Town of Southampton Climate Action Plan

A community plan to increase sustainability, improve quality of life, and become carbon neutral by 2040

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Letter from Town

Our world is at a critical juncture. Climate change is no longer an obscure threat in the distant future but a present-day reality that affects our everyday lives. In this era defined by unprecedented environmental challenges, it is incumbent upon local communities to take proactive steps toward a sustainable and climate-resilient future in a just, organized, and equitable manner.

With its abundant coastal resources and unparalleled natural beauty, the Town of Southampton has long been a regional leader in promoting environmental stewardship and tackling climate change. Ten years ago, in December 2013, our Town adopted the Southampton 400+ Sustainability Element which formally established a Town-wide target to become carbon neutral by 2040.

Since then, our Town has made great strides by establishing a Climate Smart Community Task Force, joining the Community Choice Aggregation program, and committing to the U.S. Mayors Climate Protection Agreement, among other accomplishments. Now, however, comes the real challenge – implementation.

We find ourselves presented with an opportunity to fulfill our commitments to take meaningful, prudent, and impactful actions by setting into motion a plan that will enable us to achieve carbon neutrality. This Climate Action Plan provides a strategic road map that aims to significantly reduce our carbon footprint, preserve our natural resources, and foster a community and economy that thrives in a changing world. This Climate Action Plan is not just a document; but a testament to our shared commitment to environmental stewardship and our proactive endeavors to build a better future.

While the actions required to combat climate change are substantial, with great challenges come great opportunities. Our actions must be swift, bold, and ambitious. The next decade is crucial to reducing our emissions. We have the tools we need to drastically reduce our carbon footprint and mitigate the worst impacts of climate change. The time to act is now.

We are excited about the journey ahead and will continue to lead by example as we work diligently to reduce town government emissions. But we cannot do this alone. Implementing the programs, forming the partnerships, adopting the codes, and building the infrastructure proposed in this plan necessitates a robust and coordinated effort, requiring every bit of passion, determination, and creativity that defines this Town. We look forward to actualizing our sustainable future, together.

Councilman John Bouvier

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List of Abbreviations

AR5	Fifth Assessment Report
BAU	Business as usual
BOA	Brownfield opportunity area
CAP	Climate Action Plan
CCA	Community Choice Aggregation
CIRIS	City Inventory Reporting and Information System
CLCPA	Climate Leadership and Community Protection Act
CSC	Climate Smart Communities
DOE	Department of Energy
DOT	Department of Transportation
EPA	Environmental Protection Agency
ESCO	Energy Service Companies
EUI	Energy use intensity
EV	Electric vehicle
GHG	Greenhouse gas
GPC	Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
GWP	Global warming potential
ICLEI	Local Governments for Sustainability
IPCC	Intergovernmental Panel on Climate Change
kWh	Kilowatt hours
LEED	Leadership in Energy and Environmental Design
LIPA	Long Island Power Authority
LIRR	Long Island Railroad
LTO	Landing/take-off
NCA	National Climate Assessment
NYSDEC	New York State Department of Environmental Conservation
NYSERDA	New York State Energy Research and Development Authority
MT CO_2e	Metric tons carbon dioxide equivalent
PHIUS	Passive House Institute U.S.
PSEG	Public Service Electric and Gas Company
PV	Photovoltaic
RRAP	Riverside Revitalization Action Plan
TDR	Transfer of development rights
TOD	Transit-oriented development
VMT	Vehicle miles traveled

Climate Action Plan Summary

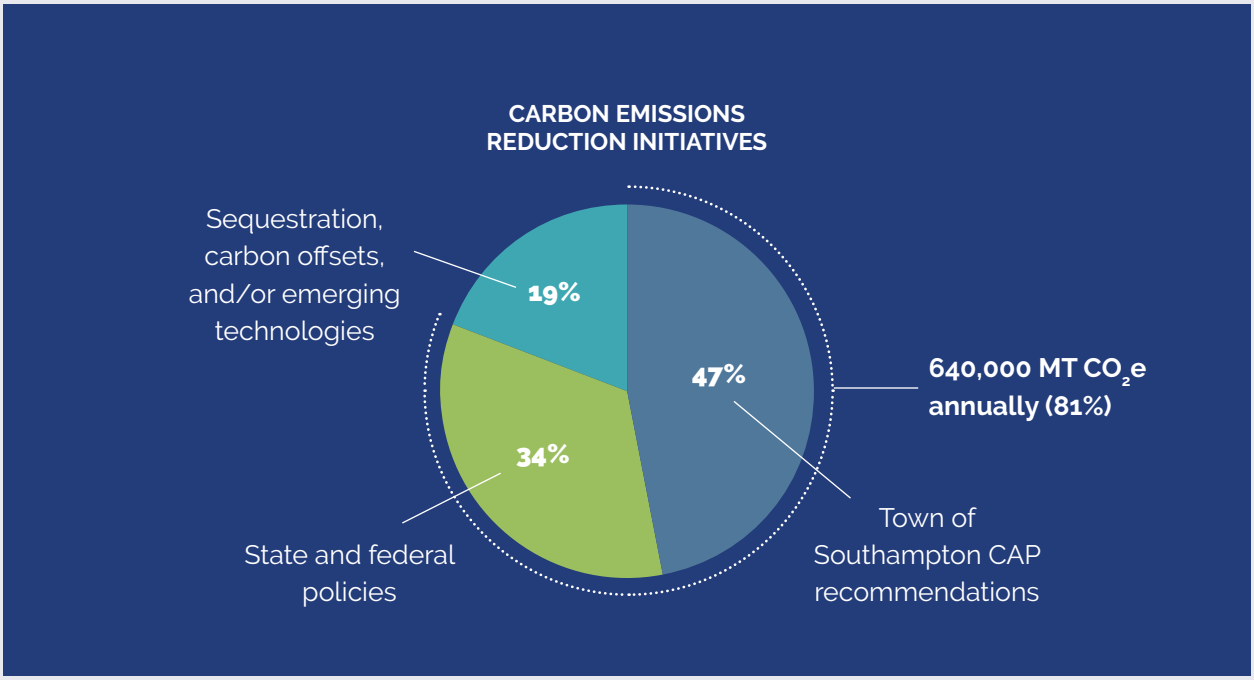
Cities and towns are on the front lines when it comes to climate change, and Southampton is no exception. The Town has been leading the sustainability charge locally for many years now. The Southampton 400+ Sustainability Element was adopted by the Town in 2013, as an addendum to the Town's 1999 Comprehensive Plan. The *400+ Element* laid the foundation for Southampton's sustainable future, setting a 2040 carbon neutral target for the Town and addressing environmental, social, and economic issues of the community.

This Climate Action Plan (CAP) is intended to be a supplement to the *400+ Sustainability Element*, providing a road map to achieve the Town's targeted carbon emissions reductions by focusing specifically on strategies to reduce GHG emissions within the Town's boarders. The CAP is a product of collaboration and engagement with Town personnel, the general public, subject matter experts, and key community stakeholders. It provides an ambitious, yet attainable, pathway to reach carbon neutrality while enhancing quality of life, balancing economic objectives, and improving social equity.

The Plan focuses on seven interrelated climate priorities including Buildings, Clean Energy, Low-Carbon Transportation, Sustainable Design and Land Use Planning, Materials and Waste, Carbon Sequestration and Removal, and finally, Capacity Building. Within each of these climate priorities, a set of objectives, strategies, and support actions are offered, providing a holistic, community-focused pathway to carbon neutrality.

CLIMATE PRIORITIES

- **Buildings**
- **Clean Energy**
- **Low-Carbon Transportation**
- **Sustainable Design and Land Use Planning**
- **Materials and Waste**
- **Carbon Sequestration and Removal**
- **Capacity Building**



Taken together, the recommendations provided in this CAP can reduce carbon emissions in Southampton by ***47 percent by 2040, in addition to the 34 percent reduction that is expected to occur from state and federal policies, such as the greening of the New York State electric grid.*** *This amounts to a total carbon reduction of 81 percent from present day emissions, or 640,000 MT CO_2e annually as of 2040. The additional 19 percent of emissions will need to be met through sequestration, carbon offsets, and/or emerging technologies.*

Early action is critical to avoid significant cost and social and environmental burdens to the community, in addition to longer-term planning for larger scale initiatives. As such, an implementation time-frame along with relative costs and GHG reduction potential is provided for each climate action strategy to assist the Town in prioritizing steps towards action. These key actions identify what should be accomplished over the next decade to continue progressing towards the 2040 carbon neutral target. Ultimately, however, this Plan should be viewed as a fluid and interactive guide that is revisited periodically. Critically, the Town of Southampton will implement ongoing carbon emissions tracking to measure and share the Town's progress publicly as it advances towards its carbon neutral future.

Introduction

As a coastal town located on the South Fork of Long Island, Southampton is on the front lines of climate change impacts. Flanked by the Peconic Bay to the north and the Atlantic Ocean to the south, the Town acts as a barrier to the mainland during storm surge events, absorbing ten-foot-high waves that leave destruction in their wake. Southampton has also seen adverse water quality impacts due to a rapidly changing climate as harmful algal blooms and toxic tides color the water bodies shades of rust, brown, and green, resulting in impacts to local fisheries and scallop die-offs in the Peconic Bay. And the Town knows all too well that the twin threats of sea-level rise and extreme storms, such as Superstorm Sandy and Hurricane Ida, pose serious risk to homes and community assets.

While these are some of the impacts the Town encounters at home, climate change is experienced globally. According to the **2022 Special Report** by the Intergovernmental Panel on Climate Change (IPCC), the world is set to reach the 1.5°C level within the next two decades, reporting that only the most drastic cuts in carbon emissions will help prevent an environmental disaster (IPCC, 2022). Southampton, therefore, recognizes the need to act and embrace this opportunity to take bold steps to address climate change at the local level. The community has already come a long way. Between adopting the Climate Smart Communities (CSC) pledge in 2012 and becoming a Bronze-level CSC in 2017, Southampton has emerged as a regional leader in climate action.

Southampton has emerged as a regional leader in climate action. The Town's commitment to meet 100 percent of the community's electricity consumption through renewable energy and achieve carbon neutrality by 2040 has set the stage for transformational change – and now is the time to act.

This document provides a strategic road map to Southampton's carbon-neutral future. It offers concrete, yet ambitious, strategies that will help reduce the Town's GHG emissions, enhance community resilience, and improve its ability to adapt to the challenges the community will encounter due to climate change over the coming decades.

By pursuing the objectives put forth in this CAP, the Town will be joining a global movement of communities, both big and small, doing their part to halt climate change. Ultimately, the benefits of these climate actions will be hyper-local in the form of improved quality of life and a more resilient and secure climate future for generations to come.

Climate Action Vision and Goals

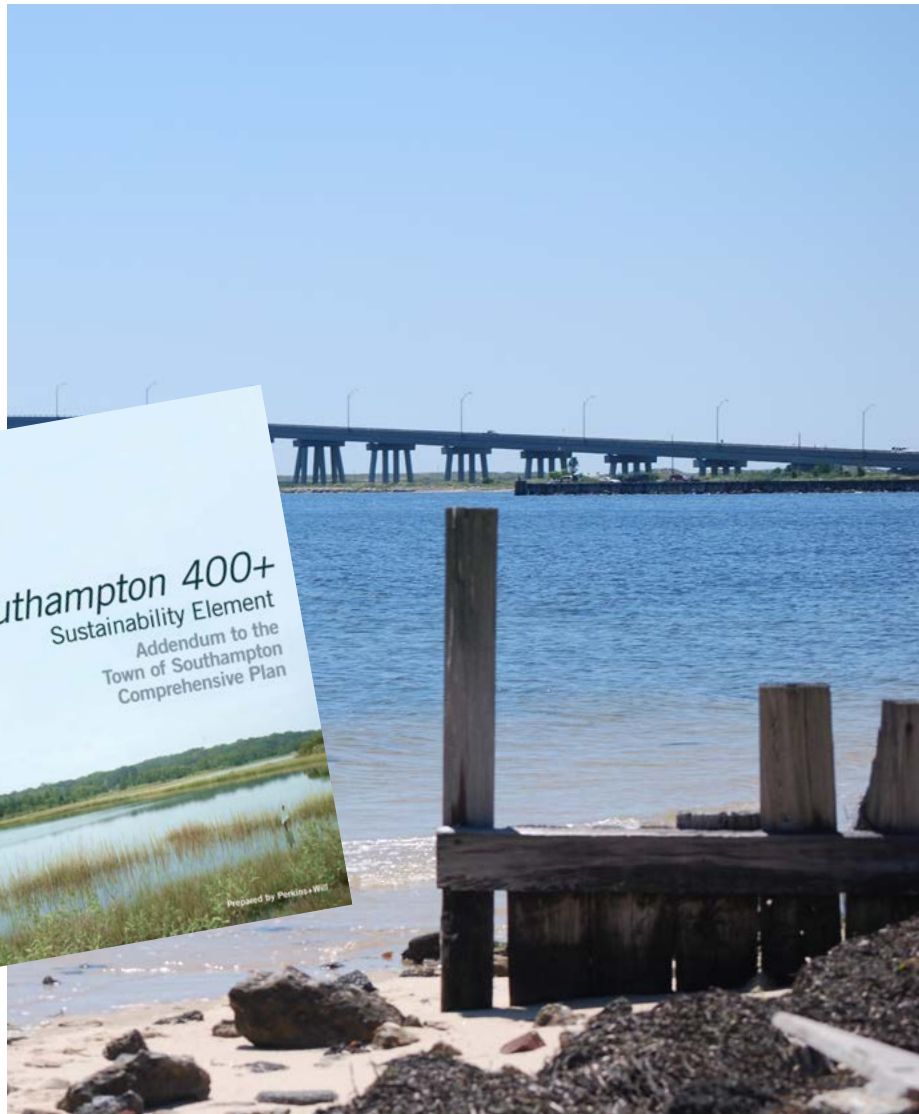
VISION

The Town of Southampton endeavors to be a sustainable, equitable, prosperous, and healthy community that retains and strengthens its regionally recognized natural beauty and core attractions for which it has come to be known.

This document serves as a road map and strategic guide to advance community climate action in Southampton in pursuit of these aims. The ability to effect change at the local level, coupled with support from neighboring communities and state and federal action, will make the community more resilient to future climate impacts and allow the Town to realize this sustainable vision. Southampton believes that bold, local action taken today will benefit the community's quality of life, environment, and prosperity and will position the Town as the archetype of a 21st-century climate smart community.

And now, more than ever, the Town's past shapes its sustainable future. As temperature and sea levels rise, Southampton recognizes the need to continue to act by addressing current and future climate challenges through sustainable action and implementation.

As demonstrated through the Town's commitment to meet 100 percent of the community's electricity consumption through renewable energy and achieve carbon neutrality by 2040; energy efficiency and carbon reductions are central tenants of our sustainable future. As stated within the Southampton Sustainability Plan, the Town recognizes "that the economy and environment are inextricably linked." Therefore, in a sustainable Southampton, resilient ecosystems and the preservation and accessibility of natural lands are also key to the prosperity of the community, as are the vitality and restoration of the Town's water resources, the protection of the infrastructure and property against natural disasters, and the minimization of waste and toxic chemical use.



Southampton 400+ Sustainability Goals

EDUCATION

Use fact-based education as a tool to advance awareness, generate civic engagement and support meaningful change; Conduct education activities that will fuel government action, and promote sustainable lifestyles on the part of residents and visitors

GREEN BUILDINGS

Promote new development that minimizes the carbon footprint of building construction, renovation and operations, that provides a healthy environment for occupants, and that utilize natural systems to support a high quality of life

WATER

Restore and protect the Town's ground and surface waters to ensure their ability to support public health and the maritime, recreational and resort activities that underpin Southampton's way of life and economy

QUALITY OF LIFE

Provide access for all Town residents to a healthy lifestyle including opportunities for active recreation, locally produced/organic food, safe drinking water, educational and cultural activities, community engagement, and personal fulfillment

ECONOMICS

Achieve a resilient and diversified local economy where economic benefits are shared across the community; Recognizing that the economy and environment are inextricably linked, pursue economic health through sustainable practices for existing economic sectors, continued development of green businesses, and increased reliance on locally produced goods and services

LAND USE

Achieve land development and redevelopment that preserves Southampton's rural and maritime heritage, and reinforces the interdependence of traditional development patterns characterized by the interdependence of compact and walkable village and hamlet centers with surrounding open space and managed landscapes, agricultural uses, and accessible coastal areas

WASTE

Achieve net zero waste production by minimizing waste production and treating waste as a resource rather than a byproduct

ENERGY/CARBON

Become carbon neutral through a combination of conservation, efficiency, and alternative energy sources.

Climate Leadership

Southampton has emerged as a municipal climate leader over the past decade and is committed to making meaningful advances to combat climate change at the local level.

The Town has been a leader in the New York State Energy Research and Development Authority (NYSERDA) Clean Energy Community Program and most recently, became a participant in the U.S. Department of Energy (DOE) Better Climate Challenge by pledging to reduce portfolio-wide GHG emissions (scope 1 and 2) by at least 50 percent within ten years. Scope 1 includes emissions from assets that the Town directly owns (such as burning fuel for the Town's vehicle fleet) and scope 2 includes emissions that the Town indirectly causes (such as emissions caused when generating electricity that is used in buildings).

In 2018, the Town of Southampton established a Climate Smart Community Task Force and created a Draft CAP through generous support from NYSERDA. The draft CAP was produced as part of the New York State CSC program and is in accordance with the commitment made by the Town of Southampton when it adopted the CSC pledge in the fall of 2012.

The Town has also opted-in to a Community Choice Aggregation (CCA) program called Choice Community Power which represents a significant step towards achieving its goal of 100 percent renewable electricity. Choice Community Power enables participants to pay less for renewable (or clean) energy by allowing municipalities to pool local electricity demand in order to leverage the collective buying power to secure more favorable energy supply rates and designate renewable generation sources. Southampton's CCA provider, Joule, reportedly saved New York State residents an estimated $7 million from July 2021 to February 2022 (Joule Community Power, 2022). Southampton is also involved in the Long Island Green Homes Consortium, which helps residents achieve greater energy efficiency at home.

Beyond carbon reduction, the Town has a long-standing precedent of environmental stewardship and conscious development, having successfully preserved over 5,000 acres of land over the last 20 years. Southampton is considered a model of environmental protection in the New York State and is a member of both the South Shore Estuary Reserve and the Peconic Estuary Protection Committee, which guide the preservation, protection, and enhancement of these rich and complex natural ecosystems.

The plans, studies, and reports by the Town of Southampton include:

2001	Trustees – Marine Resources Protection and Management Plan
2011	Solid Waste Management Plan Update
2013	Flanders Sewer Study
2013	Southampton 400+ Sustainability Element – Addendum to the Town of Southampton Comprehensive Plan
2014	NYSERDA Plan 9/2014 – Climate Change in New York State by NYSERDA
2015	Riverside Brownfield Opportunity Area (BOA)/Riverside Revitalization Action Plan (RRAP)
2016	Town of Southampton Water Quality Improvement Protection Plan Community Preservation Plan
2016	Southampton Coastal Resources & Water Protection Plan
2021	Riverside Sewer Study

The Town of Southampton has committed to the following programs and associations:

- U.S. DOE Better Climate Challenge
- New York State CSC
- Long Island Green Homes Consortium
- U.S. Mayors Climate Protection Agreement
- Peconic Estuary Protection Committee – 2015
- South Shore Estuary Reserve

Looking ahead to 2040, Southampton is committed to pursuing ambitious carbon reductions and publicly reporting its progress and actions to maintain accountability. The Town is excited to collaborate with other local governments in the region and around the world to increase awareness, share best practices, and encourage climate action at the local level.

Guiding Principles and Community Themes

Guiding Principles

COMMUNITY-FOCUSED

This CAP is intended to serve the community. It was developed with the intent of creating lasting benefits for the people of Southampton and maintaining a high-quality of life for future generations. The Town believes that by addressing climate change and resilience head-on, it can foster a future for the community that is not just livable but flourishing.

IMPLEMENTATION-ORIENTED

Whereas the 400+ Sustainability Plan laid the foundation for Southampton's sustainable future by setting the 2040 carbon neutrality target, this plan provides the road map to get there. This CAP contains concrete, feasible actions that have been critically assessed and selected based on their ability to provide meaningful carbon reductions while balancing the cost of implementation. Some of the strategies included in this CAP are "low-hanging fruit," such as retrofitting existing buildings' HVAC systems for improved efficiency, while others require a greater upfront investment but result in significant carbon reductions, such as exploring district energy systems. Further, the Town will hold itself accountable by measuring the impact that these strategies are having on carbon emissions every five years so that the implementation of these strategies can be iterative and their impact verifiable.

Community Themes

ENGAGEMENT

Whether attending a meeting, joining a committee, participating in educational programming, or volunteering; Southampton residents continue to play an active role in working towards the Town's climate goals. The community is comprised of active members who want to contribute to and help shape Southampton's sustainable future. They are the Town's greatest partners, and it cannot meet the carbon neutrality ambitions without them.

NATURAL RESOURCES

Since its founding in 1640, the Town of Southampton has valued its rich and bountiful natural resources both as a driver of the local economy and as a source of recreation and beauty. First, the Town depended on abundant farmland and rich fishing grounds as an agricultural and aqua-cultural-based economy. Then, during the 20th century, the Town of Southampton shifted to a tourism-based economy as its natural beauty became regionally recognized

As the CAP is intended to shape the sustainable future of Southampton, its development must be guided by four key principles and core themes that reflect the values of the community. The following principles can be understood as guideposts on the path to bridging the gap between present day conditions and carbon neutrality. Similarly, through engagement with the public and ongoing discussion with key stakeholders, several community themes have emerged that have shaped the strategies and actions included within this plan.

AMBITIOUS AND HOLISTIC

This Plan contains bold, forward-thinking strategies that, while feasible, are meant to drive progress. The Town will enact innovative policies, set ambitious targets, consider unique partnerships and funding opportunities, and explore emergent technologies. And while advancing toward a carbon-neutral future is the ultimate goal, having a holistic, integrated approach is also critical. As such, this Plan considers tactics across seven distinct climate priorities, recommending strategies from land use to clean energy to waste and beyond to provide a comprehensive approach.

REGENERATIVE THINKING

This plan aims to go beyond simply maintaining current systems; it seeks to restore them. Through regenerative practices, the Town intends to heal its ecological systems and rehabilitate Southampton's water bodies, habitats, and forests by being stewards of the land. This approach also encompasses regenerative economic principles by recognizing the environment as an asset with inherent economic value that cannot be endlessly depleted.

and appreciated, as it remains today. The Town's natural resources are a part of Southampton's identity and the community values their preservation, protection, and restoration.

ACCESSIBILITY

Hand in hand with the preservation of Southampton's natural resources is the community's enjoyment of and access to them. Southampton residents deeply value public access to the Town's beaches, waterfront, and open space, regardless of socioeconomic status.

EQUITABLE EVOLUTION

The community wants to enact changes that are tangible, verifiable, and just. As such, the strategies offered within this Plan have been considered from not just a feasibility and efficacy standpoint, but also from the lens of equity. Southampton knows that the transition to a carbon-neutral community must occur within the next two decades and it intends to do so from a place of inclusion and compassion.

Photo: Tomás Fano, CC BY-SA 2.0, via Wikimedia Commons

Stakeholder Engagement Tactics and Objectives

The Town's CAP was informed by stakeholder input through community engagement tactics including a survey, a public workshop and two public hearings. To ensure an equitable process, a survey was also conducted as an accessible alternative to the public workshop and hearing. A visualization of the timeline for the development of the CAP is presented on the following page.

Ideas Generation: Priority Climate Actions

Following development of the Town's GHG inventory, the results of the inventory analysis were shared with community members in an initial survey **(Step 1)**. The survey included information regarding the proportional contributions of various sources to the Town's overall GHG footprint, and then asked respondents to rank potential GHG reduction strategies according to their level of interest. As a result, priority areas for the Town's emission reduction strategies were informed by community input. These priority areas then formed the basis of the actions included in the GHG Emissions Reduction Potential Analysis.

Analysis and Refinement of Actions

Once an initial draft of the Emissions Reduction Potential Analysis was created, a virtual public workshop was held to communicate the results of the analysis to the public and solicit input regarding implementation **(Step 2)**. This enhanced awareness within the community regarding the Town's proposed approach to climate action, and recommendations for climate action strategies as well as forecasted impacts of these strategies were shared with community members. Stakeholder feedback gathered during this workshop also helped the Town refine and prioritize emission reduction strategies.

Draft Action Plan

Stakeholder feedback and discussions formed the basis for the next step: the development of the CAP. The draft CAP was first shared with Southampton's Green Advisory Committee **(Step 3)** and at a Town Board meeting **(Step 4)**, where the Town and consultants answered questions regarding the CAP and solicited feedback from Board members. The Town then held a Public Hearing **(Step 5)** where the draft CAP was shared with community members one month in advance to raise awareness regarding the specificities of the plan and solicit feedback on the proposed strategies within the draft.

Final Plan

The Town incorporated feedback from the Town Board and Public Hearing and any other relevant comments into a revised CAP which was shared in advance of the second Public Hearing **(Step 6)**. Following this Hearing the Town will vote to adopt the plan **(Step 7)**.

Greenhouse Gas Inventory Methodology

The Town of Southampton recognizes the impact of climate on the economic well-being and quality of life of Town residents. As a member of New York State's CSC Program and the U.S. Mayors Climate Protection Agreement, the Town of Southampton has committed to inventorying its annual GHG emissions. Data from 2019 were used to create this baseline inventory. This baseline community-wide and government operations GHG inventory progresses the Town of Southampton's efforts towards achieving the Town's objective to become carbon neutral by 2040.

Greenhouse Gas Inventory Tool

The 2019 GHG community-wide inventory was conducted using the City Inventory Reporting and Information System (CIRIS) tool. CIRIS is a spreadsheet-based tool for managing, calculating, and reporting community-wide GHG emissions. It is consistent with the widely accepted Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) standard.

CIRIS relies on user defined emissions factors to analyze emissions that occur within a specific geography. In some instances, national averages are used when more locally specific data are not available.

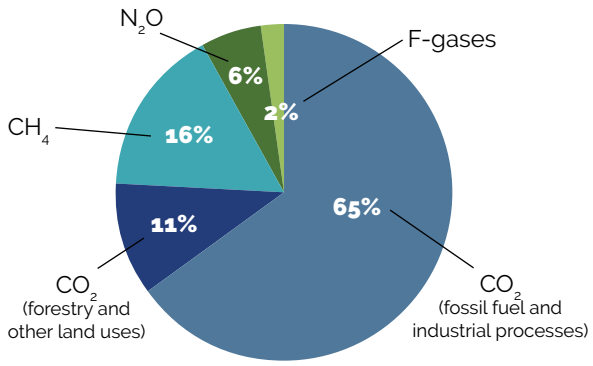
The Town of Southampton government operations inventory uses a separate methodology, described in Section 3 – 2019 Government Operations Emissions.

Greenhouse Gases

Gases that trap heat in the atmosphere are called GHGs (EPA, n.d.). The following GHGs are included in the Town of Southampton inventories:

- Carbon Dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)
- Fluorinated gases (F-gases)

FIGURE 1
GLOBAL GHG EMISSIONS BY GAS



Source: EPA

Key GHGs contributing the most to climate change are CO_2, N_2O, and CH_4. These three gases are emitted through human activities and make up 98 percent of the global GHG emissions. Globally, these emissions come from agriculture (24%), transportation (14%), buildings (6%), and other energy-related activities (e.g., fuel extraction, 10%) (EPA, n.d.). One of the impacts of global warming caused by these gases is sea level rise. As a coastal community, the Town of

Sectors Included

SECTORS: COMMUNITY-WIDE INVENTORY
Residential Energy
Residential Energy – Natural Gas
Residential Energy – Fuel Oil
Commercial/Institutional Energy – Electricity
Commercial/Institutional Energy – Natural Gas
Commercial/Institutional Energy – Fuel Oil
Transportation – On Road
Transportation – Railways
Transportation – Marine
Transportation – Aviation
Solid Waste – Landfill
Wastewater – Septic Waste

SECTORS: GOVERNMENT OPERATIONS INVENTORY
Municipal Building Energy Use
Streetlights – Electricity
Vehicle and Equipment Fuel Use

Southampton is especially vulnerable to rising sea levels affecting local communities and the economy.

The total GHG emissions for the Town are calculated as carbon dioxide equivalent (CO_2e). CO_2e is a measure used to compare the emissions from various GHGs based upon their global warming potential (GWP). For example, the GWP for methane over 100 years is 28. This means that emissions of one million metric tons of CH_4 is equivalent to emissions of 28 million metric tons of CO_2 (OECD, n.d.). We use GWP values for CH_4, N_2O, and F-gases to calculate the Town's emissions. The GWP values are presented in the Assessment Reports from the IPCC. The GWPs are updated in each new Assessment Report from the IPCC. GWP values from the Fifth Assessment Report (AR5) were used for this baseline inventory.

DATA: COMMUNITY-WIDE INVENTORY

Residential Energy – Building Electricity Use
Residential Energy – Building Natural Gas Use
Residential Energy – Building Fuel Oil Use
Commercial/Institutional Energy – Building Electricity Use
Commercial/Institutional Energy – Building Natural Gas Use
Commercial/Institutional Energy – Building Fuel Oil Use
On Road Transportation – Vehicle and Fuel Type, Vehicle Miles Traveled
Railways – Train Line Distance and Number of Trains
Marine Transportation – Recreational Only
Aviation – Airport Fuel Consumption and Estimated Number of Helicopters
Solid Waste – Solid Waste Tonnage
Wastewater – Septic Waste

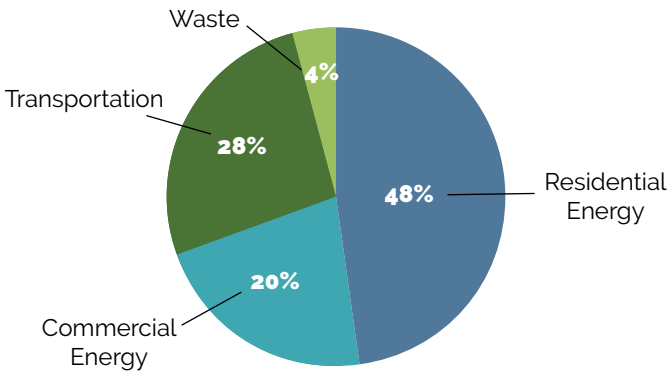
DATA: GOVERNMENT OPERATIONS INVENTORY

Municipal Building Energy – Electricity Use
Municipal Building Energy – Natural Gas Use
Municipal Building Energy – Fuel Oil Use
Municipal Building Energy – Propane Use
Streetlights – Electricity Use
On Road Vehicles – Vehicle Type, Fuel Use by Type
Off Road Vehicles – Fuel Use by Type
Small Power Equipment – Fuel Use by Type

2019 Community-Wide Emissions

Community-wide activities produced 790,161 metric tons of CO_2e (MT CO_2e) in 2019. On a per capita basis, the community of Southampton creates 13.60 MT CO_2e per person[1]. Residential energy consumption is responsible for the largest amount of emissions at 48 percent of overall CO_2e emissions for the Town of Southampton. Transportation is the next largest contributor at 28 percent with commercial energy following at 20 percent. Waste contributed only four percent to overall emissions.

FIGURE 2
TOWN OF SOUTHAMPTON 2019 GHG EMISSIONS



Community-Wide Annual Emissions	2019 Total (MT CO_2e)	2019 Per Capita
Residential Energy	378,630	6.5
Commercial Energy	157,101	2.7
Transportation	221,934	3.8
Waste	32,495	0.6
Total Emissions	**790,161**	**13.6**

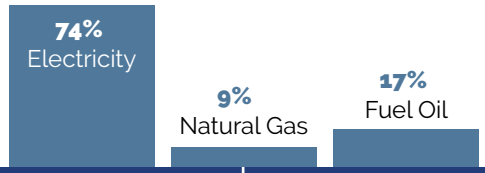
1 Emissions are calculated on an annual basis based on US Census data (population, vehicle miles traveled, and number of homes). Because Southampton is a seasonal community, there may be variations in population throughout the year that have some effects on emissions calculations. GHG inventories are completed on an annual basis and therefore it is a reasonable assumption that the average over the year is reflected in the data.

Sector Relative Emissions Contributions

RESIDENTIAL ENERGY

Residential energy emissions are dominated by electricity use at 74 percent of overall residential emissions. Fuel oil use accounts for 17 percent of residential emissions and natural gas use accounts for nine percent.

FIGURE 3
RESIDENTIAL ENERGY EMISSIONS

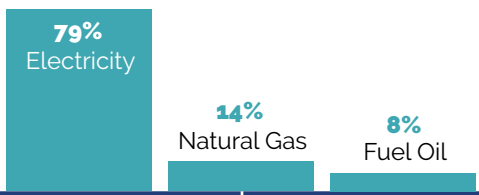


Residential Energy Emissions	2019 Total (MT CO_2e)
Electricity	281,707
Natural Gas	33,816
Fuel Oil	63,107

COMMERCIAL ENERGY

Commercial energy emissions are dominated by electricity use at 79 percent of overall commercial emissions. Natural gas use accounts for 14 percent of residential emissions and fuel oil use accounts for eight percent.

FIGURE 4
COMMERCIAL ENERGY EMISSIONS

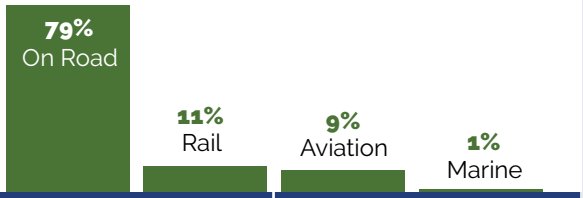


Commercial Energy Emissions	2019 Total (MT CO_2e)
Electricity	123,706
Natural Gas	21,413
Fuel Oil	11,983

TRANSPORTATION

Consumption of gasoline and diesel fuels for on road transportation by cars, trucks and motorcycles contributes 79 percent of overall transportation emissions. Diesel use by the Long Island Railroad (LIRR) contributes another 11 percent and aircraft using jet fuel and aviation gasoline contribute nine percent. The use of gasoline and diesel for marine transportation contributes one percent.

FIGURE 5
TRANSPORTATION EMISSIONS



Transportation Emissions	2019 Total (MT CO_2e)
On Road	175,485
Rail	24,334
Aviation	19,952
Marine	2,164

WASTE

Emissions from disposal of solid waste in landfills contributes 67 percent to overall waste emissions. Emissions from wastewater in septic tanks contributed the other 33 percent of waste emissions.

FIGURE 6
WASTE EMISSIONS

Waste Emissions	2019 Total (MT CO_2e)
Solid Waste	29,465
Wastewater	10,856

Methodology By Sector

RESIDENTIAL AND COMMERCIAL

Electricity: Aggregate values for residential and commercial electricity use in kilowatt hours (kWh) were provided by the Public Service and Electric Gas Company (PSEG) utility for the Town of Southampton. The Town provided GIS boundaries to PSEG that included the Villages of Westhampton Beach, Southampton, Sag Harbor, Quogue, and North Haven, as well as Southampton Town (Tax Districts 1200, 1201, 1202, 1203, 1204, 1205). In the CIRIS tool, emissions factors for the eGRID NYLI subregion were applied to calculate emissions (EPA, n.d.).

Natural Gas*:* Aggregate values for residential and commercial natural gas use in therms were provided by the National Grid utility for the Town of Southampton. The Town provided GIS boundaries to National Grid (see Figure 1.7). Gas usage is based on meter read dates occurring in the calendar year 2019. In the CIRIS tool, 2019 emissions factors from Part 98 – Mandatory Greenhouse Gas Reporting were applied to calculate emissions (National Archives, n.d.).

FIGURE 7
TOWN OF SOUTHAMPTON GIS BOUNDARIES

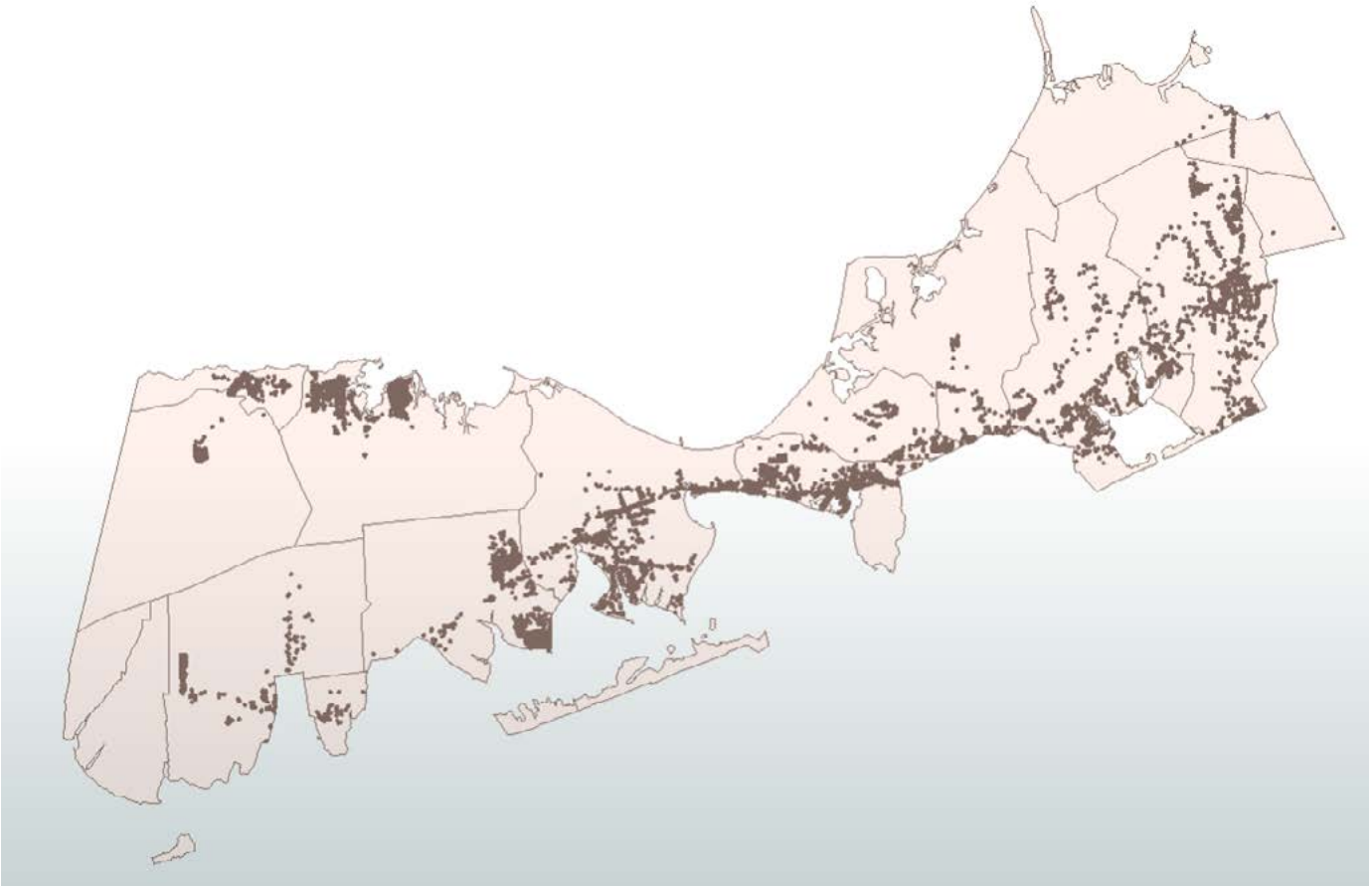


Photo: Masterchief1307, CC BY-SA 4.0, via Wikimedia Commons

Fuel Oil: Data on residential and commercial distillate and residual fuel oil sales categorized by end use in New York State were obtained from the Energy Information Administration (EIA, n.d,). To calculate residential fuel oil use, data on the number of households using fuel oil and the average number of rooms per household was obtained from 2019 census data (U.S. Census Bureau, 2019). Residential fuel oil use in Southampton is calculated based on the overall fuel oil consumption in New York State scaled by the proportion of number of households using fuel oil in Southampton relative to the number in New York State. This value is then scaled by proportion of the median number of rooms per household in Southampton relative to the median number of rooms per household in New York State.

Commercial consumption was calculated using employment numbers, obtained from the U.S. Census, for Southampton. Commercial fuel oil use in Southampton is calculated based on the overall fuel oil consumption in New York State scaled by the proportion of Southampton employment numbers relative to New York State employment numbers.

TRANSPORTATION

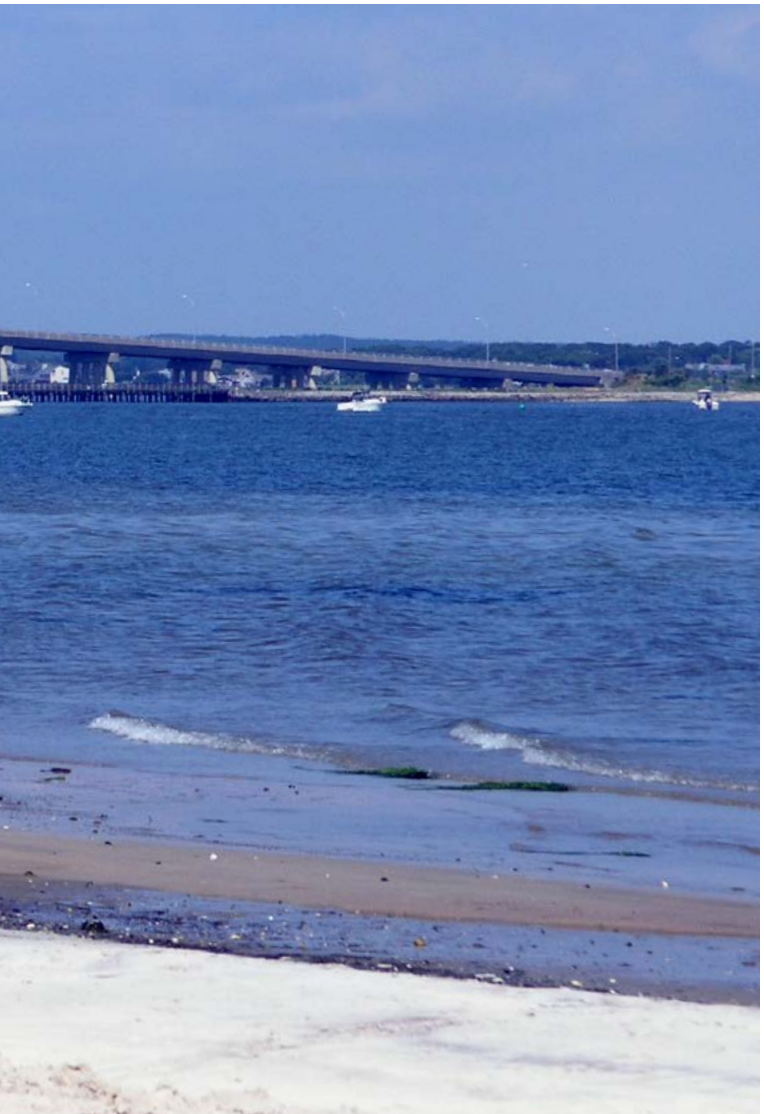
***On Road**:* On road transportation in the Town of Southampton was calculated based on vehicle miles traveled (VMT) in New York State for motorcycles, passenger cars, light trucks, and heavy buses and trucks (U.S. DOT, 2020). The VMT for each category is scaled to Southampton using a proportion of New York State population to population in the Town of Southampton. The percentage of vehicles in each category that uses gasoline and the percentage consuming diesel in Suffolk County was obtained from the New York State Department of Transportation (DOT) and applied to the VMT values (U.S. DOT, n.d.). To calculate gallons of fuel used from VMT, average miles per gallon for gasoline and diesel for each vehicle type were applied (U.S. DOT, 2018). Emissions from the gallons of diesel and gasoline consumed were then calculated in the CIRIS spreadsheet using emissions factors from the EPA Center for Corporate Climate Leadership (EPA, n.d.).

Railways: Emissions from the LIRR were calculated based on the number of miles of train line and the number of trains per year.

Aviation: Total annual aviation gasoline and jet fuel used at Francis S. Gabreski Airport was provided by the Airport Manager. Heliport fuel use was estimated using average flights per month in 2022 (Air Nav, 2020). A 2019 value was estimated by scaling the 2022 value based on population growth between 2019 and 2022. The fuel consumption was estimated using an average fuel per landing/take-off (LTO) obtained from the Swiss Confederation's Guidance on the Determination of Helicopter Emissions (Federal

Office of Civil Aviation, n.d.). This guidance provides fuel per LTO for many different helicopter models. These were averaged and then multiplied by the estimated 2019 flights per month and converted into an annual fuel use estimate. It was conservatively assumed that all fuel was jet fuel. Emissions from the gallons of aviation gasoline and jet fuel consumed were then calculated in the CIRIS spreadsheet using emissions factors from the EPA's Center for Corporate Climate Leadership.

***Marine**:* The number of boats operating off Long Island was retrieved from the 2019 Recreational Boating Report (NYS PRHP, 2019). This was used to scale the total amount of diesel and gasoline used by boats in the U.S. as obtained from the DOE Transportation Energy Book (Oak Ridge National Laboratory, n.d.). Emissions from the gallons of diesel and gasoline consumed were then calculated in the CIRIS spreadsheet using emissions factors from the EPA's Center for Corporate Climate Leadership (EPA. n.d.).



WASTE

***Solid Waste – Landfill**:* Data on the tonnage of city waste taken to landfills was obtained from the Town of Southampton's Town Engineer. This tonnage was about 15 percent of total Town waste taken to landfills based on a previous study (EPA, n.d.). In the current study, the numbers are based on New York State Department of Environmental Conservation (NYSDEC) estimation tool for different waste types including MSW and the information provided by the Town of Southampton. The data from the Town of Southampton on solid waste was found to be close to the NYSDEC data assuming that the city data is 15 percent of the total waste data, percentage based on the study referenced above – Solid Waste Management Plan 2016-2026, Town of Southampton, December 8, 2011. Town of Southampton also mentioned that instate landfills flare the CH_4 to avoid smell. The same approach of flaring for the out of state landfills was assumed, IPCC AR4 emission factor for MSW was used to arrive at the MMBTU numbers. The NYSDEC calculator used for waste calculation is from NYSDEC (NYSDEC, 2017).

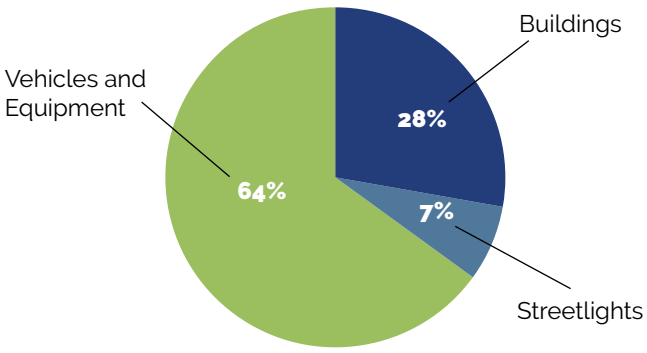
Emissions from the tonnage were then calculated in the CIRIS spreadsheet using the CH_4 commitment methodology from the Greenhouse Gas Protocol for Communities (GPC, n.d.). A landfill gas collection efficiency of 85 percent was assumed as well as a zero percent proportion of landfill gas collected used as an energy source.

***Wastewater – Septic Waste**:* An assumption of 75 percent septic system use was used to calculate wastewater emissions. This, along with the population of the Town of Southampton was used in the Local Government Operations Protocol methodology for estimating wastewater emissions based on the population served (CARB, n.d.).

2019 Government Operations Emissions

Government operations in the Town of Southampton produced 4,707 MT CO_2e in 2019. On a per capita basis, the government operations in Southampton create 0.08 MT CO_2e per person. Fuel use by government vehicles and small powered equipment is responsible for the largest amount of emissions at 64 percent of overall CO_2e emissions from government operations in the Town of Southampton. Building energy use is the next largest contributor at 28 percent with electricity use by streetlights following at seven percent.

FIGURE 8
TOWN OF SOUTHAMPTON 2019 GOVERNMENT GHG EMISSIONS



Government Operations Annual Emissions	2019 Total (MT CO_2e)	2019 Per Capita
Buildings – Energy Use	1,302	0.02
Streetlights	332	0.01
Vehicles and Equipment	3,035	0.05
Total Emissions	**4,668**	**0.08**

Methodology By Sector

BUILDINGS – ENERGY USE

The Town of Southampton is a designated NYSERDA Clean Energy Community. As part of attaining this designation, the Town has committed to benchmarking the energy use at all of its facilities that are larger than 1,000 square feet and to make this data available to the public on an annual basis. Measuring and sharing data on building energy use will help identify opportunities to cut energy waste and will allow our residents to compare our year-over-year energy usage and GHG emissions. Grid purchased and on-site renewable generated electricity, natural gas, fuel oil, and propane use were assessed for all municipal buildings larger than 1,000 square feet for the year 2019.

STREETLIGHTS

The wattage of individual signals, beacons, and speed display units was assessed and an estimate of the operating hours (dusk to dawn) was applied to achieve an estimated estimate of the kWh hours per year consumed. Streetlights wattage was assessed based on the wattage of the types of streetlight units used throughout the Town and the number of those lights installed. Again, this wattage was converted to a kWh per year using an estimate of the operating hours (dusk to dawn) per year. The emissions factor for the eGRID NYLI subregion was applied to calculate emissions.

VEHICLES AND EQUIPMENT

Fuel data in gallons for each vehicle was produced by the EJ Ward fuel database program for the year 2019. This database covers all fueling stations (Westhampton gas and diesel, Bridgehampton gas

SWB

LWB

HD

and diesel, and Hampton Bays gas) except for North Sea (gas and diesel) and Hampton Bays (diesel). The data was produced in a spreadsheet by vehicle number. The data was sorted by fuel type, year, and vehicle type (light duty short wheel base (SWB) [cars], light duty long wheel base (LWB) [F-150s, Explorers, Tahoes, Jeeps, SUVs] and finally heavy duty (HD) [F-250 and up]. Fuel consumption for each vehicle group type was used to determine vehicle emissions in CO_2e based on EPA emissions factors for GHG inventories 2022 (EPA, n.d.).

In addition, the majority of our small power equipment such as mowers, string trimmers, and blowers are fueled from fuel cans. The fuel cans

Mowers
String trimmers
Blowers
Tractors
ATVs

are included in the same category as the rest of the lawn equipment which includes large mowers, tractors, and some ATVs. The fuel stations that were not tracked in EJ ward were input based on some key site characteristics. For instance, North Sea gas (unaccounted) was calculated under a HD vehicle type since the majority of the vehicles at the North Sea Waste Management type are HD.

The unaccounted diesel from the Hampton Bays site and North Sea site result in higher emissions because the diesel fleet is significantly older than the gasoline fleet. The high diesel usage at the North Sea site stems from this being the main refueling location for the waste management fleet which trucks various types of waste both across town and out of town.

2040 Carbon Emissions Forecasting

Based on the 2019 GHG Inventory assessment, two cases representing future carbon pathways were modeled for the Town of Southampton through 2040:

01

Business as Usual (BAU) Case: This case examines what Southampton's future carbon emissions will be without any local climate action.

02

2040 CAP Case: This case forecasts what Southampton's future carbon emissions will be, assuming the climate actions provided in this report are implemented to calculate the reduction.

Business as Usual Carbon Forecasting

Using the 2019 GHG Inventory as a starting point, the BAU case looks at what Southampton's GHG emissions would be if no climate actions are undertaken at the local level. The BAU emissions forecast considers future changes in other variables, such as population growth, that are anticipated to occur in Southampton in the coming decades, as well as impacts from national and state policy shifts Additionally, the BAU emissions forecasting did not include any assumptions related to changes in energy demand resulting from climate change (*i.e.,* higher energy demand in the summer due to higher temperatures) as this becomes complicated to predict and therefore model.

Based on current growth rates and existing policies, with no further climate action at the local level, the BAU forecast predicts a 34 percent reduction in GHG emissions will occur by 2040 compared to present-day emissions. This amounts to a decrease of 273,200 MT CO_2e, primarily resulting from the decarbonization of the electrical grid in New York State.[1] While this reduction is significant and will greatly aid Southampton's emissions reduction goals, it is not sufficient to meet the Town's objective of achieving carbon neutrality by 2040. An additional 517,000 MT CO_2e will need to be reduced through local climate action.

With no further climate action at the local level, the BAU forecast predicts a 34 percent reduction in GHG emissions will occur by 2040, compared to present-day emissions.

FIGURE 9
BAU EMISSIONS FORECAST

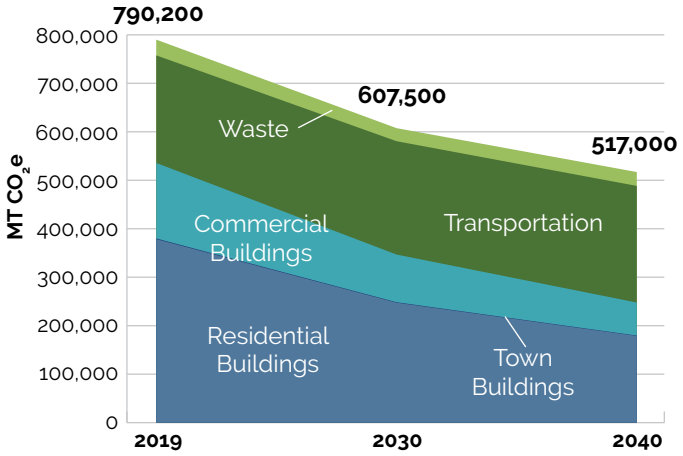
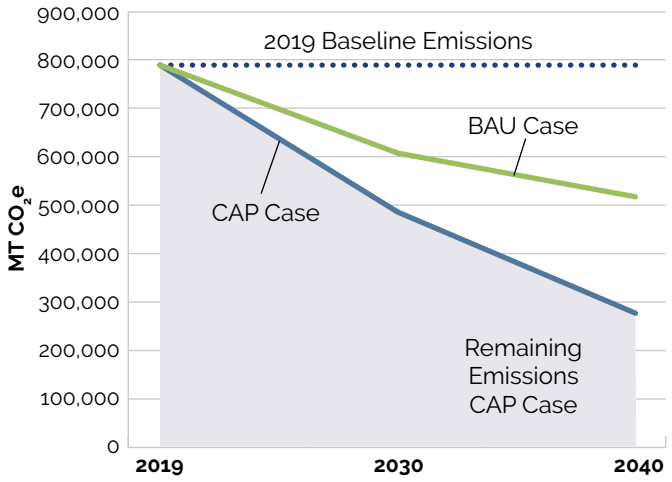


FIGURE 10
EMISSIONS FORECASTS (2019-2040)



1 The Climate Leadership and Community Protection Act (CLCPA) is a plan signed into law on July 18, 2019 to address climate change and reach net zero emissions in New York State. The Act sets the goals to reduce emissions to 40 percent below 1990 levels by 2030 and then to 85 percent below 1990 levels by 2050. The remaining 15 percent of emissions will be offset to reach net zero emissions. The expansion of New York's Clean Energy Standards (CES), such that 70 percent of New York's electricity comes from renewable energy sources such as solar and wind by 2030, was codified under the CLCPA (NRDC 2019).

2040 CAP Carbon Reduction Forecasting

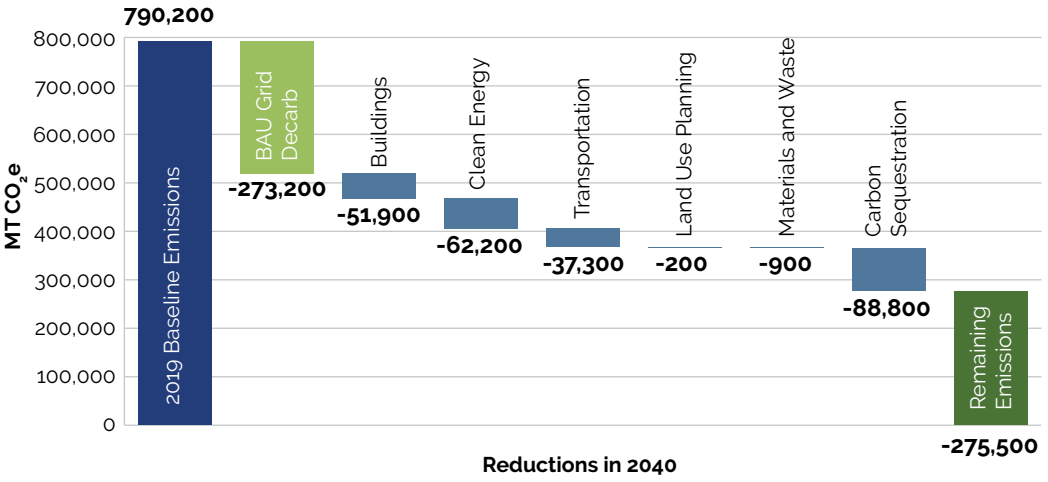
To "close the gap" and enable the Town of Southampton to meet its 2040 carbon neutral target, the climate priorities and strategies developed for the CAP were then modeled to determine the relative reduction potential of each strategy offered in this Plan. Forecasting emissions reductions in certain climate priority areas, such as building efficiency, is straightforward, whereas forecasting in other areas, such as land use and policy changes, are more complex. Therefore, the strategies tied to the Sustainable Design and Land Use Planning and Capacity Building climate priorities, which are largely based on policy and programming recommendations, were forecasted at the strategy level as they are enabling actions rather than easily quantifiable reductions.

Based on the CAP reduction forecasting case, the estimated GHG reduction potential for all of the climate priorities that could be modeled resulted in a 47 percent annual reduction in CO_2e emissions by 2040, equating to 241,500 MT CO_2e, as shown in the figure below. This reduction is equivalent to the amount of carbon emitted from powering over 30,000 homes for an entire year (EPA Carbon Equivalency Calculator, 2023).

While these findings enable a cost-benefit comparison of these strategies and allow the Town to prioritize certain actions for near-term implementation, these climate priorities should be considered interrelated and are intended to support one-another. For instance, many of the code amendments included in the Sustainable Design and Land Use climate priority are designed to facilitate the construction of both small- and large-scale renewable energy systems discussed in the Clean Energy climate priority. Therefore, these climate strategies should be understood as a holistic set of recommendations.

According to this forecast, there are **275,500 MT CO_2e emissions remaining** that will need to be addressed through policy advocacy, the purchase of offsets, and additional carbon sequestration. It is expected that there will continue to be significant technology changes and evolution before 2040 that will enable additional emissions reductions.

FIGURE 11
2040 CAP EMISSION REDUCTION PATHWAY



As demonstrated in the graph to the left, the most impactful climate priorities are:

Reducing building energy

Clean energy

Low-carbon transportation

Carbon sequestration

Climate Action Plan at a Glance

This Plan is a guiding document that provides the Town of Southampton overarching direction to achieve its carbon neutral ambitions by 2040 through a series of seven interrelated climate priorities. These climate priorities include specific objectives and strategies that are intended to help guide the Town towards meaningful, measurable, yet manageable climate action.

This CAP supports and builds upon many existing sustainability programs and initiatives that are already in place, and proposes new policies, programs, projects, and actions designed to enhance and expand Southampton's sustainability capacity through 2040 and beyond. The following section discusses each of these climate priorities in greater detail and offers emissions reduction strategies, as well as a set of supporting actions per strategy, that the Town and community can take to achieve implementation. Below is a high-level summary of what the CAP entails.

Climate Action Plan at a Glance

Climate Priority	Strategies	Objectives
Buildings (B)	**B1:** Improve energy efficiency of existing municipal facilities **B2:** Construct energy efficient new municipal facilities **B3:** Track and reduce energy use of existing and new municipal facilities **B4:** Incentivize sustainable retrofits to existing residential and commercial buildings **B5:** Incentivize sustainable new construction – community buildings	• Target 15 percent reduced energy use in existing municipal and commercial buildings • Aim for all new municipal buildings to be 27 percent more efficient than existing buildings • Target at least 7 percent reduction in both new and existing buildings from energy tracking and metering • Facilitate flexibility to move toward low-carbon and renewable energy sources to power new municipal, residential, or commercial buildings
Clean Energy (CE)	**CE1:** Increase municipal renewable energy generation and infrastructure expansion **CE2:** Increase low-carbon and renewable energy generation in residential and commercial sectors	• Target generating at least 5MW of solar power annually by 2040 • Target having at least 5,000 homes with solar photovoltaic systems, generating 70 MW of solar power annually by 2040 • Aim for at least 200 businesses with solar PV systems, generating 70 MW of solar power annually by 2040 • Replace at least 40 percent of natural gas used in buildings with electric heat pumps
Low-Carbon Transportation (T)	**T1:** Transition municipal fleet to electric or alternative fuels **T2:** Develop and incentivize sustainable transportation	• Target 50 percent of new motorcycles, passenger cars, and light-duty trucks being EV in 2030 and 100 percent in 2040 • New buses and heavy-duty trucks to be 25 percent EV in 2030 and 75 percent EV in 2040 • Enhance bike-friendly infrastructure resulting in 1.6 percent reduction in VMT for motorcycles and passenger cars • Improve pedestrian-friendly infrastructure resulting in a 5 percent reduction in VMT for motorcycles and passenger cars • Support transit-oriented design in the community resulting in 20 percent reduction in VMT for motorcycles and passenger cars in areas that are redeveloped

Climate Priority	Strategies	Objectives
Sustainable Design and Land Use Planning (SD)	**SD1:** Incentivize transit-oriented and mixed-use development **SD2:** Amend codes and policies to promote clean energy development	• Adopt a policy mandating solar-ready roofs for all new commercial construction (with exclusions) • Mandate EV-charging in new commercial and multi-family developments
Materials and Waste (MW)	**MW1:** Enhance waste reduction programs and circular solutions	• Increase composting rate by at least 9 percent by 2030 • Target zero waste production by 2040
Carbon Sequestration and Removal (CS)	**CS1:** Quantify, preserve, and expand natural resources, habitats and trees **CS2:** Explore emergent carbon sequestration approaches/ technology	• Preserve acreage according to the Community Preservation Fund Project Plan (2021), which identified nearly 17,000 acres as highest priority for conservation • Explore and implement carbon sequestration technologies as they become available to reach net zero by 2040
Capacity Building (CB)	**CB1:** Increase capacity of Town personnel and demonstrate leadership **CB2:** Increase industry and community education and training	• Hire at least one employee to manage sustainability implementation and seek funding for implementation of CAP priorities • Perform reporting and disclosure on CAP implementation and 2040 carbon neutrality goal by maintaining a reporting platform to track emissions, which will be updated every other year • Revisit and update the CAP based on the biennial GHG accounting every 5-years

Climate Priorities

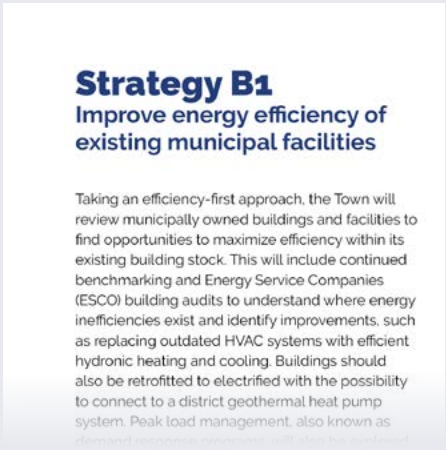
How to Read the Plan

01 Climate Priorities

Overarching focal points for climate action.

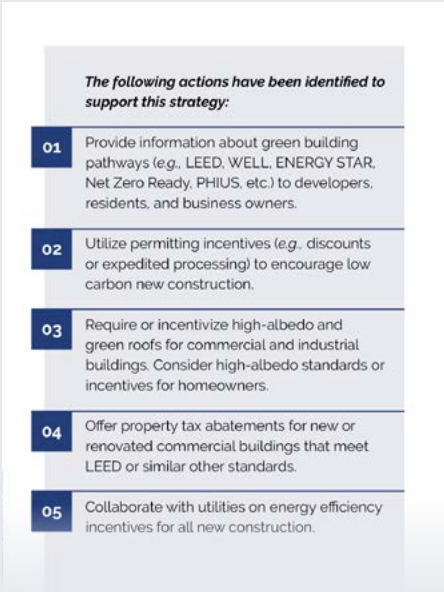
02 Strategies

Approach to achieving GHG reductions within each climate priority.



03 Supporting Actions

Recommended policies, programs, projects, and/or steps to help achieve each strategy.



04 Carbon Reduction

Potential GHG reduction accounting from each strategy that can be achieved by implementing the recommended actions in this plan.

Significant reduction: 10,000+ MT CO_2e

Large reduction: 1,000 – 10,000 MT CO_2e

Moderate reduction: 100 – 1,000 MT CO_2e

Marginal reduction: 100 MT CO_2e or less

05 Cost

High level cost rankings are provided at the strategy level. They represent direct costs that may be borne by the Town and are not already allocated within the existing budget that are needed to implement the policies, programs, projects, and steps included within the plan.

$$$ **High:** Significant capital costs, requiring large one-time investment or significant ongoing costs; External funding sources will be necessary to implement

$$ **Medium:** Funding through capital improvement program ongoing (e.g., new program) or one-time cost (e.g., consulting fees) that can be integrated into annual budget requests; Consider leveraging external funding sources

$ **Low:** Can be implemented within existing budgets

06 Recommendations

Low-cost, high yield measures that the Town should strongly consider enacting or implementing

07 Timeframe

A high-level timeframe for implementation is provided to help guide the Town towards enacting this plan and provide a general framework for implementation priorities.

Near-term: 1 – 3 years

Long-term: 5 – 8 years

Mid-term: 3 – 5 years

Ongoing

08 Co-benefits

While the ultimate aim of this CAP is to provide the road map to a carbon neutral future, the selected strategies and actions also provide synergistic benefits to the community. From preparing for climate change by enhancing resilience, improving public health and safety, investing in the local economy, and more, the recommendations included within this plan are designed to improve the overall quality of life of the Southampton community, while also enabling significant carbon reductions.

- Improve health and safety
- Strengthen regional partnerships
- Invest in local economy
- Potential for cost savings
- Reduce traffic/congestion
- Enhance resilience
- Government leadership
- Ecological restoration

Buildings

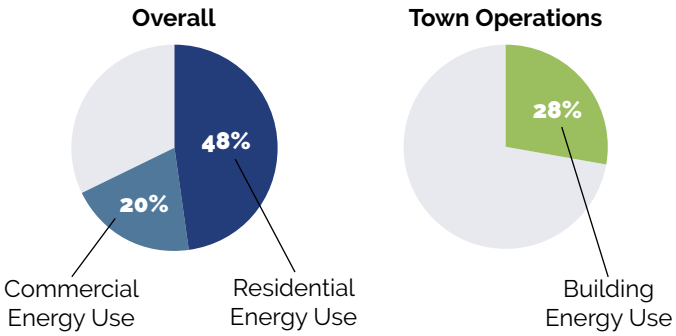
In Southampton, the building sector represents a significant opportunity to achieve drastic GHG emission reductions while reducing energy costs for both residents and the Town.

 Photo: Michael O'Connor, CC BY-SA 4.0 via Wikimedia Commons

Within the Town of Southampton, residential energy use and commercial energy use account for 48 and 20 percent of annual emissions, respectively. In terms of Town operations, building energy use accounts for 28 percent of total Town operations emissions annually. As a designated NYSERDA Clean Energy Community, the Town has committed to benchmarking energy use at all municipal facilities larger than 1,000 square feet and to make this data available to the public on an annual basis. Measuring and sharing data on building energy use will help identify opportunities to cut energy waste and will allow residents to compare year-over-year energy usage and GHG emissions.

Beyond benchmarking, numerous strategies to reduce emissions associated with Southampton's building sector have been identified to further encourage energy conservation through a comprehensive approach. The Town will retrofit existing municipal buildings and construct highly efficient new ones, explore district energy systems, promote building electrification, and encourage passive design standards for high-performance buildings to meet the 2040 carbon neutral objective. Incentivization structures, grants, rebate programs, and other beneficial financing programs will be explored and offered to assist residential and commercial business owners alike who chose to retrofit their properties as well. Over time, however, these energy conservation strategies will save building-owners money as their monthly utility fees go down due to reduced energy use.

FIGURE 12
ANNUAL EMISSIONS



By targeting the following strategies, the Town of Southampton can reduce GHG emissions by 7 percent, or 51,900 MT CO_2e annually by 2040, which is equivalent to the GHG emissions produced by powering 6,537 homes for one year (EPA GHG Equivalence Calculator, 2023).

GHG EMISSIONS

-7%
(51,900 MT CO_2e annually) by 2040

=

Powering 6,537 homes for 1 year

Objectives: Buildings

01
Target **15%** reduced energy use in existing municipal and commercial buildings

02
Aim for all new municipal buildings to be **27%** more efficient than existing buildings

03
Target at least **7%** reduction in both new and existing buildings from energy tracking and metering

04
Move towards **low-carbon and renewable** energy sources to power new buildings

Strategy B1

Improve energy efficiency of existing municipal facilities

Taking an efficiency-first approach, the Town will review municipally owned buildings and facilities to find opportunities to maximize efficiency within its existing building stock. This will include continued benchmarking and Energy Service Companies (ESCO) building audits to understand where energy inefficiencies exist and identify improvements, such as replacing outdated HVAC systems with efficient hydronic heating and cooling. Buildings should also be retrofitted to electrified with the possibility to connect to a district geothermal heat pump system. Peak load management, also known as demand response programs, will also be explored to determine whether the Town can participate by shifting electrical usage during peak periods to promote energy resilience while saving energy and lowering municipal utility bills.

The following actions have been identified to support this strategy:

01	Continue benchmarking Town facilities.
02	Continue ESCO audits.
03	Consider implementing or updating building controls (e.g., retro commissioning) to reduce energy consumption.
04	Renovate or retrofit existing Town buildings to hydronic heating and cooling, where applicable.
05	Study feasibility of district thermal energy systems at Bridgehampton Commons and Hampton Bays.
06	Explore building electrification where district energy is not considered viable.
07	Develop electrical peak load management program.

Strategy B2

Construct energy efficient new municipal facilities

Newly constructed buildings and facilities provide an excellent opportunity to incorporate high-performance building systems using passive design strategies as well as highly efficient new mechanical systems. The Town of Southampton should commit to building electrification and hydronic heating and cooling for all new municipal buildings. Further, all new buildings should be constructed to achieve ambitious Site energy use intensity (EUI) targets and comply with the NYStretch Code which the Town voluntarily chose to adopt and is more stringent than New York States' base code.[2] The Town should also explore district energy systems, thermal energy storage, and the use of waste heat, such as co-generation, for large, scalable energy savings.

2 A stretch energy code is simply an energy code that is more stringent than New York State's base energy code that can be adopted by local jurisdictions. Jurisdictions on Long Island, in the Hudson River valley, in the state of Massachusetts, and elsewhere, including New York City, have adopted stricter energy standards to ensure constituents enjoy reduced energy costs. Local adoption of a stretch energy code shows leadership by protecting the environment while creating healthier, more comfortable buildings with lower operating costs. In order to prevent a patchwork of stricter energy codes, NYSERDA developed a model stretch energy code that is effective, flexible, and enforceable (NYSERDA 2019).

The following actions have been identified to support this strategy:

01 Comply with adopted NYStretch Code and consider compliance with subsequent revisions.

02 As part of the design process, use Portfolio Manager Statement of Energy Design Intent to establish a target Site EUI corresponding to an ENERGY STAR score of **75 or greater** for the building design. Using design energy model results, compare model predicted Site EUI to the project target Site EUI.

03 Explore hydronic heating and cooling for all new buildings.

04 Design for low temperature heating and high temperature cooling.

05 Connect new buildings to district energy where viable.

06 Consider committing to building electrification where district energy is not viable.

07 Utilize waste heat, where feasible, as fuel source for comfort heating and domestic hot water.

Strategy B3

Track and reduce energy use of existing and new municipal facilities

In both new and existing buildings, tracking energy use over time allows for more insight into how the building is operating in the long term. By using ENERGY STAR's Portfolio Manager, as well as metering and sub-metering, the Township can target lower EUIs and reduce energy use.

The following actions have been identified to support this strategy:

01 Use Portfolio Manager to track building performance and do at least one of the following:

- **a.** Achieve an ENERGY STAR score of 75 or greater (where applicable).
- **b.** Reduce Site EUI to 85 percent or less of the National Median Site EUI as indicated in Portfolio Manager for the subject building.
- **c.** Reduce Site EUI of subject building by at least 15 percent from an established baseline.

Strategy B4

Incentivize sustainable retrofits to existing residential and commercial buildings

Retrofitting existing buildings, as opposed to constructing new buildings, provides substantial upfront carbon savings by reducing the GHG emissions associated with new building materials and construction. Therefore, providing a robust incentivization structure to encourage sustainable retrofits for existing residential and commercial buildings is a key strategy in Southampton's CAP. The Town will strive to be a partner to both homeowners and local businesses who want to improve their buildings' energy efficiency. By capitalizing on partnerships with utility- and state-sponsored programs, such as rebate-stacking, buy-down programs, and energy audit financing, the Town will explore opportunities to help finance these valuable upgrades.

The following actions have been identified to support this strategy:

01 Pursue 'rebate stacking' programs to provide additional incentives on top of utility-sponsored incentives (e.g., Home energy audit "buy-down" program, Business energy efficiency implementation).

02 Pursue grants to fund free energy and water audits and energy savings guidelines for small businesses, non-profits, and low-income residents.

03 Promote participation in New York State Energy Improvement Corporation's Energize NY Benefit Financing Program.

04 Provide information about green building pathways for existing residential buildings (e.g., DOE Building America, PHIUS EnerPHit) to developers and residents.

05 Work with utility providers to provide education about existing rebate and incentive programs.

06 Explore a program to leverage private financing to offer building owners low-interest rate loans to electrify.

Strategy B5

Incentivize sustainable new construction – community buildings

When new community buildings and commercial buildings of a certain scale are constructed, green building standards and certifications should be explored and incentivized. This could include, but is not limited to, programs such as Leadership in Energy and Environmental Design (LEED), WELL, Passive House Institute U.S. (PHIUS), National Green Building Standard (NGBS), among others. Incentivization structures, such as permitting benefits and tax abatements, should be explored to facilitate sustainable new construction for developers, residents, and business owners who opt to participate.

The following actions have been identified to support this strategy:

01 Provide information about green building pathways (e.g., LEED, WELL, ENERGY STAR, Net Zero Ready, PHIUS, ICC 700 NGBS, etc.) to developers, residents, and business owners.

02 Utilize permitting incentives (e.g., discounts or expedited processing) to encourage low carbon new construction.

03 Consider requiring or incentivizing high-albedo and green roofs for commercial and industrial buildings. Consider high-albedo standards or incentives for homeowners.

04 Offer property tax abatements for new or renovated commercial buildings that meet LEED or similar other standards.

05 Offer property tax abatements to residential homeowners who construct their homes to meet LEED or NGBS Silver or higher.

06 Collaborate with utilities on energy efficiency incentives for all new construction.

Buildings

Strategy B1: Improve energy efficiency of existing municipal facilities

Carbon Reduction

Cost $ $ — $ $ $

		Timeframe	Co-benefits
01	Continue benchmarking Town facilities.		
02	Continue ESCO audits.*		
03	Consider implementing or updating building controls (e.g., retro commissioning) to reduce energy consumption.		
04	Renovate or retrofit existing Town buildings to hydronic heating and cooling, where applicable.	—	
05	Study feasibility of district thermal energy systems at Bridgehampton Commons and Hampton Bays.		
06	Explore building electrification where district energy is not considered viable.		
07	Develop electrical peak load management program.		

Strategy B2: Construct energy efficient new municipal facilities

Carbon Reduction

Cost $ $ $

		Timeframe	Co-benefits
01	Continue to comply with the adopted NYStretch Code and subsequent revisions.		

Strategy B2 (continued)

02	As part of the design process, use the Portfolio Manager Statement of Energy Design Intent to establish a target Site EUI corresponding to an ENERGY STAR score of 75 or greater for the building design. Using design energy model results, compare model predicted Site EUI to the project target Site EUI.		
03	Explore hydronic heating and cooling for all new buildings.		
04	Connect new buildings to district energy where considered viable.		
05	Design for low temperature heating and high temperature cooling.		
06	Consider committing to building electrification where district energy is not viable.		
07	Utilize waste heat, where feasible, as fuel source for comfort heating and domestic hot water.		

Strategy B3: Track and reduce energy use of existing and new municipal facilities


Carbon Reduction


Cost

		Timeframe	Co-benefits
01	Use Portfolio Manager to track building performance and do at least one of the following: **a.** Achieve an ENERGY STAR score of 75 or greater (where applicable). **b.** Reduce Site EUI to 85 percent or less of the National Median Site EUI as indicated in Portfolio Manager for the subject building. **c.** Reduce Site EUI of the subject building by at least 15 percent from an established baseline.		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Buildings

Strategy B4: Incentivize sustainable retrofits to existing residential and commercial buildings

Carbon Reduction: ↓ ↓ ↓ ↓

Cost: $ $ — $ $ $

		Timeframe	Co-benefits
01	Pursue 'rebate stacking' programs to provide additional incentives on top of utility-sponsored incentives (e.g., home energy audit "buy-down" program, business energy efficiency implementation).		
02	Pursue grants to fund free energy audits, water audits, and energy savings guidelines for small businesses, non-profits, and low-income residents.		
03	Promote participation in New York State Energy Improvement Corporation's Energize NY Benefit Financing Program.		
04	Provide information about green building pathways for existing residential buildings (e.g., DOE Building America, PHIUS EnerPHit) to developers and residents.		
05	Work with utility providers to provide education about existing rebate and incentive programs.*		
06	Explore a program to leverage private financing to offer building owners low-interest rate loans to electrify.		

Strategy B5: Incentivize sustainable new construction – community buildings

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Provide information about green building pathways (e.g., LEED, WELL, ENERGY STAR, Net Zero Ready, PHIUS, ICC 700 NGBS) to developers, residents, and business owners.*		
02	Utilize permitting incentives (e.g., discounts or expedited processing) to encourage low carbon new construction.		
03	Consider requiring or incentivizing high-albedo and green roofs for commercial and industrial buildings. Consider high-albedo standards or incentives for homeowners.*		
04	Offer property tax abatements for new or renovated commercial buildings that meet LEED or similar other standards.		
05	Offer property tax abatements to residential homeowners who construct their homes to meet LEED or NGBS Silver or higher.		
06	Collaborate with utilities on energy efficiency incentives for all new construction.		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Clean Energy

A primary objective of Southampton's sustainability vision is to reach 100 percent renewable energy and achieve carbon neutrality by 2040. The transition to low-carbon, renewable energy is vital to achieving both goals.

Based on the 2019 baseline community emissions, Southampton relies on a combination of electricity, fuel oil, and natural gas energy sources. In the residential sector, fossil-fuel based electricity comprises 74 percent of emissions, fuel oil represents 17 percent, and natural gas comprises 9 percent. In the commercial sector, electricity similarly is the largest contributor, representing nearly 80 percent of commercial energy emissions, fuel oil comprises 8 percent, and natural gas represents 13 percent.

To facilitate the transition to clean energy within Southampton, switching from natural gas systems to clean energy, also known as fuel switching, is essential. A substantial reduction in GHG emissions is expected over the coming decades resulting from the decarbonization of the electric grid as the region shifts to integrate offshore wind, hydro, and other non-fossil fuel power sources as part of the state's goal to achieve 70 percent renewable electricity by 2030 and 100 percent non-emissions electricity by 2040 (NYSERDA Clean Energy Standard).

There are many tangible ways in which Southampton can further advance this clean energy transition within the Town's borders. Increasing renewable energy systems within both municipally owned buildings and land, as well as privately owned residential and commercial properties will allow the Town to directly reduce carbon emissions resulting from electricity consumption while increasing energy resilience.

By targeting the following strategies, the Town of Southampton can reduce town-wide GHG emissions by an additional 8 percent, or 62,200 MT CO_2e annually, by 2040, which is equivalent to the avoidance of nearly 69 million pounds of coal being burned (EPA GHG Equivalence Calculator, 2023).

GHG EMISSIONS

-8%
(62,200 MT CO_2e annually) by 2040

=

69,000,000 lbs. of coal being burned

Objectives: Clean Energy

01
Target generating at least **5MW** of solar power annually by 2040

02
Target having at least **5,000** homes with solar photovoltaic (PV) systems, generating 70 MW of solar power annually by 2040

03
Aim for at least **200** businesses with solar PV systems, generating 70 MW of solar power annually by 2040

04
Replace at least **40%** of natural gas used in buildings with electric heat pumps

Strategy CE1

Increase municipal renewable energy generation and infrastructure expansion

The first strategy under the Clean Energy climate priority is to increase renewable energy generation and infrastructure within the Township's purview. There are many opportunities to expand the municipality's own renewable energy generation operations, by adding PV arrays on municipal buildings and within parking lots, for instance, as well as by bridging partnerships with neighboring communities and private entities for larger-scale solar and wind installations. Beyond solar, innovative technologies, such as energy production from organic waste and thermal energy storage, will be explored to further advance this transition.

The following actions have been identified to support this strategy:

01 Assess feasibility of additional solar PV and geothermal systems at municipal parking facilities.

02 Assess public-private-partnerships to develop large-scale solar arrays that offset costs/provide community distributed energy opportunities.

03 Collaborate with PSEG and LIPA to upgrade electric grid infrastructure and add smart meters.

04 Continue supporting offshore wind and wind projects that provide renewable energy to South Fork.

05 Build partnerships to create micro-grids to improve reliability and help address projected shortfalls in peak power supply.[2]

06 Form cross-community partnerships to assess potential for large-scale energy production from organic waste (e.g., anerobic digestion/biogas) within the Town of Southampton.

07 Evaluate degraded/underutilized and/or brownfield sites for potential remediation and re-purposing for low carbon energy production through existing BOA program or other planning analyses.

08 If district energy is determined to be viable through further feasibility studies, install thermal storage (storing hot or chilled water) to take advantage of day-ahead pricing or shifting peak demand.

2 A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Micro-grids can improve customer reliability and resilience to grid disturbances.

Strategy CE2

Increase low-carbon and renewable energy generation in residential and commercial sectors

Beyond municipal operations, there are several vital actions that can be accomplished within the residential and commercial sectors to contribute to Southampton's clean energy transition. Bridgehampton Commons and Hampton Bays, for instance, are both potential candidates for feasibility studies for future district energy systems, which would convert a portion of the Town's natural gas usage to electricity and provide economies of scale. Residents and commercial businesses can also contribute by upgrading their HVAC system with electric heat pumps, which are more efficient than furnaces and replace the use of natural gas.

The following actions have been identified to support this strategy:

01 Explore and study thermal energy network and district energy potential for sites identified in DH/C pre-feasibility study (*i.e.,* Montauk Highway, Bridgehampton Commons, and Suffolk County Sheriff's Office) through NYSERDA programs and initiatives such as:

a. Just Transition Site Reuse Planning Program (PON 4563)

b. Community Heat Pump Systems (PON 4614)

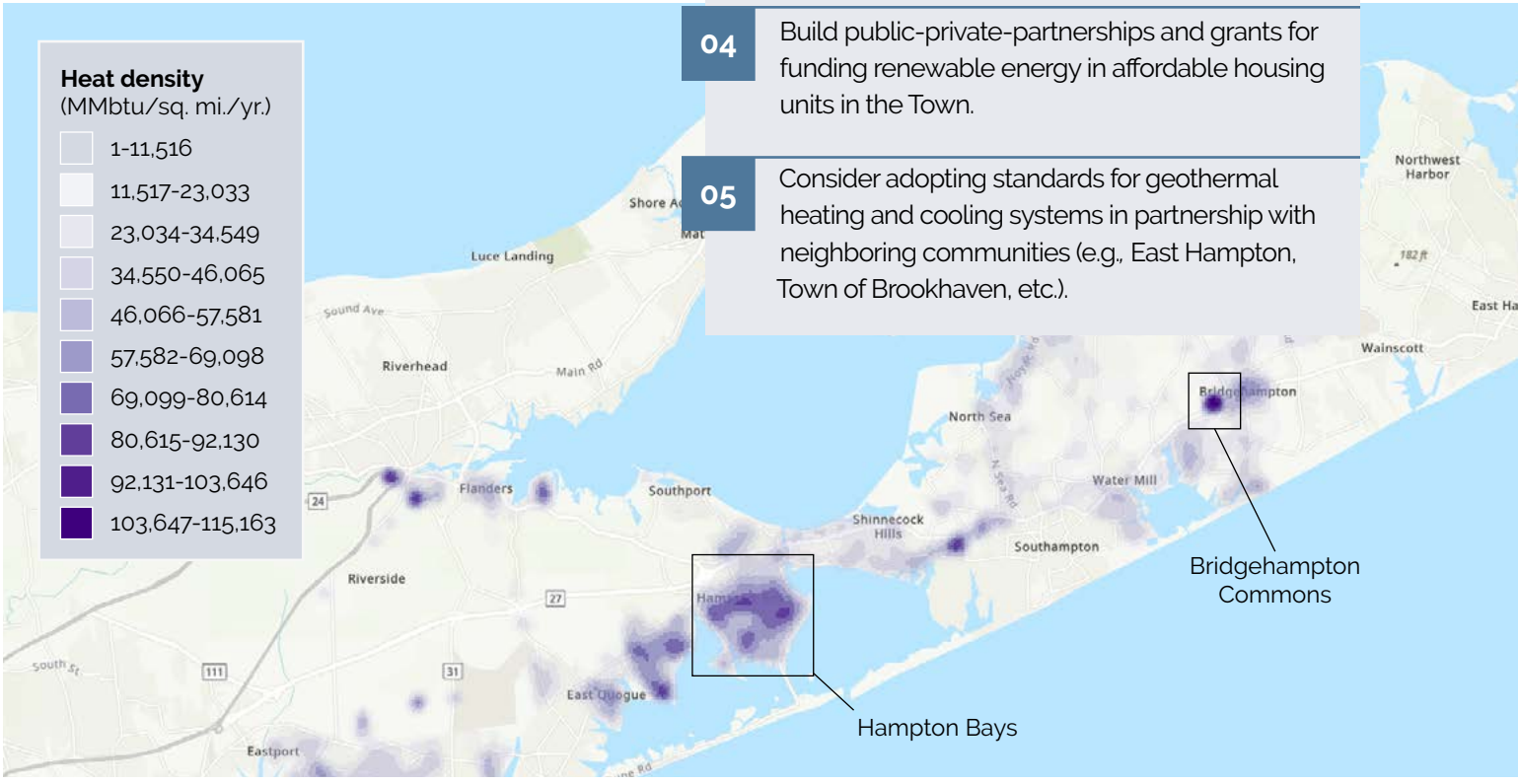
02 Explore incentives for distributed energy systems including small battery energy storage systems (BESS) for commercial developments.

03 Stay current with the ongoing development of New York State CLCPA and the Final Scoping Plan to gain an understanding of legislative impacts (e.g., carbon-free electric grid goals).

04 Build public-private-partnerships and grants for funding renewable energy in affordable housing units in the Town.

05 Consider adopting standards for geothermal heating and cooling systems in partnership with neighboring communities (e.g., East Hampton, Town of Brookhaven, etc.).

GIS ANALYSIS ON DISTRICT ENERGY POTENTIAL



Clean Energy

CE1: Increase municipal renewable energy generation and infrastructure expansion

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Assess feasibility of additional solar PV and geothermal systems at municipal parking facilities.		
02	Assess public-private-partnerships to develop large-scale solar arrays that offset costs/provide community distributed energy opportunities.		
03	Collaborate with PSEG and LIPA to upgrade electric grid infrastructure and add smart meters.*		
04	Continue supporting offshore wind and wind projects that provide renewable energy to South Fork.		
05	Build partnerships to create micro-grids to improve reliability and help address projected shortfalls in peak power supply.*		
06	Form cross-community partnerships to assess potential for large-scale energy production from organic waste (e.g., anerobic digestion/biogas) within the Town of Southampton.*		
07	Evaluate degraded/underutilized and/or brownfield sites for potential remediation and repurposing for low carbon energy production through existing BOA program or other planning analyses.		
08	If district energy is determined to be viable through further feasibility studies, install thermal storage (storing hot or chilled water) to take advantage of day-ahead pricing or shifting peak demand.		

CE2: Increase low-carbon and renewable energy generation in residential and commercial sectors

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Explore and study thermal energy network and district energy potential for sites identified in DH/C pre-feasibility study (i.e., Montauk Highway, Bridgehampton Commons, and Suffolk County Sheriff's Office) through NYSERDA programs and initiatives.		
02	Explore incentives for distributed energy systems including small battery energy storage systems (BESS) for commercial developments.		
03	Stay current with the ongoing development of NYS CLCPA and the Final Scoping Plan to gain an understanding of legislative impacts (e.g., carbon-free electric grid goals).		
04	Build public-private-partnerships and grants for funding renewable energy in affordable housing units in the Town.		
05	Consider adopting standards for geothermal heating and cooling systems in partnership with neighboring communities (e.g., East Hampton, Town of Brookhaven).		

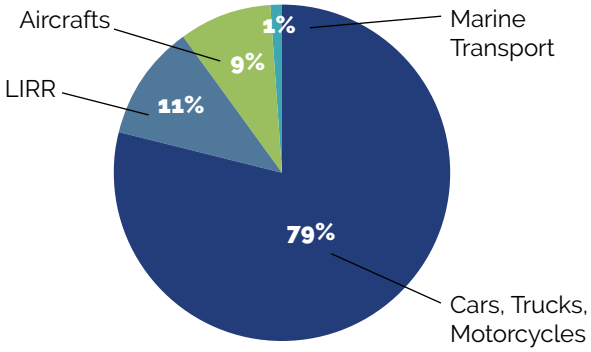
**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Low-Carbon Transportation

The transition to low-carbon transportation within Southampton will not only reduce emissions and result in air quality improvements, but will also improve the pedestrian and bicycle experience within the Town through multi-modal network expansion.

Within the Town of Southampton, transportation accounts for 26 percent of all GHG emissions townwide. Consumption of gasoline and diesel by cars, trucks, and motorcycles contributes to 79 percent of overall transportation emissions. Diesel used by the LIRR contributes another 11 percent and aircrafts using jet fuel and aviation gasoline contribute 9 percent. The use of gasoline and diesel for marine transportation contributes one percent. Therefore, decarbonizing the transportation sector by transitioning to electric or other alternative zero-emissions fuel sources provides a significant opportunity to reduce emissions.

FIGURE 13
TRANSPORTATION EMISSIONS



To support the transition to clean, low-carbon transportation, the Town will promote and incentivize the expansion of EV use and encourage the installation of EV-charging stations throughout the Town to make electric vehicle use more convenient. Additionally, the Town will transition its municipal vehicle fleet by implementing a green purchasing policy, studying alternative fuel use, and exploring partnerships with neighboring municipalities to build a shared fleet and fueling station agreement. Furthermore, a critical component of the Town's strategy to reduce transportation-related carbon emissions will be the installation, expansion, and enhancement of Southampton's multi-modal networks. Improvements in the bicycle and sidewalk networks, as well as initiatives such as a townwide bike share program and micro-mobility options, will enable the Town to cut down on vehicle-related emissions while improving the safety and enjoyment of pedestrians and cyclists. This strategy has the added benefit of simultaneously supporting residents' health and well-being due to increased physical activity, improving safety, and reducing household cost burdens.

By targeting the following strategies, Southampton can reduce townwide carbon emissions by roughly 5 percent, or 37,300 MT CO_2e annually by 2040, which is equivalent to the GHG emissions produced by consuming over 4 million gallons of gasoline (EPA GHG Equivalence Calculator, 2023).

GHG EMISSIONS

-5%
(37,300 MT CO_2e annually) by 2040

=

4,000,000 gallons of gasoline

Objectives: Low-Carbon Transportation

01

Target
50%
of new motorcycles, passenger cars, and light-duty trucks being EV in 2030 and 100 percent in 2040

02

Target new buses and heavy-duty trucks to be
25%
EV in 2030 and 75 percent EV in 2040

03

Enhance bike-friendly infrastructure resulting in
1.6%
reduction in VMT for motorcycles and passenger cars

04

Improve pedestrian-friendly infrastructure resulting in a
5%
reduction in VMT for motorcycles and passenger cars

05

Support transit-oriented design resulting in
20%
reduction in VMT for motorcycles and passenger cars in areas that are redeveloped

Strategy T1
Transition municipal fleet to electric or alternative fuels

Regarding Town operations, **vehicle- and equipment-related emissions account for 65 percent of Southampton's municipal operations emissions – a significant share.** The Town's municipal fleet includes over 150 heavy and light trucks, 4 buses, and nearly 150 passenger vehicles, as of 2018. Transitioning the Town's vehicle fleet to electric vehicles, or other non-petroleum powered transport, is a significant step the Town can take to reduce emissions in this sector. A green purchasing policy should be adopted that mandates all new Town-owned vehicles be electric or alternative-fuel based so that the existing gas-powered fleet can be phased out over time. Similarly, the Town can explore the use of micro-mobility options, such as minibuses or shuttle services, and work with neighboring municipalities to enter into fleet-sharing agreements.

The following actions have been identified to support this strategy:

01 Conduct alternative fuels (including EVs) fleet study to determine best replacement options, costs, and infrastructure requirements.

02 Evaluate use of electric or alternate fuel minibuses to provide transportation for seniors and persons who are disabled.

03 Implement green purchasing policy for fleet vehicles to replace with alternative fuels, hybrid, or EV.

04 Reduce fleet size through vehicle sharing between departments. Explore Town Capital Leasing in place of purchases to reduce upfront cost differential.

05 Install GPS tracking and anti-idling technology in fleet vehicles.

06 Explore intermunicipal agreements with neighboring municipalities for use and consolidation of general fueling stations and/or fleet sharing.

07 Deposit a percentage of fuel cost savings into a Town Climate Smart Fund to fund additional climate action projects.

08 Continue expanding "green zone" practices across all Town-owned properties.[3]

3 Green zones are areas that provide local governments with the flexibility to focus on a variety of issues related to sustainability. Green zones can be created in a variety of ways, including zoning a specific area as a stationary "green zone" or green zones can be drafted to create floating zones, whereby a neighborhood can petition to adopt the floating zone. Local governments use multiple strategies within green zones to help reduce pollution. For example, some common provisions included in green zones include signage to deter diesel truck idling, buffer zones for auto-related operations from houses, land use restrictions, and others (Sustainability Development Code).

Strategy T2
Develop and incentivize sustainable transportation

The strategy to develop and incentivize sustainable transportation within the Town of Southampton is three-pronged. First, by promoting the transition to EV and alternative fuel-based ridership, the Town can reduce harmful emissions while supporting convenient transportation and economic growth. Next, by making the Town more pedestrian- and bicycle-friendly, residents can safely and conveniently cut down on short trips. This is significant considering the DOT estimates that over 50 percent of all household-based vehicle trips, equating to roughly one-third of all household VMT, is from trips under ten miles (DOT, 2014). Finally, developing micro-mobility services and an inter-municipal network of transit hubs and car-share options will enable residents to opt for sustainable, convenient transit. Considering the large influx of visitors and seasonal residents who come to Southampton in the summer, this approach could drastically cut townwide emissions.

Over 50 percent of all household-based vehicle trips, equating to roughly one-third of all household VMT, is from trips under ten miles.

The following actions have been identified to support this strategy:

01 Implement the NYSDOT's GreenLITES voluntary self-certification program for local transportation infrastructure projects whenever possible.

02 Evaluate feasibility of expanding townwide bicycle network and parking infrastructure, including bike rental program, public bike parking, and site plan requirements for bicycle access particularly in hamlet centers, beach parking lots, and transit hubs (e.g., LIRR station). Explore a partnership with Oonee and other innovative bike solutions, including business case analysis for the Town to subsidize.

03 Promote and incentivize car share programs, including electric options.

04 Incentivize carpooling and vanpooling through free parking and ride lots, preferred parking at transit hubs, etc.

05 Develop an expedited permit process for private installation of alternative fuel and EV charging infrastructure at commercial and residential properties.

06 Consider requiring or incentivizing EV charging stations at businesses.

07 Explore feasibility of implementation of EV charging 'hubs' ('gas' stations for EVs) through a third-party provider (e.g., Revel Superhubs). Could serve Town of Southampton and adjacent Towns as a cluster.

08 Pursue feasibility study and funding to site and construct intermodal transit hub.

09 Expand network of sidewalks/multi-use/ multi-modal paths to encourage pedestrian activity in the Town and improve walkability.

10 Evaluate, develop, and implement a municipal action plan for an East End Inter-Hamlet Mobility Study that revisits and updates the South Fork Coordinated Rail-Bus network from the **2009 Volpe study**, and evaluates other relevant recommendations for intermodal transport between hamlets.

11 Assess the existing Circuit electric micro-shuttle service zone to determine feasibility of expansion and improved connectivity between hamlets.

Low-Carbon Transportation

T1: Transition municipal fleet to electric or alternative fuels

Carbon Reduction: ↓↓

Cost: $$$

		Timeframe	Co-benefits
01	Conduct alternative fuels (including electric vehicles) fleet study to determine best replacement options, costs, and infrastructure requirements.		
02	Evaluate use of electric or alternate fuel minibuses to provide transportation for seniors and persons who are disabled.		
03	Implement green purchasing policy for fleet vehicles to replace with alternative fuels, hybrid, or electric vehicle.		
04	Reduce fleet size through vehicle sharing between departments. Explore Town Capital Leasing in place of purchases to reduce upfront cost differential.		
05	Install GPS tracking and anti-idling technology in fleet vehicles.		
06	Explore intermunicipal agreements with neighboring municipalities for use and consolidation of general fueling stations and/or fleet sharing.		
07	Deposit a percentage of fuel cost savings into a Town Climate Smart Fund to fund additional climate action projects.		
08	Continue expanding "green zone" practices across all Town-owned properties.		

T2: Develop and incentivize sustainable transportation

Carbon Reduction: ↓↓↓↓

Cost: $$ — $$$

		Timeframe	Co-benefits
01	Implement NYSDOT's GreenLITES voluntary self-certification program for local transportation infrastructure projects whenever possible.		

Strategy T2 (continued)

02	Evaluate feasibility of expanding townwide bicycle network and parking infrastructure, including bike rental program, public bike parking, and site plan requirements for bicycle access particularly in hamlet centers, beach parking lots, and transit hubs (i.e., LIRR station). Explore a partnership with OONEE and other innovative bike solutions, including business case analysis for the Town to subsidize.*		
03	Promote and incentivize car share programs, including electric options.*		
04	Incentivize carpooling and vanpooling through free parking and ride lots, preferred parking at transit hubs etc.*		
05	Develop an expedited permit process for private installation of alternative fuel and EV charging infrastructure at commercial and residential properties.		
06	Consider requiring or incentivizing EV charging stations at businesses.		
07	Explore feasibility of implementation of EV charging 'hubs' ('gas' station for EVs) through a third-party provider (i.e., Revel Superhubs). Could serve Town of Southampton and adjacent Towns as a cluster.		
08	Pursue feasibility study and funding to site and construct intermodal transit hub.*		
09	Expand network of sidewalks/multi-use/multi-modal paths to encourage pedestrian activity in the Town and improve walkability.*		
10	Evaluate, develop, and implement a municipal action plan for an East End Inter-Hamlet Mobility Study that revisits and updates the South Fork Coordinated Rail-Bus network from the 2009 Volpe study, and evaluates other relevant recommendations for intermodal transport between hamlets.		
11	Assess the existing Circuit electric micro-shuttle service zone to determine feasibility of expansion and improved connectivity between hamlets.		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Sustainable Design and Land Use Planning

Southampton can further reduce carbon emissions through sustainable design and land-use planning by encouraging growth that supports public transit, compact and mixed-use development, and conservation of Southampton's natural resources.

Encouraging growth within the Town's commercial corridors, instead of in undeveloped or 'greenfield' areas, enables environmental conservation and the preservation of Southampton's rural and maritime heritage. Simultaneously, this strategy reinforces the development of compact, walkable mixed-use districts, creating a sense of place while reducing the need to travel via car.

Southampton can further use sustainable planning, zoning, codes, and policies to promote the expansion of renewable energy production within the Town. To support the clean energy strategies provided throughout this CAP, the Town will need to incentivize the development of solar and wind energy. The transformation to clean energy will increase Southampton's energy independence and resiliency while facilitating renewable energy generation within the Town's borders.

While many of the actions included within this climate priority were considered at the strategy level as enabling actions that support direct carbon reduction initiatives, the sustainable design and land use planning strategies include within this CAP are critical in facilitating the clean energy, low-carbon transportation, and carbon sequestration objectives.

Objectives: Sustainable Design and Land Use Planning

01

Adopt a policy mandating
solar-ready roofs
for all new commercial construction
(with exclusions)

02

Mandate
EV-charging
in new commercial and
multi-family developments

Strategy SD1
Incentivize transit-oriented and mixed-use development

Southampton has already implemented Downtown Overlay Districts, which promote transit-oriented development and smart growth. The Town can build upon this progress by further amending zoning codes to allow for infill development near transit hubs and promoting the transfer of development rights (TDRs) to incentivize developers to build within commercial nodes and nearby transportation centers.

The following actions have been identified to support this strategy:

01 Explore re-development opportunities and incentives of existing buildings and commercial centers.

02 Encourage small-scale, on-site country market/farm to table provisions to serve the residents of a planned residential development and consider modifying Town Code 247-11 to facilitate for smaller scale subdivisions.

03 Promote the TDR to shift new development away from vacant lands and open spaces toward compact, walkable centers and nodes adjacent to transportation centers. Consider prohibiting TDRs to open spaces.

04 Encourage development at and around existing commercial centers to reduce suburban sprawl.

05 Prioritize complete street standards, safe routes to schools, walkability, and connectivity in residential and commercial developments and require fee-in-lieu where not provided.

06 Consider amending zoning code to allow for infill development near municipal transit hubs and employment centers to reduce suburban sprawl.

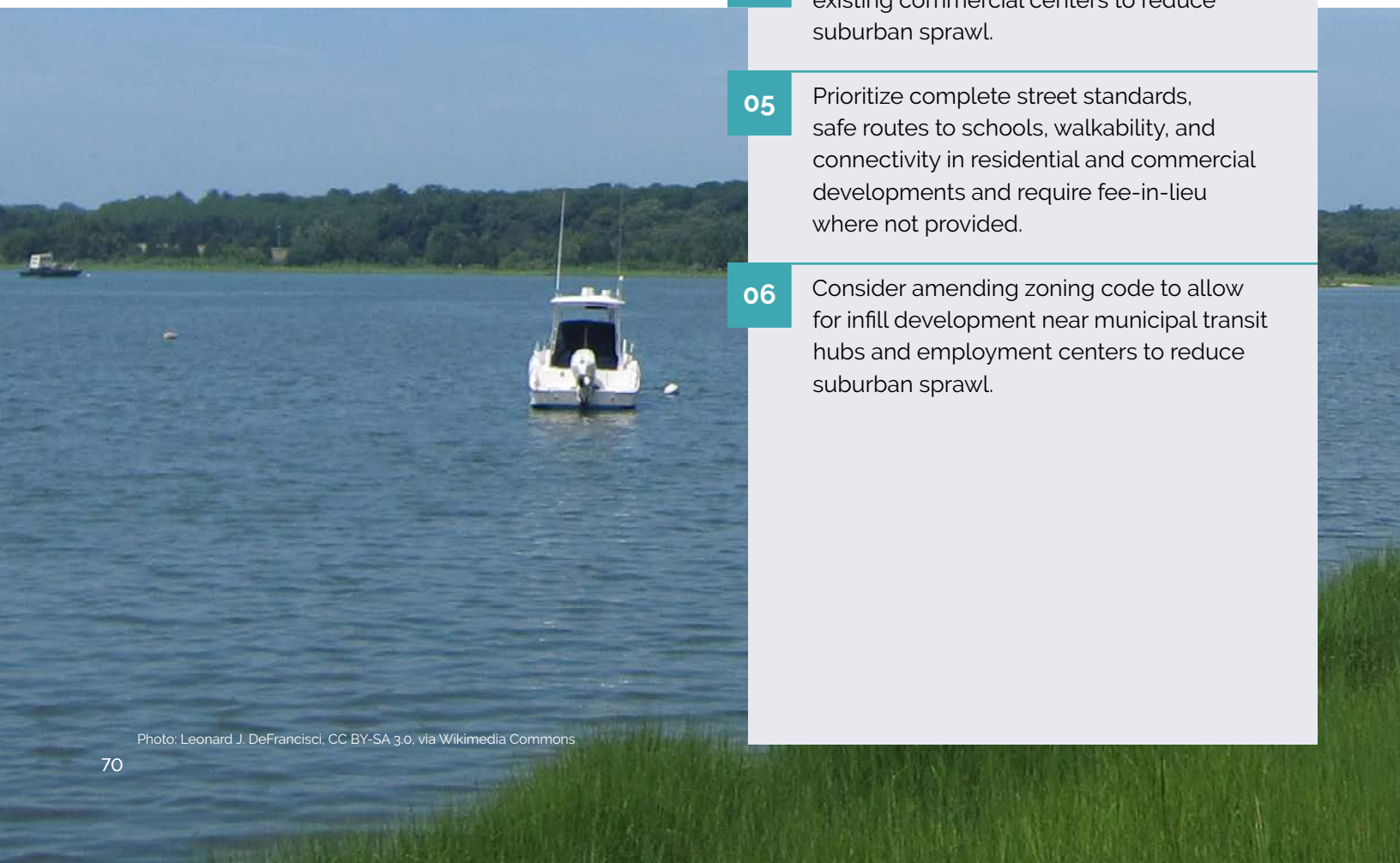


Photo: Leonard J. DeFrancisci, CC BY-SA 3.0, via Wikimedia Commons

Strategy SD2

Amend codes and policies to promote clean energy development

An early promoter of renewable energy, Southampton has offered a solar rebate program since the 2000s. Building on the existing clean energy development incentives, such as the Community Solar Program, Southampton will take extensive steps to support clean energy development. This will include policy measures, such as developing Clean Energy Opportunity zone overlays; code updates, such as solar-ready roofs for new commercial construction; and local and regional collaboration by promoting an offshore wind community.

The following actions have been identified to support this strategy:

01 Participate in regional efforts to promote offshore wind and develop community benefit priorities if/when the Town is asked to be a host community for cable landings.

02 Prioritize placement of large-scale solar to promote residential and commercial renewable energy production

03 Create infrastructure lots for renewable energy in subdivision regulations.

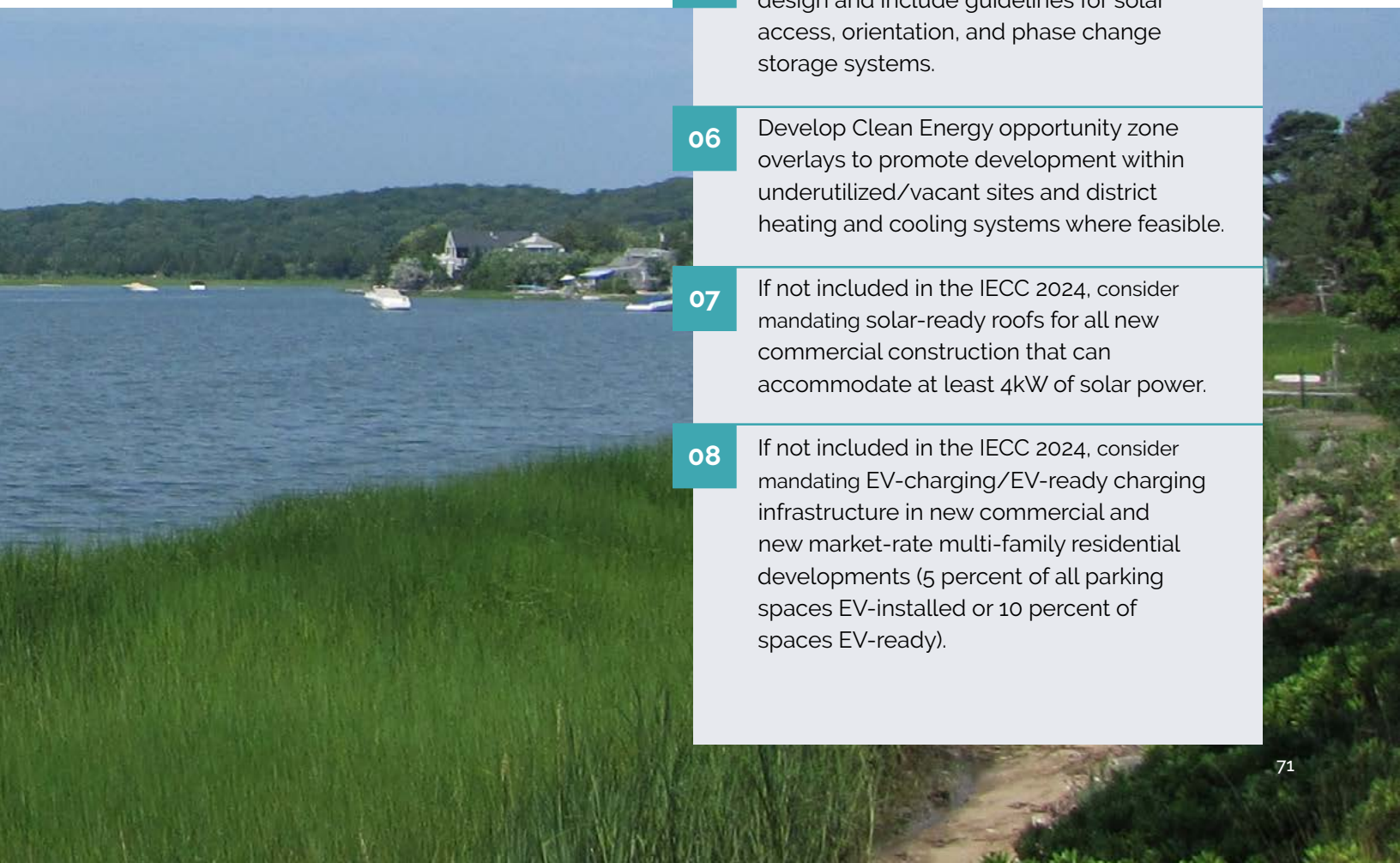
04 Establish Town guidelines and standards for solar site design and incentivize the use of these standards in the development community through expedited review.

05 Establish a Town standard for passive solar design and include guidelines for solar access, orientation, and phase change storage systems.

06 Develop Clean Energy opportunity zone overlays to promote development within underutilized/vacant sites and district heating and cooling systems where feasible.

07 If not included in the IECC 2024, consider mandating solar-ready roofs for all new commercial construction that can accommodate at least 4kW of solar power.

08 If not included in the IECC 2024, consider mandating EV-charging/EV-ready charging infrastructure in new commercial and new market-rate multi-family residential developments (5 percent of all parking spaces EV-installed or 10 percent of spaces EV-ready).



Sustainable Design and Land Use Planning

SD1: Incentivize transit-oriented and mixed-use development

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Explore re-development opportunities and incentives of existing buildings and commercial centers.		
02	Encourage small-scale, on-site country market/farm to table provisions to serve the residents of a planned residential development and consider modifying Town Code 247-11 to facilitate for smaller scale subdivisions.		
03	Promote the transfer of development rights to shift new development away from vacant lands and open spaces toward compact, walkable centers and nodes adjacent to transportation centers. Consider prohibiting transfer of development rights to open spaces.*		
04	Encourage development at and around existing commercial centers to reduce suburban sprawl.		
05	Prioritize complete street standards, safe routes to schools, walkability, and connectivity in residential and commercial developments and require fee-in-lieu where not provided.		
06	Consider amending zoning code to allow for infill development near municipal transit hubs and employment centers to reduce suburban sprawl.*		

SD2: Amend codes and policies to promote clean energy development

N/A

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Participate in regional efforts to promote offshore wind and develop community benefit priorities if/when the Town is asked to be a host community for cable landings.		
02	Prioritize placement of large-scale solar to promote residential and commercial renewable energy production.		
03	Create infrastructure lots for renewable energy in subdivision regulations.		
04	Establish Town guidelines and standards for solar site design and incentivize the use of these standards in the development community through expedited review.*		
05	Establish a Town standard for passive solar design and include guidelines for solar access, orientation, and phase change storage systems.*		
06	Develop Clean Energy opportunity zone overlays to promote development within underutilized/ vacant sites and district heating and cooling systems where feasible.		
07	If not included in IECC 2024, consider mandating solar-ready roofs for all new commercial construction that can accommodate at least 4kW of solar power.		
08	If not included in IECC 2024, consider mandating EV-charging/EV-ready charging infrastructure in new commercial and new market-rate multi-family residential developments (5 percent of all parking spaces EV-installed or 10 percent of spaces EV-ready).		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Materials and Waste

While waste accounts for just 4 percent of townwide emissions annually, based on the 2019 community GHG inventory, waste is a highly visible and emblematic component of local climate action. Communities have the power to influence a global system that delivers goods through their purchasing and consumption habits.

This climate priority first focuses on reducing total waste generated, followed by an emphasis on material recovery and reuse to divert waste from being sent to landfills. By limiting the consumption of single-use plastics, promoting zero waste practices, locally-sourcing materials, and establishing sustainable procurement standards, the Town of Southampton can simultaneously reduce emissions occurring locally and across the globe.

In addition to waste reduction, the Town can enhance reuse and recycling programs to promote circular solutions. Community initiatives, such as composting programs for residents and businesses, aim to remove organic waste from the overall waste stream and divert organic material for other potential beneficial uses (*i.e.,* organic fertilizer/soil, inputs for organic waste to energy systems).

Organic materials, like food scraps and yard waste, are valuable natural resources that can be transformed into earth-enriching compost. Removing more organic matter from the waste stream and improving recycling rates, also means reduced volumes of waste to landfills which are powerful sources of GHG and carbon emissions as well as other toxic substances. This is particularly significant considering that methane emanating from landfills is 21 times more potent than CO_2 in contributing to GHGs. Since Southampton's solid waste is taken to Long Island for disposal upstate or further west, the hauling of the waste contributes to transportation-related emissions as well.

By targeting the following strategies, Southampton can reduce townwide carbon emissions by roughly one percent, or 900 MT CO_2e annually by 2040, which is equivalent to the GHG emissions avoided by 311 tons of waste being recycled instead of sent to a landfill (EPA GHG Equivalence Calculator, 2023).

GHG EMISSIONS

-5%
(37,300 MT CO_2e annually) by 2040

=

311 tons of waste recycled

Objectives: Materials and Waste

01

Increase composting rate by at least **9%** by 2030

02

Target **zero** waste production by 2040

Strategy MW1

Enhance waste reduction programs and circular solutions

In 2011, the Town of Southampton adopted and implemented a 2016 - 2026 Solid Waste Management Plan that placed cost-effective, efficient waste reduction and recycling practices at the forefront of the Town's waste operations mission by expanding recycling streams and incentivizing waste reduction. This strategy, which aims to enhance waste reduction programs and improve circular solutions, will build from the existing Solid Waste Management Plan by offering more options for residents and businesses to sort, manage, and compost organic materials. Additionally, the Town will be renewing focus on waste reduction practices by implementing zero waste procedures for Town staff operations, phasing out single-use plastics, and adopting sustainable procurement standards that consider product supply chains and end-of-life take-back programs for Town operations.

The following actions have been identified to support this strategy:

01 Explore a Town composting program for all food and yard waste.

02 Prioritize recycling/upcycling and consider ways to phase out the use of single-use plastics.

03 Consider incorporating requirements for locally-sourced materials and sustainable building deconstruction practices into local regulations.

04 Launch an Adopt a Drain Program to remove waste from storm drains and improve water quality.

05 Launch Zero Waste office practices campaign for Town Staff.

06 Establish Sustainable Procurement Standards for Town operations.

07 Implement opportunities to support community composting (drop centers) and/or Town-led composting programs (partnerships with Farmer's Markets).

08 Evaluate the elimination of recycling and composting fees.

Materials and Waste

MW1: Enhance waste reduction programs and circular solutions

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Explore a Town composting program for all food and yard waste.*		
02	Prioritize recycling/upcycling and consider ways to phase out the use of single-use plastics.		
03	Consider incorporating requirements for locally-sourced materials and sustainable building deconstruction practices into local regulations.		
04	Launch an Adopt a Drain Program to remove waste from storm drains and improve water quality.		
05	Launch zero waste office practices campaign for Town staff.		
06	Establish Sustainable Procurement Standards for Town operations.*		
07	Implement opportunities to support community composting (drop centers) and/or Town-led composting programs (partnerships with Farmer's Markets).*		
08	Evaluate elimination of recycling and composting fees.		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Carbon Sequestration and Removal

Beyond simply reducing carbon emissions, the Town of Southampton will implement strategies that remove carbon dioxide from the atmosphere as part of the Town's pathway to carbon neutrality.

Carbon sequestration occurs when plants capture CO_2 from the atmosphere and transform it into biomass through photosynthesis. Therefore, policies and programs that restore, conserve, and protect trees and vegetation play an import role in increasing the Town's rate of carbon sequestration.

Recognizing the significant value of trees, marshes, and other carbon sequestering vegetation, the Town of Southampton adopted a Community Preservation Fund Project Plan in 2021 that identified nearly 17,000 acres of land within the Town that is considered high priority for preservation. This includes over 10,500 acres of the Pine Barrens, over 2,000 acres of open spaces and greenbelt areas, 1,800 acres of agricultural lands, and nearly 700 acres of wetlands, in addition to trails, aquifer recharge areas, historically significant places, and parks. Building upon the Community Preservation Fund Project Plan, this climate priority aims to further expand and restore Southampton's natural areas and explore novel carbon removal technologies to increase sequestration.

By targeting the following strategies, Southampton can reduce carbon emissions by roughly 11 percent, or nearly 90,000 MT CO_2e annually by 2040, which is equivalent to the GHG emissions sequestered by nearly 1.5 million tree seedlings grown for 10 years (EPA GHG Equivalence Calculator, 2023).

GHG EMISSIONS

-11%
(90,000 MT CO_2e annually) by 2040

=

1,500,000 tree seedling grown for 10 years

Objectives: Carbon Sequestration and Removal

01

Preserve acreage according to the Community Preservation Fund Project Plan (2021), which identified nearly 17,000 acres as highest priority for conservation, such that:

Forest protection results in
5 MT CO2e
sequestered annually

Salt marshes and seagrasses protection results in
35 MT CO2e
sequestered annually

Restored grasslands sequestered
5 MT CO2e
annually

02

Explore and implement carbon sequestration technologies as they become available to reach
net zero
by 2040

Strategy CS1

Quantify, preserve, and expand natural resources, habitats and trees

This strategy aims to further catalog, preserve, and expand Southampton's riparian areas, natural habitats, and forests. Since not all vegetation sequesters carbon at the same rate, its particularly important to quantify and protect the existing forest and wetland areas within the Town, while simultaneously reforesting and identifying new greenspaces that will continue to increase the sequestration rate for decades to come.

This strategy is considered a critical step within Southampton's path to carbon neutrality since sequestration is responsible for a significant reduction in the Town's GHG emissions. Further, this approach has many synergistic benefits including stormwater and air quality improvements, extreme heat mitigation, while also contributing to the preservation of Southampton's agricultural, rural, and maritime identity.

The following actions have been identified to support this strategy:

01	Conduct a townwide tree inventory.
02	Consider enacting a tree preservation ordinance with linkages to stormwater management/water quality programs.
03	Sponsor reforestation and tree planting programs for carbon sequestration, particularly in areas that would ecologically benefit from reforestation.
04	Participate in a state forest stewardship program and/or Tree City USA.
05	Preserve riparian areas and open space.
06	Hire an arborist.

Strategy CS2

Explore emergent carbon sequestration approaches/ technology

Based on the future GHG forecast findings, there are 275,500 MT CO_2e emissions remaining that will need to be addressed for Southampton to meet its 2040 carbon neutrality target. It is expected that there will continue to be significant technology changes and evolution before 2040 that will enable additional reductions, in addition to policy advocacy and the purchase of offsets. This strategy promotes the Town's continued assessment and implementation of emergent carbon sequestration methods and technologies to enable Southampton to "close the gap" and meet its 2040 carbon goal.

The following actions have been identified to support this strategy:

01 Explore 'Blue Carbon'/Regional Aquatic Carbon Sequestration, including expansion of kelp farming in the East End.

02 Explore pyrolysis processes with the purpose of sequestering carbon in biochar.

03 Explore power-to-x (P2X) processes where CO_2 (from carbon capture) is used for producing green fuels for applicable Town operations.

04 Explore opportunities to promote Carbon Farming (regenerative agriculture).

05 Pilot 'Super Sink' planting program in public spaces (include non-invasive and pollinator friendly species).

Carbon Sequestration and Removal

Cs1: Quantify, preserve, and expand natural resources, habitats, and trees

Carbon Reduction ↓↓↓↓

Cost $$$

		Timeframe	Co-benefits
01	Conduct a townwide tree inventory.		
02	Consider enacting a tree preservation ordinance with linkages to stormwater management/water quality programs.		
03	Sponsor reforestation and tree planting programs for carbon sequestration, particularly in areas that would ecologically benefit from reforestation.*		
04	Participate in a state forest stewardship program and/or Tree City USA.		
05	Preserve riparian areas and open space.		
06	Hire an arborist.		

CS2: Explore emergent carbon sequestration approaches/technology

N/A

Carbon Reduction

$

Cost

		Timeframe	Co-benefits
01	Explore 'Blue Carbon'/Regional Aquatic Carbon Sequestration, including expansion of kelp farming in the East End.		
02	Explore pyrolysis processes with the purpose of sequestering carbon in biochar.		
03	Explore P2X processes where carbon dioxide (from carbon capture) is used for producing green fuels for applicable Town operations.		
04	Explore opportunities to promote Carbon Farming (regenerative agriculture).		
05	Pilot 'Super Sink' planting program in public spaces (include non-invasive and pollinator friendly species).	—	

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Capacity Building

Knowledge, education, and capacity building are keystones of this CAP since an understanding and appreciation of climate challenges are essential to generating civic involvement and fueling impactful climate action in Southampton.

This climate priority focuses on capacity building within the Town of Southampton, encouraging continued climate leadership within both the Town's purview and throughout the community. At the municipal-level, the Town plans to hire dedicated sustainability personnel to champion, implement, and carry forth the initiatives identified in this Plan, along with securing grant funding and exploring financial mechanisms to fund recommended climate action programs and projects.

From a community perspective, this climate priority aims to continue building awareness amongst businesses and homeowners of the economic benefits of sustainable practices and the financial resources available to help implement them. The goal is to not only to create awareness of incentives for climate action, but also to offer local design and building professionals training and capacity-building knowledge so that Southampton remains at the sustainability forefront regionally. The community members are the local experts, and the Town wants to partner with the community to tap into that local knowledge base, and work collaboratively toward the renewable energy and carbon neutral goals.

While the GHG reductions associated with this climate priority were not modeled, as they are enabling actions that support direct carbon reductions, the following strategies nonetheless play a crucial role in facilitating ongoing carbon reductions and climate action.

Objectives: Capacity Building

01

Hire at least
1 employee
to manage sustainability implementation and seek funding for implementation of CAP priorities

02

Perform reporting and disclosure on CAP implementation and 2040 carbon neutrality goal by maintaining a
reporting
platform to track emissions, which will be updated every other year.

03

Revisit and update the CAP based on the biennial GHG accounting every
5 years

Strategy CB1

Increase capacity of town personnel and demonstrate leadership

It is the intent of this CAP that the strategies and supporting actions be implemented and the resulting GHG emissions be measured periodically to track the Town's overall carbon reductions. Therefore, a critical component of this plan rests at the municipal level where Town personnel and leadership can carry forth these climate objectives. Hiring a Facilities Manager and at least one Sustainability Coordinator to implement sustainability projects will be paramount. Additionally, the Town will need to work with neighboring municipalities, as well as state and federal agencies, to secure funding to build the infrastructure necessary to facilitate the clean energy transition. Finally, in addition to actively reducing GHG emissions, a vulnerability assessment and climate adaptation plan should be conducted to better prepare the Town for the climate hazards associated with the changing climate.

The following actions have been identified to support this strategy:

01	Fund and implement community-wide vulnerability assessment and comprehensive climate adaptation plan.
02	Continue to secure funding from state and federal sources for climate actions recommended in this CAP.
03	Consider ways to support the Town Engineer/ Facilities Manager.
04	Consider hiring additional planning staff or creating a Sustainability Coordinator position to facilitate public engagement, outreach, community partnerships, and sustainability-related educational programs.
05	Explore partnerships with East Hampton (and neighboring towns) to achieve economies of scale for specific climate actions (e.g., renewable energy generation/storage).
06	Explore financial mechanisms to support energy efficiency and renewable energy projects (e.g., revolving energy fund).

Strategy CB2

Increase industry and community education and training

This plan cannot be successful without the participation and leadership of the community of Southampton, and while community members are well-versed in the importance of climate action, this strategy aims to empower everyone within the Town to act. Through community partnerships, professional trainings as well as business and homeowner outreach, the Town will partner with the community to implement, fund, and ultimately celebrate, Southampton's progress along the road to carbon neutrality.

The following actions have been identified to support this strategy:

01 Train building inspectors to become advocates for green building practices

02 Provide continued outreach and resources to contractors on green building practices.

03 Collaborate with homeowners on sustainability practices and resources they are already utilizing or would like to utilize in the future, including energy use, renewable energy, waste, and transportation.

04 Conduct outreach to the business community on the economic benefits of sustainable business practices.

05 Develop a sustainability education program for seasonal residents and tourists focused on clean transportation, waste management options, and minimizing energy use in buildings.

06 Provide educational signage on green features added to Town-owned facilities.

Capacity Building

CB1: Increase capacity of town personnel and demonstrate leadership

N/A
Carbon Reduction

$ $ $
Cost

		Timeframe	Co-benefits
01	Fund and implement community-wide Vulnerability Assessment and Comprehensive Climate Adaptation Plan.		
02	Continue to secure funding from state and federal sources for climate actions recommended in this Plan.		
03	Consider ways to support the Town Engineer/Facilities Manager.		
04	Create a Sustainability Coordinator position to facilitate public engagement, outreach, community partnerships, and sustainability-related educational programs.		
05	Explore partnerships with East Hampton (and neighboring towns) to achieve economies of scale for specific climate actions (i.e., renewable energy generation/storage).		
06	Explore financial mechanisms to support energy efficiency and renewable energy projects (e.g., revolving energy fund).		

CB2: Increase industry and community education and training

N/A

Carbon Reduction

Cost

		Timeframe	Co-benefits
01	Train building inspectors to become advocates for green building practices		
02	Provide continued outreach and resources to contractors on green building practices		
03	Collaborate with homeowners on sustainability practices and resources they are already utilizing or would like to utilize in the future, including energy use, renewable energy, waste, and transportation		
04	Conduct outreach to the business community on economic benefits of sustainable business practices.*		
05	Develop a sustainability education program for seasonal residents and tourists focused on clean transportation, waste management options, and minimizing energy use in buildings.*		
06	Provide educational signage on green features added to Town-owned facilities.*		

**Indicates alignment with a recommened action in the Southampton 400+ Sustainability Element.*

Looking Ahead

Track and Share Progress

To ensure the Town remains on track to achieve 100 percent renewable energy and carbon neutrality by 2040, Southampton will be monitoring GHGs and updating its GHG emissions inventory every two years. The Town will maintain a reporting platform to easily track emissions and measure climate action progress, which will be updated every other year.

Further, this plan is intended to serve as a living document, to be periodically reviewed and updated as technological innovations emerge and policies progress. As such, this CAP will be revisited every five years based on the results of the biennial carbon tracking to ensure the Town can meet is 2040 objective, while incorporating the latest innovations into the plan.

Lead by Example

While this is the first complete climate action plan the Town has developed, Southampton has a long-standing legacy of advancing climate solutions through policymaking, strategic road mapping, such as the Southampton 400+ Sustainability Element, and capital project investments.

This CAP offers a road map for the Town to make even greater strides and act more boldly to reduce carbon emissions and combat the challenges of the coming century. The Town will continue to lead the way by example by actively working to improve its own building stock and transportation fleet, while also paving the new for new policies, codes, and securing funding for townwide climate action.

Community Action and Engagement

Importantly, the Town recognizes that it cannot achieve carbon neutrality on its own. The Town will serve as a partner to the community both to reduce emissions as well as to realize a shared climate action vision of the future. By engaging residents and the business community in the formulation of this CAP and continuing to involve community members during the implementation and decision-making processes resulting from this CAP, Southampton aims to demonstrate its commitment to advancing equity, improving health and wellness, and growing economic opportunities for all who call Southampton home.

Climate Protection for All

Climate change represents an unprecedented challenge in terms of both scale and its potential impacts. Super Storm Sandy and Hurricane Ida have given the region a preview of the disruption and destruction that the changing climate can bring, and storms like these are only expected to become more intense and frequent in the coming decades if climate action is not undertaken.

However, in the face of this challenge, Southampton remain hopeful and resolved. The Town knows that now is the time to act. The solutions and strategies to reduce carbon emissions are available, economically feasible, and socially beneficial.

This Climate Action Plan provides the recommended priorities, strategies, and supporting actions that the Town will enact to make meaningful carbon reductions while preserving, and even enhancing, Southampton's unique character, heritage, and quality of life for future residents and visitors..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Appendix

References

2019 Recreational Boating Report. (2019). NYS Parks, Recreation and Historic Preservation. Retrieved September 2022 from https://parks.ny.gov/documents/recreation/boating/RecreationalBoatingReport-2019.pdf.

After the Pandemic. (n.d.) Rethink Glasgow. Retrieved September 2022 from https://rethinkglasgow.commonplace.is/comments.

Carbon Footprint Calculator. (n.d.) US Environmental Protection Agency. Retrieved September 2022, from https://www3.epa.gov/carbon-footprint-calculator/.

Clean Energy Standard (CES). (n.d.). NYSERDA. Retrieved April 24, 2022, from https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Standard.

Community Engagement Toolkit for Planning. (2017, December). State of Queensland, Department of State Development, Manufacturing, Infrastructure and Planning. Page 39 and Page 51. Retrieved September 2022 from https://dilgpprd.blob.core.windows.net/general/community-engagement-toolkit.pdf.

Delmastro, C., Bienassis, T., Goodson, T., Lane, K., Le Marois, J., Martinez-Gordon, R., & Husek, M. Buildings: Sectorial Overview (n.d.). IEA. https://www.iea.org/reports/buildings.

Eight warmest years on record witness upsurge in climate change impacts. (2022, November 6). World Meteorological Organization. Retrieved April 24, 2022, from https://public.wmo.int/en/media/press-release/eight-warmest-years-record-witness-upsurge-climate-change-impacts.

Mobile6 Emissions Factor Look Up and Calculation Pogram for Regional, Mesoscale, and CMAQ Projects – Part A. (n.d.). NYS Department of Transportation. Retrieved September 2022 from https://www.dot.ny.gov/divisions/engineering/environmental-analysis/repository/mobile6/cmaq/cmaq.html.

Equity and Engagement in Climate Response. (n.d.) Municipal Research and Services Center of Washington (MRSC). Retrieved September 2022 from https://mrsc.org/Home/ExploreTopics/Environment/Sustainability/Climate-Equity-and-Engagement.aspx.

Fast Facts on Transportation Greenhouse Gas Emissions. (2022, July 14). US Environmental Protection Agency. Retrieved April 24, 2022, from https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions.

Fong, W.K., Sotos, M., Doust, M., Schultz, S., Marques, A., Chang, D.B. Global Protocol for Community-scale Greenhouse Gas Inventories: An Accounting and Reporting standard for Cities Version 1.1. (n.d.). Chapter 8.3.2, page 92. Retrieved September 2022 from https://ghgprotocol.org/sites/default/files/standards/GPC_Full_MASTER_RW_v7.pdf.

Greenhouse Gas Emissions: Global Greenhouse Gas Emissions Data. (n.d.) US Environmental Protection Agency, Center for Corporate Climate Leadership. Retrieved September 2022 from https://www.epa.gov/ghgemissions/overview-greenhouse-gases.

Greenhouse Gas Emissions by Source; Air and Climate; Environmental Data. (n.d.) Organization for Economic Co-operation and Development. Retrieved September 2022 from http://https//stats.oecd.org/glossary/detail.asp?ID=285.

Greenhouse Gas Emissions: Greenhouse Gas Equivalencies Calculator. (n.d.). US Environmental Protection Agency, Center for Corporate Climate Leadership. Retrieved April 24, 2022, from https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Greenhouse Gas Emissions: GHG Emissions Factors Hub. (n.d.) US Environmental Protection Agency, Center for Corporate Climate Leadership. Retrieved September 2022 from https://www.epa.gov/climateleadership/ghg-emission-factors-hub.

Greenhouse Gas Emissions: Greenhouse Gas Equivalencies Calculator. (n.d.). US Environmental Protection Agency, Center for Corporate Climate Leadership. Retrieved April 24, 2022, from https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Hanson, B., Rosenbloom, J., and Duerksen, C. Green Zones. (n.d.). Sustainable Development Code. Retrieved June 14, 2023, from https://sustainablecitycode.org/brief/create-green-zones-2/#:~:text=Green%20zones%20are%20areas%20that,affordable%20housing%20and%20sustainable%20jobs.

Highway Statistics Series: Distribution of Annual Vehicle Distance Traveled: Percentage by Vehicle Type – Rural/Urban. (2019). US Department of Transportation Highway Administration, Policy and Governmental Affairs Office of Highway Policy Information. Retrieved September 2022 from https://www.fhwa.dot.gov/policyinformation/statistics/2019/vm4.cfm.

IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

Joule's Clean Energy Programs Save NY State residents an Estimated $7 Million Since July 2021. (2022, March 8). Cision PR Newswire provided by Joule Community Power. Retrieved June 14, 2023, from https://www.prnewswire.com/news-releases/joules-clean-energy-programs-save-ny-state-residents-an-estimated-7-million-since-july-2021-301497305.html.

FAA Information: Southampton, NY. (n.d.) Nav Air. Retrieved September 2022 from http://www.airnav.com/airport/87N.

Mandatory Greenhouse Gas Reporting. (2009, October 30). 74 FR 56374: Title 40, Chapter I, Subchapter C, Part 98. A Rule by the Environmental Protection Agency. Retrieved September 2022, from https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98#ap40.23.98_19.1.

NYStretch Energy Code–2020 Frequently Asked Questions. (n.d.). NYSERDA. Retrieved April 24, 2022, from https://www.hastingsgov.org/sites/g/files/vyhlif7561/f/uploads/nyserda_codes_nystretch_faqs_final_8.16.19.pdf#:~:text=A percent20stretch percent20energy percent20code percent20is,be percent20adopted percent20by percent20local percent20jurisdictions.

Petroleum & Other Liquids: Adjusted Sales of Residual Fue; Oil by End Use. (n.d.) Independent Statistics and Analysis U.s. Energy Information Administration. Retrieved September 2022 from http://www.eia.gov/dnav/pet/pet_cons_821rsda_dcu_sny_a.htm.

People Fixing the World: COP26: The Tech Helping You to Help the Planet. (2021, November 9). The BBC. Retrieved September 2022, from https://www.bbc.co.uk/sounds/play/p0b2z15j.

Population and Municipal Solid Waste Composition Calculator. (n.d.). Department of Environmental Conservation: Tools and Resources, DEC Tools for LSWMP Development. Retrieved September 2022 from https://www.dec.ny.gov/chemical/48208.html.

Solar Safety Lighting in Parks Project: An Economy and Climate Initiative. (n.d.) King County Engagement Hub. Retrieved September 2022, from https://publicinput.com/L1136.

Sustainable Neighborhoods Program. (n.d.) City of Lakewood. Retrieved September 2022 from https://www.lakewood.org/Government/Departments/Planning/Sustainability/Sustainable-Neighborhoods.

Transportation Energy Data Book: Edition 39. (2021). Oak Ridge National Laboratory. https://tedb.ornl.gov/archive/.

Unpacking New York's Big New Climate Bill: A Primer. (2019, June 20). Natural Resources Defense Council. Retrieved April 24, 2022, from https://www.nrdc.org/bio/jackson-morris/unpacking-new-yorks-big-new-climate-bill-primer-0.

USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

Wainwright, O. Tinder for cities: how tech is making urban planning more inclusive. (2017, January 24). The Guardian. Retrieved September 2022 from https://www.theguardian.com/cities/2017/jan/24/tinder-cities-technology-making-urban-planning-interactive.

Why The Building Sector? (n.d.). Architecture 2030. Retrieved April 24, 2022 from. https://architecture2030.org/why-the-building-sector/.

Zero Carbon Manchester. Have your say on the programme name and visuals. (n.d.) Retrieved September 2022 from https://zerocarbonmanchester.commonplace.is/en-GB/news/

Emissions & Generation Resource Integrated Database (eGRID). (n.d.). US Environmental Protection Agency. Retrieved September 2022 from https://www.epa.gov/egrid.

DP05 ACS Demographic and Housing Estimates, 2019: ACS 5-Year Estimates. (n.d.). United States Census Bureau: American Community Survey. Retrieved September 2022 from https://data.census.gov/table?q=Southampton+town,+Suffolk+County,+New+York&g=060XX00US3610368473&y=2019&d=ACS+5-Year+Estimates+Data+Profiles&tid=ACSDP5Y2019.DP05.


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