolk County, New York ?	
Goals			2				0		0
7.2	Develop a climate resilience vision and associated goals	Assess, Plan, Govern	2			Yes	?		
Planning and policy			15				6		0
7.3	Review existing community plans and projects to identify climate adaptation strategies and policies or projects that may decrease vulnerability	Assess, Plan, Govern	4	√	√	Yes	?	purpose of this plan	
7.4	Develop climate adaptation strategies	Assess, Plan, Govern	5	√		Yes	?	purpose of this plan	
7.5	Incorporate climate resiliency vision, goals, and strategies into local plans and projects	Assess, Plan, Govern	3			Yes	3	Energy Master Plan	
7.6	Update the multi-hazard mitigation plan to address changing conditions and identify specific strategies to reduce vulnerability to natural hazards	Assess, Plan, Govern	3			Yes	3	Updated at County-level with Town participation	
Strategies to address extreme heat			10				0		0
7.7	Develop and implement a heat emergency plan	Assess, Plan, Govern	4			No	?		
7.8	Require shade structures and features in public spaces	Assess, Plan, Govern	4			Yes	?		
7.9	Open new or expand existing cooling centers	Implement	2			No	?		
Strategies to address flooding			68				27		0

DRAFT- FOR DISCUSSION PURPOSES ONLY

Climate Smart Communities Certification Program Checklist

Action #	Action Name	Action Pathway Phase	Possible Points	Tiered Points	Priority	Currenty Reviewable	Anticipated Points	Notes	Awarded Points
7.10	Create a community-wide watershed assessment to address flooding and water quality priorities	Assess, Plan, Govern	4			Yes	4	Crab Meadow Watershed plan. Others?	
7.11	Adopt a floodplain management and protection ordinance to reduce vulnerability to flooding and erosion	Assess, Plan, Govern	3			Yes	3		
7.12	Conserve, revegetate and reconnect floodplains and buffers in riparian areas	Implement	7			Yes	?		
7.13	Protect natural areas for species migration and ecosystem resilience	Implement	7	√		Yes	7	Environmental Open Space & Park Fund Advisory Committee (EOSPA); Conservation board	
7.14	Facilitate a strategic relocation of uses that are not water dependent from flood prone areas	Implement	5	√		Yes	?		
7.15	Promote community flood prevention strategies through the National Flood Insurance Program Community Rating System	Assess, Plan, Govern	3	√		Yes	?		
7.16	Use green infrastructure to manage stormwater in developed areas	Implement	7	√		Yes	?	Need to ask for examples	
7.17	Conserve wetlands and forests to manage stormwater, recharge groundwater and mitigate flooding	Implement	6	√		Yes	6	Environmental Open Space & Park Fund Advisory Committee (EOSPA); Conservation board	
7.18	Use natural, nature-based or ecologically enhanced shoreline protection	Implement	8	√		Yes	?	Need to ask for examples	
7.19	Extend areas in which the two foot freeboard requirement applies	Assess, Plan, Govern	3			Yes	?		
7.20	Require consideration of sea-level rise in planning coastal development	Assess, Plan, Govern	3			Yes	3	TOH master plan (Horizons 2020)	
7.21	Right-size bridges and culverts, and remove unnecessary and hazardous dams	Implement	8	√		No	?		
7.22	Develop or enhance early warning systems and community evacuation plans	Implement	4			Yes	4	Town Website, SC Hazard Mitigation Plan etc.	
Strategies to address drought surge			14				0		0
7.23	Implement a water conservation and reuse program	Implement	6			Yes	?		
7.24	Encourage xeriscaping	Assess, Plan, Govern	2	√		Yes	?		
7.25	Implement a source water protection program	Implement	6	√		Yes	?		
Pledge Element 8: Support a development of a green innovation economy			56				16		0
Training and Education			5				0		0
8.1	Create a green jobs training program	Implement	3			Yes	?		
8.2	Hold green vendor fairs	Implement	2			Yes	?		
Planning and Leadership			9				4		0
8.3	Include green industries in economic development plans	Assess, Plan, Govern	4			Yes	4	Local business incubator	
8.4	Incorporate sustainability requirements in local government funded programs or projects	Implement	5			No	?	need examples	
Local Business Engagement and Support			9				0		0
8.5	Adopt a green procurement policy that emphasizes local sourcing	Implement	4	√		Yes	?		
8.6	Create and promote local farmers' markets	Implement	3			Yes	?		
8.7	Create a "buy local/buy green" campaign	Implement	2			Yes	?		
Siting and Incentivizing Green Business/Industry			21				7		0
8.8	Redevelop a brownfield site	Implement	10	√		Yes	?	Need examples	
8.9	Establish incentives for green industry or businesses to locate in community	Implement	4			Yes	?	Need examples	
8.10	Support alternative transportation fuel supply infrastructure	Implement	7	√		Yes	7	CNG Stations? EV charging at LIRR station	
Creating Demand for Green Jobs			12				5		0
8.11	Adopt energy benchmarking requirements for privately owned buildings	Implement	5	√		Yes	5	LEED Commercial requirements	
8.12	Establish a residential energy efficiency financing program	Implement	7	√		Yes	0	LI Green Homes,	
Pledge Element 9: Inform and inspire the public			18				18		0
9.1	Create a climate change education, outreach, and engagement program, focusing on mitigation and adaptation	Build Capacity	4	√		Yes	4	ACEERS programming	
9.2	Create and support an energy reduction campaign or challenge	Implement	5	√		Yes	5	Residential incentives for energy efficiency (LEED property tax incentive)	
9.3	Host climate related educational seminars, workshops, conferences, or fairs	Implement	3			Yes	3	need examples	
9.4	Maintain a website on local climate protection efforts	Implement	3			Yes	3	Town website is up-to-date and easy to navigate	
9.5	Use social media to inform the community about the progress of local government's efforts	Monitor and report	3			Yes	3		
Pledge Element 10: Commit to an evolving process of climate action			11				7		0
10.1	Report on progress annually	Monitor and report	4			Yes	?		
10.2	Update strategies and plan(s)	Assess, Plan, Govern	4			Yes	4		
10.3	Cooperate with neighboring communities and partner agencies	Build Capacity	3			Yes	3		
Innovation			15				15		0
11.1	Implement a new innovative action	Implement	10	√		Yes	10	CNG refuse haulers, single stream recycling,	
11.2	Implement an action using an innovative approach	Implement	5			Yes	5	Need examples	
Performance Bonus			230				115		0
12.1	Reduce GHG emissions from government owned facilities	Implement	40	√		Yes	40	Town Hall: solar pv, hvac, lighting upgrades	
12.2	Reduce GHG emissions from government owned vehicles	Implement	15	√		Yes	15	conversion to hybrid vehicles, CNG refuse haulers	
12.3	Increase use of renewables for local government operations	Implement	40	√		Yes	40	Town Hall solar PV	
12.4	Reduce waste volume from local government operations	Implement	15	√		Yes	?		
12.5	Reduce community-wide waste volume	Implement	20	√		Yes	20	Single-stream recycling program should reduce waste?	
12.6	Reduce community-wide GHG emissions from transportation	Implement	50	√		Yes	?		
12.7	Reduce community-wide GHG emissions from buildings	Implement	50	√		Yes	?		
TOTAL			876				449		0



Appendices



APPENDIX B

Pending Town of Huntington Projects

Pending Town of Huntington Projects

Projects and Policies Currently Under Consideration, Development or Implementation by the Town:

- Pursuing lighting and HVAC upgrades in Town facilities
- Pursuing LEED Certification for new business incubator
- Pursuing online building portfolio management
- Pursuing Huntington Armory renovation project
 - Continue with budgeting for an energy efficient renovation including; a geothermal HVAC system, Solar PV and a food green roof, to convert the former New York State Armory into the James D. Conte Community Center located at 100 East 5th Street, Huntington Station which is classified as a New York State Brownfields Opportunity Study Area, Environmental Justice Area, and a Low moderate Income Census Tract area.
- Continue Long Range Energy Efficiency Plan to audit all Town facilities and buildings
- As part of the operations of the Town of Huntington's Wastewater Treatment Plant, the methane gas that is generated in the digesters is currently flared off. A new project would capture that methane gas and supplement it with a new natural gas line to run a new 65kW Micro Turbine for Combined Heat and Power (CHP). The electricity generated by the micro turbine would reduce the electrical load of the sewage treatment plant by approximately 550,000 KWh per year, and ease the electrical demand on the grid. In addition, the waste heat generated by the micro turbine would be used to heat the digesters which are currently heated by a boiler operating on fuel oil. Therefore, converting the boiler to natural gas will eliminate the annual fuel oil consumption of approximately 13,000 gallons per year. The boiler will only be used to supplement the waste heat from the micro turbine. The elimination of the methane gas emissions will eliminate average annual Greenhouse Gas emissions by approximately 5,000 Metric Tons of Carbon Dioxide Equivalent (MtCO₂e).
- Replace all lighting fixtures at LIRR Huntington Station North Parking Garage with induction fixtures funded in part with EOSPA funds.
- Ongoing conversion of the refuse hauling fleet to CNG.
- Ongoing retrofitting and/or conversion of its HART bus fleet to Clean Diesel. Ongoing conversion of vehicle fleet to more energy efficient and/or hybrid cars/trucks.
- Collaborate with other Nassau and Suffolk towns to obtain operating experience and cost/benefit information on the operation of fleet vehicles operating with alternate fuels. Compare the results with the operating experience and cost data for the Huntington Town owned vehicles.
- The "Armory" project and its adaptive reuse is in the planning stage. If it can be used as a model green renovation, its success will serve as a testament to comprehensive energy choices and climate smart considerations. Recognition that grant monies may be available serves as an example of all-encompassing Operations planning.



Appendices





APPENDIX C

Town of Huntington Case Studies

Appendices



Energy Efficiency & Conservation Block Grant (EECBG) Project

Town of Huntington, NY

Town: Huntington

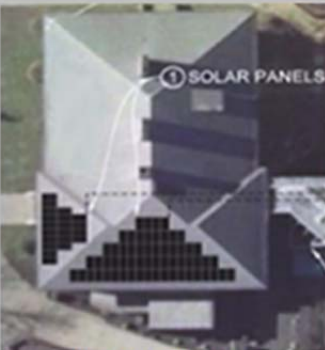
Population: 203,264

Project Size: 28.0 kW

Yearly Production: 36,000± kWh



Solar panels installed on Town Hall



Solar panel design

Town solar project serves as renewable energy beacon for community

Huntington, a town located in the western part of Suffolk County on Long Island, is a leader in renewable energy. A US Department of Energy Rooftop Solar Challenge II jurisdiction, Huntington has long been committed to sustainability. In November of 2010, Huntington installed a 28 KW solar PV system on Town Hall, an 111,000 square foot building with over 30 offices. The solar PV system was comprised of two separate 14 KW solar arrays. One array was placed on the south facing roof and the other placed on the west facing roof. The Project was undertaken through the Energy Efficiency and Conservation Block Grant (EECBG) program. In March of 2011, the installation of the panels, solar power inverter, and community PV system kiosk was completed. The kiosk, located in the lobby of Town Hall, provides the public with renewable energy and energy efficiency learning tool. The kiosk includes real time monitoring, total production rate, and cost and energy savings from the time the system was on-line.

A request for proposals (RFP) was issued by the Town to receive bids from qualified solar contractors in compliance with NYS procurement guidelines. The Town received technical assistance from the US Department of Energy in order to comply with EECBG Davis-Bacon and Buy America guidelines. Repairs to the roof were also bid, contracted, installed, and completed prior to the solar installation under a separate Town Capital project. All construction was managed through the Town's Department of Engineering Services.

The project was developed as a showcase for Huntington residents about the benefits of renewable energy. The educational kiosk, located in the Town Hall lobby, provides an educational opportunity for residents to view solar energy production and energy savings in real time.

Challenges:

The Town was obligated to follow specific procurement requirements and purchasing procedures as governed by New York State law in addition to Federal law regarding use of Federal grant funds. Installing new technology and working under a new set of procurement requirements, means understanding and complying with procurement guidelines will add to the project timeline.

Lessons Learned:

Streamlining the design and procurement process, in addition to completing the learning curve on the initial solar installation, will make future projects move more quickly and reduce unneeded resources being committed to that process. Working closely with all parties including the US Department of Energy, the Town Department of Engineering Services, the Town Department of General Services, and the Chief Sustainability Officer ensured the project was a top priority. Future projects will be less costly given the falling prices in solar PV technology.

Results:

The project has received positive feedback from residents who visit Town Hall and view the educational kiosk and has been seen as a great resource for residents to learn about solar. After completion of the solar PV project, records have indicated there was \$23,153.36 savings in electricity expenditures in 2011 compared to 2009, representing approximately 12% savings. Kilowatt hours used dropped by 39,000 kWh and peak demand was reduced by 187.2 kW on average between the two years. Recent monitoring and reporting has shown that this trend has continued.



Appendices



Energy Efficiency & Conservation Block Grant (EECBG) Projects

Town of Huntington, NY



Energy Efficient Street Lights

The single largest energy expense for the Town of Huntington (TOH) is the cost to keep its Street Lights turned on during evening and nighttime hours. It is for this reason that Huntington made Street Lighting its top EECBG block grant priority when seeking authorization from the United States Department of Energy (USDOE) for expenditure of grant funding.

Beginning in June 2010, Huntington began replacing its inventory of classic High Pressure Sodium (HPS) streetlights with high-efficiency Induction lighting lamp fixtures. Based on the exceedingly high return on investment (ROI) for this project Huntington received a second grant from the New York State Energy Research & Development Authority (NYSERDA) to expand the project and Huntington include matching funds in its Capital Budget.

Energy Efficient Street Lights Project Summary

Project: 2010 - Present	Bulb Type	USDOE/NYSERDA Funds	TOH Funds	Capital Funds	Total Savings: (kWh)	Dollar Savings	Emission Reductions (CO ₂ e)
New Installations	Induction Lamp	2,150	1,846	1,004	5,000 2,137,805 kWh	\$284,795	940,405 lbs

^a KiloWatt Hours (composite reduction of 59% in kWhs of energy consumed).



Long Range Energy Efficiency Plan

Energy Analysis & Long Range Energy Efficiency Plan: In order to make sure the Town can upgrade all of its energy systems in a logical and efficient manner, Huntington completed a ten (10) facility energy audit of its major facilities following Town Hall and the STP.

The long range plan recommendations include an estimate 5.7-million BTU savings electricity, oil and natural gas consumption. Implementation of these anticipated projects will reduce energy usage by 16%. Those energy saving would represent a potential return on investment (ROI) of nearly 25% for future energy efficiency capital expenditures.



Energy Efficiency & Conservation Block Grant (EECBG) Projects

Town of Huntington, NY



www.ligreen.com

Residential Energy Efficiency Retrofit Program

Huntington dedicated part of its block grant to the Residential Energy Efficiency Retrofit category as designated by USDOE. Huntington's program called ECCO Homes (Energy Efficiency & Conservation Options) employed non-profit green energy technical services provider LI Green to provide direct in-home services to Huntington residents.

ECCO Homes Program Goals:

1. Establishing a platform to promote residential energy efficiency through community outreach and awareness.
2. Offering homeowners free energy usage assessments provide by qualified technicians.
3. Providing homeowners with a work plan low-cost, high-impact Energy Conservation Measures (ECMs) called Tier I retrofits.

Acting as a resource and referral service for homeowner's contemplating so-called "deep dive" or "whole house" efficiency improvements (Tier II retrofits in the ECCO Homes plan) to make sure homeowners are aware of financing and other incentives that might be available to them through programs sponsored by NYSEDA, LIPA and others.

ECCO Homes technicians found they could help most homeowners cut their energy bills and be more comfortable in their houses.



LEED Feasibility Study for Town Hall

The Town commissioned a LEED-based evaluation for Town Hall, its flagship office building, including EPA Energy Star reporting and Building Commissioning, based on which Huntington decided to pursue USGBC LEED Certification to reduce its carbon footprint. Facility Improvement Measures (FIMs in the trade) were evaluated and prioritized. It was determined that the most efficient use of the EECBG funds was the upgrade and management of Town Hall's computerized Building Management System (BMS) that controls heating and cooling functions with an energy reduction yield of up to 20%. The BMS upgrades have been completed and the Town is continuing to evaluate usage data in order to identify and prioritize additional upgrades.



Solarize Huntington
Town of Huntington, NY

SOLARIZE HUNTINGTON



May 4, 2015 [abridged] - Huntington Supervisor Frank P. Petrone, the Town Council and Sustainable CUNY announce the launch of Solarize Huntington, a limited-time, community-driven education and group purchasing program aimed at reducing the cost of installing solar power for Huntington residents by as much as 25 percent.

Starting today, through September 10, residents can sign up for the program, either online at the dedicated [website](#), or at one of the Solarize 101 informational workshops the Town is sponsoring to help residents learn of the program's benefits (the first session will be held Monday May 11 from 6:30 to 8:30 p.m. at Huntington Town Hall).

Solarize Huntington is a group purchasing program that centers around a community education campaign made possible through a partnership between Sustainable CUNY of the City University of New York (CUNY), the New York Solar Smart Program, the Town and the Town's Advisory Committee on Energy Efficiency, Renewables, and Sustainability (ACEERS).

Sustainable CUNY is the program administrator for Solarize Huntington, working to reduce the soft costs of installing solar as part of the larger statewide effort under the U.S. Department of Energy's Sunshot Initiative Rooftop Solar Challenge II. Huntington, through ACEERS, will be involved in the education and outreach component.



Solarize Huntington aims to reduce the cost of installing solar by leveraging the collective purchasing power of Huntington homeowners. Participating homeowners will purchase, finance or lease solar systems from Direct Energy Solar, the installer selected through a competitive bidding process. The size of their savings will depend on how many people sign up; the more people who participate, the greater the savings. They could range from 15 to 25 percent, compared to average installation prices in the area. Direct Energy Solar has offered an additional \$500 discount to the first 20 homeowners to sign contracts.

"We're so pleased that Direct Energy Solar was selected to partner with Solarize Huntington so we can help spread the word about the benefits of solar. We have worked with more than 20 communities across the U.S. in Solarize programs and it's very powerful and energizing to see so many organizations and residents joining together to take a positive step toward energy independence, financial savings and doing something really good for the environment. We are excited to start this program and we know it will be a real success," said Jennifer Coken, Director of Community Programs for Direct Energy Solar.

Huntington has been averaging about 500 applications a year for solar installation permits. Other locations around the country that have tried similar programs have seen increase of about 33 percent in the number installations.

Solarize Huntington is the latest of several initiatives Huntington has undertaken to encourage and increase the use of solar power to cut down on the consumption of fossil fuels. The Town recently approved a fast-track process for approval of solar installation permits, and several years ago used a federal grant to install solar panels at Town Hall. The Town also installed a solar-powered electric vehicle charging station at the Huntington Long Island Rail Road station parking garage.

Residents can obtain additional information about the program and the benefits of going solar by visiting the [website](#).

Appendices



Huntington Area Rapid Transit (HART) Expansion

Town of Huntington, NY



HART Adds 15 New Busses to Fleet

March 17, 2015 - Huntington Area Rapid Transit (HART), the only Town-operated bus system on Long Island, is putting 15 new vehicles into service, providing easier access for passengers and fuel savings.

The newest members of the HART fleet include seven 20-passenger Spirit of Mobility buses manufactured by ARBOC Specialty Vehicles, an Indiana-based company, and eight paratransit buses from Shepard Brothers in upstate Canandaigua. The clean-diesel ARBOC buses will be used on fixed routes and will provide easier maneuverability, greater fuel efficiency and easier passenger access than the 29-passenger vehicles they are replacing. The eight clean-diesel paratransit buses are consistent with existing vehicles and will replace ones that, like the fixed route vehicles being taken out of service, are beyond their useful life.

"Huntington is proud of the way HART serves Town residents who either want or need to use public transportation," Huntington Supervisor Frank P. Petrone said. "These new buses will help HART to keep providing the type of top-notch service residents deserve."

HART also has three hybrid fixed-route buses, which will remain in use.

The new fixed-route buses cost \$175,500 each and the smaller paratransit buses cost \$53,368 each.

Eighty percent of the cost comes from federal mass transit funding. The Town and New York State each assume 10 percent of the cost.

The first of the vehicles went into service [March 17, 2015] and will be joined by the others shortly.



Appendices



Single Stream Recycling Town of Huntington, NY



Single Stream Recycling

Beginning in January 2015 residents are able to combine all of their recyclables into one container for collection. There is no longer a need to sort paper and cardboard from bottles, cans, and plastics.

An "All In One" recycling bin can contain:

Mixed Paper: Newspaper, magazines, mail (junk and personal), school papers, scrap paper, Pennysavers and other circulars, cereal and other grocery boxes, paperback books, detergent boxes and shoe boxes.

Cardboard: Shipping and other corrugated boxes. Any boxes that cannot easily fit in your dedicated recycling container may be flattened, tied and placed alongside the recycling container.

Glass: Empty jars and bottles (rinsed). Lids and tops are recyclable but should be removed and placed loose in the recycling container.

Metal: Empty tin and aluminum food and beverage cans (rinsed), aerosol cans, disposable aluminum pans and trays, clean aluminum foil, empty oil cans and empty paint cans.

Plastic: All plastic food, beverage, soap, shampoo, conditioner, detergent, bleach, and cleaner bottles and containers with Δ1 through Δ7 accepted (rinsed).

Unacceptable Curbside Recyclables (Dispose of these items in regular trash except where indicated by a note):

Mixed Paper: Tissues, paper towels, soiled paper, hardcover books, spiral notebooks, milk and juice cartons.

Cardboard: All wax coated cardboard and soiled cardboard food boxes.

Glass: Ceramic, porcelain, mirrors, plate glass and light bulbs.

Metal: Hangers* and durable cookware.

Plastic: Styrofoam**, plastic bags and plastic wrap*, plastic toys, flower pots and plant containers, Tupperware or reusable plastic housewares and items without a resin code symbol Δ.

* These items are recyclable, just not through the Town's curbside collection program. Many dry cleaners will accept hangers returned from homeowners. New York State law mandates that large supermarkets and retailers have plastic bag recycling programs. Styrofoam can be dropped off at the Town's recycling center.

** Plastic and Styrofoam packaging fill (peanuts) can be recycled. Call (1-800-828-2214 for the location of the nearest package store or business which accepts plastic loose fill for reuse.



Appendices

