



# Sustainability Plan

Town of Harpswell, Maine

As of September 15, 2022

Prepared by  
The Resiliency and Sustainability Committee

# Sustainability Plan

## Town of Harpswell, Maine

Harpswell with 216 miles of tidal coastline is acutely aware of the potential consequences of climate change on the community and on the Town of Harpswell and its public facilities. This Sustainability Plan begins to lay out a road map for the Town and the larger Harpswell community to address climate change. This Plan is intended to be a "living plan" that is regularly reviewed and updated. Climate change is an evolving science. This Plan reflects the Town's current understanding of how climate change may be able to be influenced locally and the potential impacts of climate change on Harpswell. The Plan recognizes these impacts may change over time and with better understanding of climate change. In preparing this Plan, the Town recognizes that the tools for addressing climate change will evolve and the availability of resources and funding will likely expand and become more focused. Therefore, this Plan looks at both longer-term activities that will be needed to address climate change together with short term priorities for the actions the Town should be undertaking in the next three to five years.

The plan focuses on the two broad aspects of climate change and the activities the Town government can undertake with respect to each aspect:

- One aspect of this Sustainability Plan addresses activities that the Town can undertake to reduce its "carbon footprint." This includes both reducing the total amount of energy the Town uses for municipal operations and minimizing the use of fossil fuels as the source of the energy that the Town consumes.
- The second aspect of this Sustainability Plan is to continue to plan for how the Town will mitigate the future impacts of climate change on Harpswell especially with respect to the potential for sea level rise and to begin to make those needed investments.

The Sustainability Plan consists of four sections:

1. **Section One** provides an overview of past efforts by the Town to begin to understand the potential consequences of climate change, especially sea level rise, on Harpswell

and to begin planning for those consequences. It includes a description of how the Town's efforts have become more expansive and more specific over time.

2. **Section Two** identifies the activities that the Town should undertake over time to address climate change. This is a long-range perspective on how the Town will need to plan for and implement strategies in a wide range of areas. This section is organized into eight topics that reflect the eight statewide objectives set out in the state's climate action plan, Maine Won't Wait. These activities address the two broad areas outlined above – reducing the Town's "carbon footprint" and mitigating the impacts of climate change on the Town. While this section takes a long-term perspective, it will need to be updated periodically.
3. **Section Three** identifies the Town's short-term priorities for action to begin to address climate change. These activities should be completed within the next three to five years depending on the availability of funding. Some of these activities involve planning for future investments. The priorities need to be regularly reviewed and updated as objectives are achieved and/or the implications of climate change evolve.
4. **Section Four** lays out a two-year Action Plan that identifies the specific tasks the Town needs to undertake to move forward with addressing the short-term priorities. The intention of the Action Plan is that it will be reviewed and updated periodically by the Resilience and Sustainability Committee as activities are completed and as funding sources evolve to maintain a rolling two-year action plan to guide Town decision making.

## **Section One Background**

This Sustainability Plan is the fourth generation of efforts by the Town to begin to address climate change and its potential implications for Harpswell. The following are brief overviews of those four generations and how they relate to this Plan.

In 2015 the Conservation Commission worked with the then Midcoast Economic Development District to develop a set of maps depicting the areas of potential inundation with various levels of sea level rise. This analysis identified nine town roads and seven private roads that may become inundated with one to two (1-2) feet of sea level rise. The Commission used these maps as a tool to begin to inform Town officials, potentially impacted property owners and the general public about climate change and sea level rise. This effort included two key activities:

- To better understand the implications of sea level rise on town roads, the Town undertook a preliminary engineering analysis of the Basin Point Road to investigate what improvements and their cost will be needed to maintain the usability of the road at various levels of sea level rise. This included replacing the culvert with a larger box culvert to enhance tidal flow into the adjacent pond. This project involved outreach to the residents and businesses along Basin Point Road as well as two workshops on the project.
- Recognizing that the ability of property owners on private roads subject to future inundation to access outside funding is limited without the existence of a formal road association, the Conservation Commission developed an outreach program to start to address this issue. The Commission researched the requirements for private road associations and conducted two workshops for property owners on private roads about the need for formal road associations and how to create one.

In 2019 the Town received a grant from the Island Institute to conduct a "vulnerability assessment" of the potential impacts of climate change including sea level rise. This assessment was done using the Maine Flood Resilience Checklist developed by the Southern Maine Council of Governments and recommended by the state. To oversee this project, the Select Board created the Climate Resilience Task Force made up of representatives from various Town committees and community stakeholders with support from Town staff. The assessment built on the previous work of the Conservation Commission and resulted in a long-term strategy for addressing the impacts of climate change. The recommendations in the strategy focused on the Town's primary infrastructure areas; roads, wharfs, docks, and boat launches; emergency preparedness and response. As part of this project, the Town undertook a preliminary assessment of the implication of sea level rise on the Lookout Point boat launch and identified the improvements needed to maintain the usability of the launch as sea level rise occurs.

In 2021 the Town was selected to participate in the pilot program of the Governor's Office of Planning, Innovation and the Future (GOPIF) to develop "regional" strategies to address climate change consistent with the state's recently adopted Climate Action Plan. Harpswell participated in a three-community cohort including Phippsburg and West Bath. This effort involved a more intensive evaluation of possible activities to address climate change and resulted in the three community cohort receiving a grant from GOPIF

for preliminary engineering to evaluate the impacts of sea level rise on a facility in each of the three communities and develop recommendations for improvements. Harpswell's Garrison Cove boat launch is being evaluated as part of this grant.

As a result of the GOPIF pilot program, the state launched a new initiative in late 2021 to provide funding to municipalities or groups of municipalities to address climate change consistent with the strategies of *Maine Won't Wait*. In response to this state initiative, the Harpswell Select Board created the Resilience and Sustainability Committee as a standing committee to replace the previous temporary task force. The Committee is charged with supporting the Town in reaching carbon neutrality and mitigating the effects of sea level rise on built infrastructure and natural resources, through community planning and adaptation. This Sustainability Plan was developed by the new committee. The plan expands the areas covered in the *2020 Vulnerability Assessment* to include transportation, buildings, and power generation

## **Section Two Sustainability Actions**

The state's climate action plan, *Maine Won't Wait*, identifies four broad climate action goals:

- Reduce Maine's Greenhouse Gas Emissions
- Avoid the Impacts and Costs of Inaction
- Foster Economic Opportunity and Prosperity
- Advance Equity through Maine's Climate Response

To address these goals the state climate action plan lays out strategies for eight key areas;

1. Embracing the future of transportation in Maine
2. Modernizing Maine's buildings
3. Reducing carbon emissions in Maine's energy and industrial sectors
4. Growing Maine's clean energy economy and protect our natural resources
5. Protecting Maine's environment and working lands and waters
6. Building healthy and resilient communities
7. Investing in climate-ready infrastructure
8. Engaging with Maine people and communities about climate impacts and program opportunities

This Sustainability Plan looks at what actions the Town of Harpswell can take to foster the implementation of the state strategies at the community level. Table A lays out recommended long-range community actions to address each of the eight state strategies set out in Maine Won't Wait. The recommended activities are intended to create a long-term road map for the next ten to twenty years. Accomplishing all or even many of these tasks will require a herculean effort and the commitment of significant local resources over decades. The intention of this plan is to create a step-by-step strategy that will allow the Town to "avoid the impacts and costs of inaction" by taking a long-range approach to addressing the challenges of climate change.

Section Three establishes short-term priorities for action. These are the activities that should be completed within the next three to five years to begin to accomplish the long-term plan.

## **Harpswell Sustainability Plan – Table A**

### **Community Actions Listings**

As of September 6, 2022

#### **Strategy Area A: Embrace the Future of Transportation**

##### **A1 Improve the infrastructure for and use of electric vehicles**

- Install Level II or higher EV charging stations at the Town office as needed for use in charging municipal vehicles and vehicles of members of the public when doing business at the Town office or using the Cliff Trail or other facilities. Plan to install additional units throughout town.
- Transition to the use of electric vehicles for municipal use including the Sheriff's Department when that is viable.

**A2 Implement strategies that increase alternative transportation modes, including bike and walking infrastructure.**

**A3 Implement strategies that encourage municipal employees to commute via carpools, bike/walk, or other alternatives to single-occupancy vehicles.**

A4 Expand the ability of the public to do Town business remotely including the increased use of ZOOM type meetings for routine business and the increased use of online services such as building permit applications, planning board applications, etc.

A5 Adopt a broadband plan that reduces the need to drive by increasing access to high-speed internet for underserved residents to support telecommuting, access to remote education and telehealth.

- Reduce the carbon emissions of Town residents and visitors by improving cell phone and broadband service. Undertake a town-wide analysis of current cell phone coverage and the availability of high speed (200mbps up/200mpbs down) internet service and develop a plan for a public/private partnership to address identified deficiencies.
- Promote the availability of programs that subsidize the ability of low- and moderate-income households to have high speed Internet service.
- Develop a program and funding source to implement the improvements identified in the Plan. (Keep in mind funds the Town now receives as part of the Internet Subsidy Program through Comcast, and try to include subsidy when considering broadband service).

### **Strategy Area B: Modernize Maine's Buildings**

B1 Adopt and execute a plan for energy efficiency and building envelope weatherization improvements for the Town Office.

- Develop a comprehensive strategy for updating the energy efficiency of the Town office by undertaking a Level II Commercial Energy Audit of the building and developing a comprehensive program to enhance the building envelope and entrances implementing the high priority recommendation from the program.
- Replace the existing interior lighting with LED fixtures to both reduce energy use and lighting levels where appropriate.
- Finalize the design/approach for replacing/upgrading the HVAC system with heat pumps when three-phase power becomes available.
- Implement the upgrade of the HVAC improvements and train Town staff in the operation and maintenance of the HVAC system.

B2 Collaborate with the local school district for school building improvements at the Community Elementary School.

B3 Develop a comprehensive strategy for updating the energy efficiency of other Town buildings and facilities including the recycling weigh station and the emergency services building

B4 Work with the Cundy's Harbor and Orrs Island Libraries to explore the potential for increasing the energy efficiency of their buildings.

B5 Work with the Cundy's Harbor, Orrs-Bailey Island, and Harpswell Neck Fire Departments to explore the potential for increasing the energy efficiency of their buildings.

B6 Upgrade streetlights and exterior lighting for municipally/tribally-owned facilities with energy efficient LED lighting (and minimize light pollution with downlighting where possible).

- Conversion of the streetlights is in process with secured funding, to upgrade town street lighting to LED

### **Strategy Area C: Reduce Emissions through Clean Energy Innovation**

C1 Enter into a long-term service contract or power purchase agreement (PPA) or adopt a clean power purchase policy to ensure increasing local government energy supplies come from renewable energy.

- Continue to subscribe to a community solar project for the majority of the Town's electricity needs until the Town develops its own solar capacity (if feasible).

C2 Install a renewable energy project (solar, wind, geothermal, anaerobic digestion, etc.) on municipal/tribal property (e.g. school rooftop, wellhead protection area, landfill, brownfield site, etc. (on land).

- Undertake a feasibility study to assess if the former landfill sites behind the recycling center are suitable for use as a community solar array.
- If the recycling center site is feasible for solar development, develop and implement a project to construct a solar array on that site.
- Explore the feasibility of installing small-scale rooftop or freestanding solar arrays in conjunction with other public buildings and facilities.

### **Strategy Area D: Grow Jobs and Protect Natural Resource Industries**



D1 Adopt policies that enable, support, or incentivize local food production and consumption, including community gardens.

- Include the ability to fish and harvest seafood commercially as part of the above policy.
- Support programs to increase access for commercial seafood harvesters to the ocean.

D2 Establish incentives for clean energy industry or businesses to locate in the community.

- Incentivize clean energy carbon sequestration of growing kelp, for example.

### **Strategy Area E: Protect the Environment & Promote Natural Climate Solutions**

E1 Develop a natural resource and habitat inventory that includes climate stressors and impacts.

- Begin to assess how ocean acidification will affect shellfish species.

E2 Preserve climate-threatened natural areas such as wetlands, riparian areas, and headwater streams through zoning or other regulations.

- Assess what intertidal areas will gain and lose acreage.

E3 Implement a source/ground water protection program.

- Begin an educational program in 2022.
- Include as part of comprehensive plan update.

### **Strategy Area F: Build Healthy & Resilient Communities**

F1 Conducted a community vulnerability assessment that identified climate risks and vulnerable populations and included a review of existing plans and policies.

- Adopted a climate resilience plan that describes high priority strategies for reducing risk and vulnerabilities (may be a standalone plan or included in a comprehensive plan).
- Integrate vulnerabilities to rising tides and storm surge mitigation into the Emergency Operations Plan.

F2 Update the local and/or county EMA hazard mitigation plan to address changing/future conditions and identify specific strategies to reduce vulnerability and increase resilience to climate change impacts.

- Build on the community's assessment of Harpswell's seniors by assessing the needs of its community of workers to determine vulnerable residents who may be in need of emergency services during severe weather events.
- Using The Nature Conservancy (TNC) coastal resilience assessing tool or other appropriate tool; determine the social and economic needs of the working community.

F3 Develop or enhance early warning systems and community evacuation plans.

- Advertise and promote CodeRED, Maine's emergency alert system, and encourage people to sign up at the bottom of Town homepage.

F4 Completed the Maine Flood Resilience Checklist in 2020.

F5 Participate in the National Flood Insurance Program (NFIP).

F6 Adopt freeboard<sup>11</sup> requirements in the special flood hazard area and higher freeboard requirements for critical infrastructure and long-lifespan assets.

F7 Adopt a low-impact design (LID) standard for stormwater management.

### **Strategy Area G: Invest in Climate-Ready Infrastructure**

G1 Conduct a vulnerability assessment for critical community infrastructure that includes: 1) the climate hazards to which infrastructure assets are exposed and how the intensity and likelihood will change over time; 2) the susceptibility to damage or failure given location, design, age, condition, and state of repair; and 3) the consequences that impairment or failure of the infrastructure will have on the community.

- Town Landings: Continue to evaluate the impact of sea level rise on Town landings and boat launches. Prepare a prioritization chart for Town landings that will be affected with 1-3 feet of SEA LEVEL RISE. Use chart to further analyze. Lookout Point and Garrison Cove Landing.

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<sup>1</sup> Freeboard: FEMA An additional amount of height above the Base Flood Elevation (e.g., 2 feet above the Base Flood) in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with state or community floodplain management regulations.

Town Roads: Continue to evaluate the impact of sea level rise on Town roads. Prepare a prioritization chart for town roads that will be affected with 1-3 feet of SEA LEVEL RISE. Using chart choose 2-3 roads for study to determine plan and costs to upgrade.

- Using the new Maine Coastal Flood Risk Model (ME-CFRM) (RPF 2022), develop a "climate change risk assessment" map that takes the updated flood hazard map developed by Ransom Engineering for the Town and add 2-3 feet of sea level rise to it. Note: P. Slovinsky, Maine Geological Survey is applying for funding to model storm surge into sea level rise modeling based on flooding at State level.
- Using the map developed by Ransom Engineering, do a land use analysis to identify where 1- 3 feet of sea level rise could impact developed and undeveloped land and assess if changes in regulations are needed.
- Using data determined in the above study, revisit the 2011 Bowdoin study and the Casco Bay Estuary Partnership's 2013 marsh migration analysis based on existing risk assessment map and reports to determine if expanded or new Resource Protected Districts should be considered.

G2 Develop a Capital Investment Plan that a) identifies vulnerable municipal/tribal facilities and assets, and b) prioritizes resilience in improvements and/or new construction.

G3 Research ways to assess vulnerability of public and private wells to ground water supply and saltwater intrusion.

G4 Adopt DEP's Stream Smart Crossing Guidelines as standard practice for culvert and bridge improvements. Identify vulnerable crossings and apply for DEP improvement funds.

- Culverts/stream crossings: Determine the feasibility of addressing two – three ( 2-3) feet of sea level rise when replacing culverts.
- Private Roads: Disseminate information to private road owners, regarding mitigation, maintenance, and funding opportunities related to sea level rise.

### **Strategy Area H: Engage Maine People**

H1 The Town of Harpswell established the 2018 Climate Resilience Task Force, 2020 Climate Resilience Implementation Task Force, and 2022 Resiliency and Sustainability Committee, comprised of community and business members as the official committee of community stakeholders. Members of the community were invited to all meetings and their comments were taken.

H2 Develop and implement a comprehensive community information program on the implications of climate change and the activities that need to be undertaken to prepare for a changing climate. Use local libraries and the Harpswell Anchor in addition to Town online resources as depositories of documentation and programming relating to climate resilience.

H3 As the Town undertakes activities to reduce its “carbon footprint” it will make its citizens aware of what it is doing, how much energy is being saved, and where the funds to address the project came from.

H4 The Town will develop a clearing house that will provide citizens and businesses access to information about renewable energy sources and actions that can be taken to reduce their “carbon footprint”.

- Included in the materials will be the disclaimer: The Town makes no claims as to the accuracy or currency of information. Its purpose is to be informational for people in Harpswell.

### **Section Three Short-Term Priorities for Action**

An ancient Chinese proverb says that “a journey of a thousand miles begins with a single step.” Addressing climate change in Harpswell will require a similar attitude. The task before the Town and the larger community will be daunting but by starting now and working through the activities outlined in Section Two systematically step-by-step, year-by-year, the Town will persevere. This section lays out a “work plan” for the activities that should be undertaken and accomplished within the next three to five years. Some of these activities are one-time events. Some are the initial steps in longer term efforts. Some are the groundwork for future possible activities. The priorities set out in this section represent the current thinking of the Town as to the best course of action. As the management of climate change evolves, these priorities may need to be adjusted. In addition, implementation of these actions will require funding either through outside sources such as grants or from the appropriation of local tax dollars. Therefore, the order and timing of the individual activities should be viewed as a guide that may need to be

adjusted as the Town moves forward and the availability of resources and funding changes.

- **Highest Priority Activities** – The following activities are the highest priority, however these activities consist of a series of activities that will need to be prioritized as part of the Two-Year Action Plan (see Section Four):
  - a. Reduce the “carbon footprint” of the Town office building – This project involves three separate, but interrelated activities as follows:
    - i. Replace the existing fluorescent lights throughout the building with LED fixtures to reduce electric usage and improve lighting quality in the building.
    - ii. Evaluate the need for improvements to the building envelope to reduce heating and cooling loads through a Level II Commercial Energy Audit and carry out the recommended improvements.
    - iii. Upgrade/replace the current HVAC systems with air-to-air heat pumps to eliminate the existing oil fired system.
  - b. Identify the need for future improvements to Town roads – This project involves evaluating the impact of sea level rise and related storm surge activity on the town roads that will be potentially inundated as a result of 1.5 to 3.9 feet of sea level rise and the increasing severity of storms. It includes the following steps in the short-term:
    - i. Re-evaluate the priorities for improvement among the town roads subject to future inundation and select the two roads with the highest priority.
    - ii. Evaluate the potential impact of sea level rise on the two selected roads and develop preliminary engineering designs and cost estimates for the improvement needed to accommodate 1.5 feet and 3.9 feet of sea level rise.
    - iii. Include the need for improvements to address climate change in any future capital improvement projects involving these roads.
- **Second Priority Activities** - The following activities are the next highest priority for Town action. Some of these activities are included as part of the Two-Year Action Plan (see Section Four):
  - a. Develop and implement a comprehensive community information program about climate change – This project should be an ongoing program to discuss the potential impacts of climate change on Harpswell and the Town, the need

- to begin to take action to reduce the “carbon footprint” of the Town, the activities underway to begin to deal with climate change including this Sustainability Plan and enhanced emergency preparedness including programs like CodeRED.
- b. Evaluate the potential for a Town-owned solar facility – This project involves hiring a consultant to assist the Town in evaluating the potential for developing a solar array to supply electricity to meet the Town’s power needs. This should include assessing the suitability of the area behind the Recycling Center in the vicinity of the former landfill.
- **Third Priority Activities** – The following activities, while a priority for Town action in the three-to-five-year timeframe, should only be undertaken in the next two years covered by the Action Plan on an opportunistic basis if funding for them from an outside source becomes available:
    - a. Identify the need for future improvements to Town landings and launches – This project involves evaluating the impact of sea level rise and related storm surge activity on the Town landings and boat launches that will be potentially inundated as a result of 1.5 - 3.9 feet of sea level rise and the increasing severity of storms. It includes the following steps in the short-term:
      - b. Identify priorities for improvement among the various town facilities subject to future inundation and select the one with the highest priority
      - c. Evaluate the potential impact of sea level rise on the selected facility and develop preliminary engineering designs and cost estimates for the improvement needed to accommodate 1.5 feet and 3.9 feet of sea level rise.
  - Provide municipal infrastructure for E-vehicle charging – This project involves beginning to develop Level II or faster charging stations at Town facilities or in conjunction with private businesses as the demand for such facilities increases. The Town should evaluate the feasibility of installing a charging station at the Town Office that can serve municipal e-vehicles, Town employees, people using the Town office and visitors.

## **Section Four Rolling Action Plan for the Highest Priority Activities**

This section lays out a two-year Action Plan that identifies the specific tasks the Town needs to undertake to move forward with addressing the short-term priorities. This

Action Plan is intended to be a flexible guide or “living document” that should be adjusted regularly to reflect new technologies or funding sources or revisions to the impacts of climate change on the community. The intention of the Action Plan is that it will be reviewed and updated at least every 18-24 months by the Resiliency and Sustainability Committee as activities are completed and as funding sources and technology evolve to maintain a rolling two-year action plan to guide Town decision making. The Committee should regularly seek out innovative ways to address climate change. The following actions are listed in the tentative chronological order in which they are proposed to be undertaken and reflect current funding opportunities through GOPIF. However, this order should be viewed as flexible to adjust to available funding opportunities or new information:

- Apply for funding from GOPIF and/or Efficiency Maine rebates to replace the existing fluorescent lighting throughout the Town office and carryout the project to reduce the energy use of the building (2022-23 – GOPIF September 2022).
- Undertake a Level II Commercial Energy Audit of the building envelope of the Town office to identify needed improvements to increase the energy efficiency of the structure. The Town should fund this with Town funds or include the cost in the lighting upgrade project (2022-23 – GOPIF September 2022 or Town funds).
- Re-evaluate the priority for assessing the need for improvement of Town roads subject to future inundation and identify the highest priority roads for analysis (2022).
- Develop Phase One of the public information program relative to climate change and the need for the Town to begin to plan for its impacts (2022-23).
- Apply for reimbursement eligibility from Efficiency Maine for the upgrading/replacement of the HVAC system at the Town office with heat pumps and move forward with the project as soon as three-phase power becomes available using available reserve funding (2022-24).
- Apply for funding from GOPIF to evaluate the potential impact of sea level rise on the highest priority roads and develop preliminary engineering designs and cost estimates for the improvement needed to accommodate 1.5 feet and 3.9 feet of sea level rise (2023 - GOPIF March 2023).

- Seek funding for the improvements to the building envelope identified by the commercial energy audit and make the improvements when funding is secured (2023).
- Apply for funding from GOPIF to evaluate the potential for developing a solar array to supply electricity to meet the Town's power needs. This should include assessing the suitability of the area behind the Recycling Center in the vicinity of the former landfill for an array (2023-24 – GOPIF September 2023).
- Develop an ongoing public information program relative to climate change and the activities being undertaken by the Town (2023-24).