

Introduction

The Climate Crisis

Since the Industrial Revolution, humans have increasingly released carbon dioxide and other greenhouse gases into the atmosphere that had been stored in the Earth's crust for millions of years. This release upset the prior balance of the carbon cycle, resulting in larger atmospheric concentrations of these greenhouse gases than have existed since the Pliocene; approximately 3 million years ago. Higher greenhouse gas concentrations result in warmer global average temperatures, as more solar energy is trapped as heat near the Earth's surface. Far-reaching consequences of this overall warming include sea level rise, increased frequency of droughts, severe storms, heat waves, fires, and less predictable and more variable local weather patterns. These abiotic impacts have ripple effects in the biological world, including biodiversity loss, species movement, and disease. Impacts on humans include loss of arable land, environmental refugee movement, water scarcity, and political instability.

Local impacts of climate change and future climate scenarios have been extensively researched and collated in the document "[Maine's Climate Future, 2020 update](#)", produced by the Climate Change Institute of the University of Maine in collaboration with the Maine State Climatologist and many others. A presentation with more details on this topic can also be found on the A Climate to Thrive website, titled "[The Gulf of Maine's Climate Emergency](#)". The most prominent challenges we face locally include increasing frequency and intensity of precipitation events, while also seeing an increase in droughts and drought intensity. Our winter temperatures in particular are increasing rapidly, leading to less precipitation as snow. The temperature of the Gulf of Maine sea water is increasing more rapidly than most places on Earth, with far-reaching consequences for ocean ecosystems and increased risk of flooding and erosion due to sea level rise. Ocean acidification due to increased adsorption of CO₂ into our waters is also a concern for the ocean ecosystem and, in particular, survival of larval shellfish. Much of Maine's economy relies on traditional natural resources that are, and will continue to be affected by these changes, including fisheries, agriculture, forestry and tourism. The Maine Climate Futures document concludes with a clear statement that the future climate scenario that plays out in Maine is truly dependent on us and the actions we take today as a community.

In 2016, the US and 194 other countries signed the Paris Climate Agreement, legally committing to limiting average global warming to 2° Celsius, (3.6° Fahrenheit), above pre-industrial levels. At the time, this was believed to be the highest acceptable limit before triggering positive feedback loops in the climate that would result in runaway climate change. The purpose of coming together as an international community was to prevent the massive species extinctions, famine, and global instability that would result if climate change continued unchecked. While the goals were ambitious, few countries are currently on track to achieve their stated goals, and even if all goals were realized, global warming would still readily reach 2.8°C by 2100

(climateactiontracker.org). In addition, the Intergovernmental Panel on Climate Change (IPCC), a body of the UN that is composed of scientists from over 135 countries tasked with surveying scientific evidence on climate change, released findings in 2018 showing that 2° C is not a sufficient goal ([IPCC, 2018](https://www.ipcc.ch/2018/09/08/ipcc-working-group-i-releases-statement/)). Instead, we must limit warming to 1.5° if we are to avoid triggering the worst effects of climate change. As the international and national steps to reduce climate change are currently insufficient to meet the scientifically determined needs, it is clear that local action is also necessary in order to address climate change.

Bar Harbor's Declaration of a Climate Emergency

In November of 2019, the Town of Bar Harbor passed a [Climate Emergency Declaration](#), brought to them by the Climate Emergency Action Coalition (CEAC). The Declaration they passed acknowledged that climate change is a crisis that threatens our Town. A few months later, in January of 2020, the Town created the Climate Emergency Task Force (CETF), whose [responsibilities](#) include reducing the Town's carbon emissions.

Accomplishments to Date

To date, the Town of Bar Harbor has already initiated several projects with greenhouse gas (ghg) reduction in mind. They can be viewed [here](#). The Climate Emergency Task Force has been meeting since June 2020 and has initiated a scope 1 and 2 (scope 1: gas, oil, diesel; scope 2, electricity) greenhouse gas audit of municipal buildings and vehicles, with the intention to pursue scope 3 (materials use) in the future. The CETF has also proposed climate related goals for the Town Council to adopt, identified several topics for educational articles in the local newspaper, and hosted presentations of the Mount Desert Island High School's AP Environmental Science students on sea level rise and the local impacts of climate change (available on the [A Climate to Thrive website](#)). The CETF has contributed partial funding (\$2,000) to A Climate to Thrive (ACTT) staff to perform a feasibility study of the Higgin's Pit as a solar farm on town property. The CETF is in communication with the town's Parking Committee regarding the installation of EV charging stations. The CETF is analyzing the results of the ghg audit to identify areas in which improvements can be made within the municipality to reduce ghg emissions.

Municipal and Town-wide goals

In this document we identify strategies and action steps to mitigate GHG emissions of municipal functions: school and public works and municipal building emissions, emissions from fire trucks and police cars, utility vehicles. These are sources of emissions that the town can directly influence with directives from the Town Council or various department programs.

We also identify Town-wide strategies and action steps that could help mitigate GHG emissions within the whole town. These strategies are to educate, encourage or provide incentives to the businesses and residents in our community to reduce emissions through their own efforts.

Many of our categories have overlapping goals which we do not restate in order to avoid redundancy.

Municipal Sustainability Goals by the Town Council

As of 2020, the Town of Bar Harbor has committed to the following sustainability goals:

Town Council Strategy 2a. Address the climate change emergency with meaningful energy conservation efforts

- Develop a Climate Action Plan reducing greenhouse gas emissions to net zero by 12/31/2030. (Fall 2021)
- Include climate standards for buildings, energy use and transportation in the update of the BH Comprehensive Plan and Land Use Ordinance (LUO).
- Prepare a solar ordinance that will allow free-standing, primary use solar arrays on public and private land. (Town meeting, November 2021)
- Develop a community solar farm on the Higgins Pit lot to power all town facilities and schools and offer low-cost power for nonprofit organizations and low to moderate income households. (2022)
- Replace town vehicles with electric vehicles as vehicle life is reached and suitable vehicles are available.
- Increase electric vehicle charging stations in Bar Harbor.
- Include climate standards for buildings, energy use and transportation in the update of the BH Comprehensive Plan and LUO.

Mission & Goals of the Climate Emergency Task Force

According to the by-laws, The Task Force will:

- Educate and engage Bar Harbor residents about the climate emergency and the broader ecological crisis, as well as actions they can take to address the impacts and causes of the climate emergency.
- Explore and identify the most effective and economically beneficial opportunities for emergency-speed greenhouse gas emissions reductions across the community in the following areas:
 - Renewable energy
 - Energy efficiency
 - Housing and buildings
 - Transportation
 - Land use

- Provide significant opportunities for public input into strategic planning, project development for greenhouse gas emissions reductions, and all other investigations and work of the Task Force.
- Develop a comprehensive Bar Harbor “Climate Action Plan” addressing climate mitigation, climate adaptation, and community education.
- Identify and pursue outside funding sources to advance the work of the Task Force.
- Assist the Town Manager in hiring a consultant to support these duties and responsibilities.

Recommendations as a Task Force (Climate Action Plan)

- Goals
- Actions/Strategies
- Timeline

Bar Harbor Climate and Sustainability Action Plan 2030

Upgrading town municipal buildings and transportation will serve as an example, leading the way for residents, to show how it can be done and what it will take.

Responsibility of Task Force

Responsibility of Sustainability Coordinator

Responsibility of Town Council (may be part of Existing Sustainability Goals)

Other (such as Conservation Commission, etc)

→ [See this document for a list of tasks by responsible party](#)

Overarching Actions

Goals

1. Integrate environmental consideration and carbon emissions impacts into all municipal decision making processes by calendar year 2024, across departments and committees. Include all capital improvement purchases and include life cycle costs and emissions of town purchases.

Action Steps

- A. Modify town committee bylaws such that each committee maintains a “climate steward” role to monitor and bring up climate impacts of committee decisions and actions.

Responsibility of Town Council

- B. Hire a sustainability coordinator. **Responsibility of Task Force**

Everything below is broken into distinct categories but there are massive overlaps that need to be acknowledged

Renewable Energy

Goal: Eliminate use of fossil fuels from all municipal operations and buildings by 2030. Support renewable energy use by the entire community.

Strategies

1. Promote clean energy generation locally and throughout Maine.
2. Support the development of generation and distribution of 100% renewable electricity by 2030, available to the entire community.
3. Use 100% renewably-sourced electricity for all current municipal operations by 2022.
4. Support the conversion of all energy needs for municipal operations to 100% renewable-sourced electricity, (including those which now use fossil fuels) by 2030.

Action Steps

- A. Encourage development of a solar ordinance allowing stand alone ground mounted solar. **Responsibility of Task Force**
 - Prepare a solar ordinance that will allow free-standing, primary use solar arrays on public and private land. (Town meeting, November 2021)
- B. 10 MegaWatts (MW) installed of community solar by 2030. **Responsibility of Task Force**
- C. Purchase municipal electricity from local community energy projects. **Responsibility of Task Force**
- D. 100% of all municipal electricity use will be sourced from local solar arrays. See Fred Bever piece NPR, 2/19/21. **Responsibility of Task Force & Sustainability Coordinator**
 - Develop a community solar farm on the Higgins Pit lot to power all town facilities and schools and offer low-cost power for nonprofit organizations and low to moderate income households. (2022)
- E. Collaborate with building staff/custodians in each building in order to identify energy conservation opportunities and priorities. **Sustainability Coordinator**
 - Note: ensure that as electricity use increases, there will need to be increased infrastructure (lines, power stations etc) Increased use should be powered by renewable sources.
- F. Lobby PUC to ensure Versant's actions are in line with local and State climate goals and will work to State and local timelines. **Responsibility of Task Force & Sustainability Coordinator**
- G. Advocate for grid modernization to support renewable energy integration, demand- side management of resources and energy access equity for all Mainers. **Responsibility of Task Force & Sustainability Coordinator**

- H. Support the development of a microgrid on MDI. **Responsibility of Task Force**

Energy Efficiency

Goals

Promote energy efficiency across Bar Harbor for the municipality and residents

Strategies

Action Steps

- Support creation of a local microgrid to reduce transmission losses of electricity from distant power sources. **Responsibility of the Task Force.**
- Provide a mailer to all residents of the Efficiency Maine programs and rebates available.
- Provide links on the CTF public webpage to provide information on energy efficient construction, heating, vehicle and appliances selections
- Promote energy efficiency by offering seminars with vendors and experts to inform the public
- Promote a forum for folks to share energy efficient ideas and successes

Energy Conservation in Municipal Buildings

Goal: reduce greenhouse gas emissions from all municipal buildings

Strategies

1. Maximize energy efficiency in all Municipal buildings.
2. Source electricity from renewable options and phase out fossil fuel dependency

Action Steps

- A. Maximize Energy Efficiency in all Municipal Buildings
 - a. Identify high energy use buildings via energy audit - **Responsibility of Sustainability Coordinator/ Also Public Works Director**
 - b. **Prioritize least efficient buildings for appropriate upgrades. Responsibility of the Sustainability Coordinator.**
 - i. Complete audits for least efficient municipal buildings by 2023.
 - ii. Establish energy use monitoring capacity for municipal buildings. **Responsibility of Sustainability Coordinator. Responsibility of Task Force**
 - iii. Upgrades for least efficient buildings by 2025. **Responsibility of Sustainability Coordinator and Public Works Director**
 - iv. Consider behavior and building-use modifications in order to conserve energy. **Responsibility of Sustainability Coordinator**
 - v. Replace [municipal] fossil fuel infrastructure (heating, water heating, ac, ventilation, etc) with the most efficient, zero-emission options.

Responsibility of the Sustainability Coordinator & individual building staff.

- c. Use savings from future energy bills to fund subsequent projects. **Responsibility of the Sustainability Coordinator**.
- B. Maximize the energy efficiency of services such as sewage and water pumping.

Transportation

Goal: Reduce GHG's related to transportation [including town transportation emissions by XX% by 2030]

Strategies:

1. Expand public transit and active transportation options for locals and visitors.
2. Promote and facilitate the transition to electric transportation.
3. Educate the community and Town officials/workers on the benefits of electric and hybrid vehicles.
4. Minimize the carbon footprint of the Town municipal vehicle fleet (cars, vans, trucks, police and emergency vehicles) and recommend all-electric or hybrid counterparts as available.
5. Collaborate with on-island groups [centers of employment?] to incentivize and promote sustainable travel habits for visitors and residents.
6. Develop partnerships with Acadia National Park and others to develop cooperative incentives for low or zero emissions travel.
7. Investigate transportation sources of GHG emissions from top producers so as to focus mitigation efforts where it'll make the most difference.
8. Increase electric vehicle charging stations in Bar Harbor (and identify where they are for easy access)

Action Steps

- A. The Town of BH will undertake a comprehensive transportation study to determine top sources of GHG emissions in the [town's] transportation sector
- B. Promote the current Idle Ordinance that puts a 5 minute limit on idling. See more in the education section. **Responsibility of the Task Force**
- C. Collaborate with ANP, JAX, COA, MDI Hospital, Hotels and Motels and other major stakeholders on the island, to develop cooperative incentives for low or zero emission travel such as EV chargers, carpooling, access to bikes/modes of sustainable transport, discounted passes, etc... **Sustainability Coordinator**
- D. Survey community: What barriers exist to taking public transportation. What barriers exist to purchasing an EV for your next vehicle. **Sustainability Coordinator**

- E. EV showcase where multiple EV's are on display for a day for people to see and test. An EV Car show. Yearly event (4th of July parade). **Task Force (perhaps with the Chamber of Commerce?)**
- F. Free electricity outlets by public bicycle racks for Ebike charging. **TF recommendation to Council**
- G. Support EV rental car service. Zipcar service. Electric Motorcycle rental? **Sustainability Coordinator**
- H. Sponsor a local website where the public can learn about EVs and incentives. **Task Force & Sustainability Coordinator**
- I. Promote free parking for EVs or dedicate a free lot for EVs. Permit required. **Task Force & Sustainability Coordinator**
- J. Replace town vehicles with low or zero GHG emitting vehicles as vehicle life is reached and suitable vehicles are on the market. Town departments with help from **Sustainability Coordinator**
- K. Increase opportunities for, and safety of, bicycling: TF recommends to Parking Committee?
- L. Increase EV charging stations town-wide by working with groups on the island with large parking areas/structures. **Task Force & Sustainability Coordinator**
- M. Investigate sources of funding for this transition that the town can take advantage of such as the \$12,000.00 Efficiency Maine incentive for Maine Governmental agencies to purchase electric vehicles are available. **Task Force**

Education

Goal: Develop a strategic, educational program to share with all residents of the Town of Bar Harbor that clearly explains goals, objectives, and timelines of the Climate Action plan.

Action Steps

1. Provide assistance, guidance, and materials to improve the Town Council's understanding of the issues related to, and the effects of, climate change to improve the Council's "climate literacy" in preparation for adopting the proposed Climate Action Plan. (2021)
2. Create a user friendly Climate Emergency link on the Town website to collect, organize, and disseminate information related to work of the Climate Task Force and the sustainability coordinator. Make sure the site is interactive and easily updated to include information on climate related presentations or forums, and

other activities like workshops that address building, energy, or other sustainability issues.

3. Make use of local newspapers, social media, radio, and television to educate the general public on climate change issues and to track progress of the sustainability coordinator and the CETF.

4) Develop or collect Public Service Announcements to offer residents personal instruction on issues related to climate change: i.e. what is an energy audit, how does a heat pump work, is solar good for me, what happens if we do nothing, etc. Make this information available as a link on the new website.

5) Partner with local schools and post-secondary educational institutions, and local scientific institutions to plan, develop, and coordinate climate change educational programs, and climate action presentations directed to inform kindergarten through middle school students.

6) Promote idling ordinance

Public Outreach

Goal: To include all constituencies of the Town in the development and implementation of the activities, improvements, and policies related to the Climate Emergency Plan.

1) Organize quarterly community “Town Hall Meetings” to share the work to date on the climate action plan and any recommendations therein to receive feedback from the community during the developmental stages of the plan, rather than the finished product. These events can also be used to share plans and progress of the sustainability coordinator.

2) Engage the local public schools and other educational institutions for assistance with developing climate related data like greenhouse gas audits, building audits, waste audits etc.

3) Use real time technology to monitor and track the results of the changes made in the climate emergency effort. Choose a very public (Town Hall) place to display the information which should include as many details as possible, but done so in layman's terms.

4) Partner with local schools and other educational institutions to supplement Town staff capacity through work study positions, internships, independent studies, and volunteer efforts to help staff that have interest in climate issues, but may not have time or bandwidth to participate.

5) Encourage the Town Council to support and participate in activities that highlight and celebrate ecological issues and activities: Earth Day, Maine Recycling Week, Bike to Work Day, Arbor Day, World Population Day, etc.

Below this is the original text. There are items in this that should be included as an appendix.

Goals

1. Ensure the public is aware of steps taken by the Task Force to increase the private sector's sustainability . Coordinator
2. Solicit public input about action steps being taken by the Task Force/based on the TF's recommendations.

Action Steps

- A. Develop a strategic education program to improve Town Council's "climate literacy" in preparation for adopting a Climate Action Plan. (2021) Task Force
- B. Inform public of educational presentations, forums and talks Task force and coordinator
- C. Use newspaper, social media and radio to educate general public on climate change and progress of task force Coordinator
- D. Solicit feedback from residents on all topics Task force and coordinator
- E. Create a more user-friendly web presence to disseminate information Might just have to be task force for now but ideally coordinator
- F. Norm: engage local schools and educational establishments to assist with developing climate friendly solutions. Some tasks, like GHG audit, data acquisition etc. See this from the Portland CAP.
 - a. Foster and Encourage Student Support
 - i. Educational efforts around reducing energy consumption and changing employee behavior cannot be effective without continuous effort. While many employees have a genuine interest in supporting such efforts, their job responsibilities limit the time they have available. The Town should supplement staff capacity by partnering with local schools – high schools, colleges and universities to recruit motivated students who could fill internships, work study jobs, work for academic credit opportunities and volunteer positions. Assignments could include researching energy reduction efforts in other communities, creating and implementing educational programs for staff and assisting the CETF with their efforts.

Students would provide valuable work for the Town while getting an opportunity to learn first hand about the workings of municipal government. They could bring creativity and energy to the Town's efforts at a very low cost. **coordinator**

- b. The Town should also participate in other relevant initiatives such as the EPA's Cool Cities program, which will allow us to access additional informational and, potentially, financial resources.
 - i. The Town should actively participate in Earth Day events, Maine Recycles Week. Doing so would bring greater public attention to these events and organizations while helping us inform the greater community about our efforts. **coordinator**
- c. Conduct Public Outreach
 - i. The Town should regularly inform the public about its energy reduction and climate change efforts. It is important to engage community members in a dialogue about climate change and energy conservation efforts to ensure that they understand that they are partners in a community wide effort. To facilitate this effort, Town staff should discuss conservation efforts with members of the community whenever possible. As energy costs continue to rise, the public will be very interested to learn what measures have been taken to reduce consumption and reduce costs. **Task force and coordinator**
- d. A comprehensive Sustainable Bar Harbor website should be created that can document the Town's climate change efforts and provide community members with resources to assist with their own climate change reduction efforts. Energy conservation efforts should be transparent to the public. Information and data documenting fleet fuel consumption, electrical consumption, LP gas consumption and oil consumption from year to year should be available to the public.

Coordinator see above website mention

Norm: From the Portland CAP.

Develop an Environmental Preferable Procurement Policy

The choices the Town makes regarding the goods and services it purchases can have a major impact on the environment and offer an important opportunity to visibly demonstrate a commitment to sustainability. Ensuring that Town purchasing policies include green standards such as a mandate for recycled content, a local vendor/provider preference, reduced toxicity and a full life cycle analysis of major purchases such as heavy equipment and vehicles would model sustainable spending to Bar Harbor residents and businesses.

Many comm

unities around the country have already instituted green procurement policies and can provide the Town with valuable case studies. **coordinator**

Implementing the Climate Action Plan:

- Revisit the climate action plan every x years.
- Incorporate climate change mitigation into all aspects of town work across committees and departments.

Areas to be developed once initial Action Plan is presented and in Action

Land use

Food

Waste & Material Management

- Transition all meeting agendas and “packets” to electronic versions to reduce amount of paper used.
- Find source to receive shredded paper for recycling or reuse, rather than landfill.

Tourism

- A. Encourage Cruise Ships to stay longer. Cruise ships at anchor use less power than when underway. **Task Force** recommendation to Council.
- B. Recommend that any shore power for visiting/commercial vessels be fed from a Green power source or purchased from a green source. **Task Force** researches, **SC works** with cruise ship committee. (move to Tourism?)

Questions for further discussion:

- How can we revise our language so it seems less like a requirement for residents? This was a concern brought up earlier.
- Should we include a real/gross ghg emissions goal as well? See [Laura Berry's comment](#)
- Need to discuss our recommendations for materials management further - we need to do some research to identify best practices.
- For the tourism section can we add more goals? Do we know what areas of tourism produce the most greenhouse gas emissions? Has anyone done studies to see if there is a difference in the amount of trash produced by a short term rental vs a year round residence? Do short rentals have a way for visitors to recycle?

Appendix

Net Zero Carbon Emissions

Zero Carbon Emissions

Bibliography

V. Masson-Delmotte, P. Zhai, H. O. Pörtner, et. al. (2018). Intergovernmental Panel on Climate Change. *Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*
<https://www.ipcc.ch/sr15/chapter/spm/>

Climate Action Net. (Dec. 1, 2020). *Global: Temperatures*. Climateactionnet.org

RFP or whatever it is request for consulting services

Compare with other climate action plans

Disentangle public from municipal operations - for November presentation

Task list is what we have. What does a formal action plan looking like?

Presentation of the document

Timeline to be included