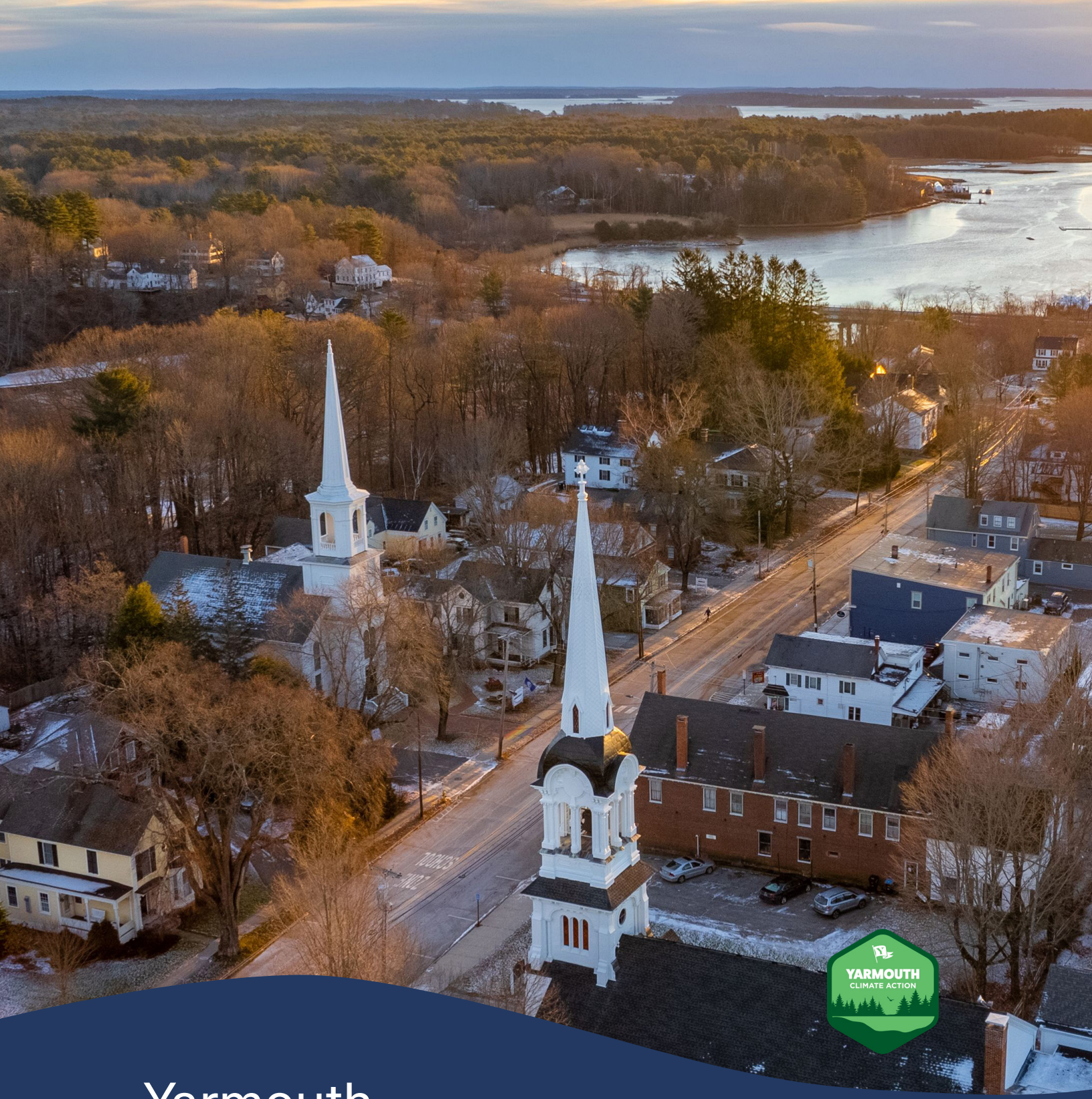

Yarmouth
Climate Action Plan

March 2024

YARMOUTH
MAINE

Table of Contents

Acknowledgments

Town leadership, staff, and the wider Yarmouth community have a longstanding shared commitment to addressing the climate crisis. Residents, businesses, and town staff have been taking thoughtful steps to steward the environment, reduce greenhouse gas emissions, and strengthen our community's capacity to adapt to climate hazards—all of which has led to a collective culture of climate action in our town.

We would like to thank Town leadership for supporting this Climate Action planning process, and Town staff and community volunteers for the dedication, collaboration, and knowledge they brought to this important effort. We also extend our gratitude to the community members and stakeholders that participated in the process along the way. Your valuable input helped ensure this plan reflects the priorities and values of our community.

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Erin Zwirko, Planning Director

Town Boards and Committees
Affordable Housing Committee
Bicycle and Pedestrian Committee
Committee for Energy Efficiency and Sustainability
Comprehensive Plan Steering Committee
Economic Development Advisory Board
Historic Preservation Committee
Parks and Lands Committee
Planning Board
Recycling Committee
Tree Advisory Committee

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Michelle Cromarty, Vice Chair
Heather Abbott
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Consultant Team
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Kelly Rehberg, GPCOG Sustainability Program Manager

GPCOG
GREATER PORTLAND COUNCIL OF GOVERNMENTS

The members of the Yarmouth Climate Action Task Force (YCAT) respectfully acknowledge that the places in which we reside and the land and water addressed in this Climate Action Plan are the traditional territory of the Abenaki and Wabanaki Peoples. The region where we are living, known to the original Indigenous stewards as Westcustago, has been—and continues to be—their ancestral homeland. We recognize the historical and ongoing impacts of colonization and we now strive to build community connections marked by compassion and mutual respect.

With deep admiration and gratitude for the Indigenous community past and present and for Indigenous models of reverent stewardship for the natural world, we strive in this Plan to nurture the natural environment that sustains us all and of which all living things are a part. We hope this acknowledgment provides context for our Plan and is a small step towards fostering a more inclusive and equitable future for those who call this place home.

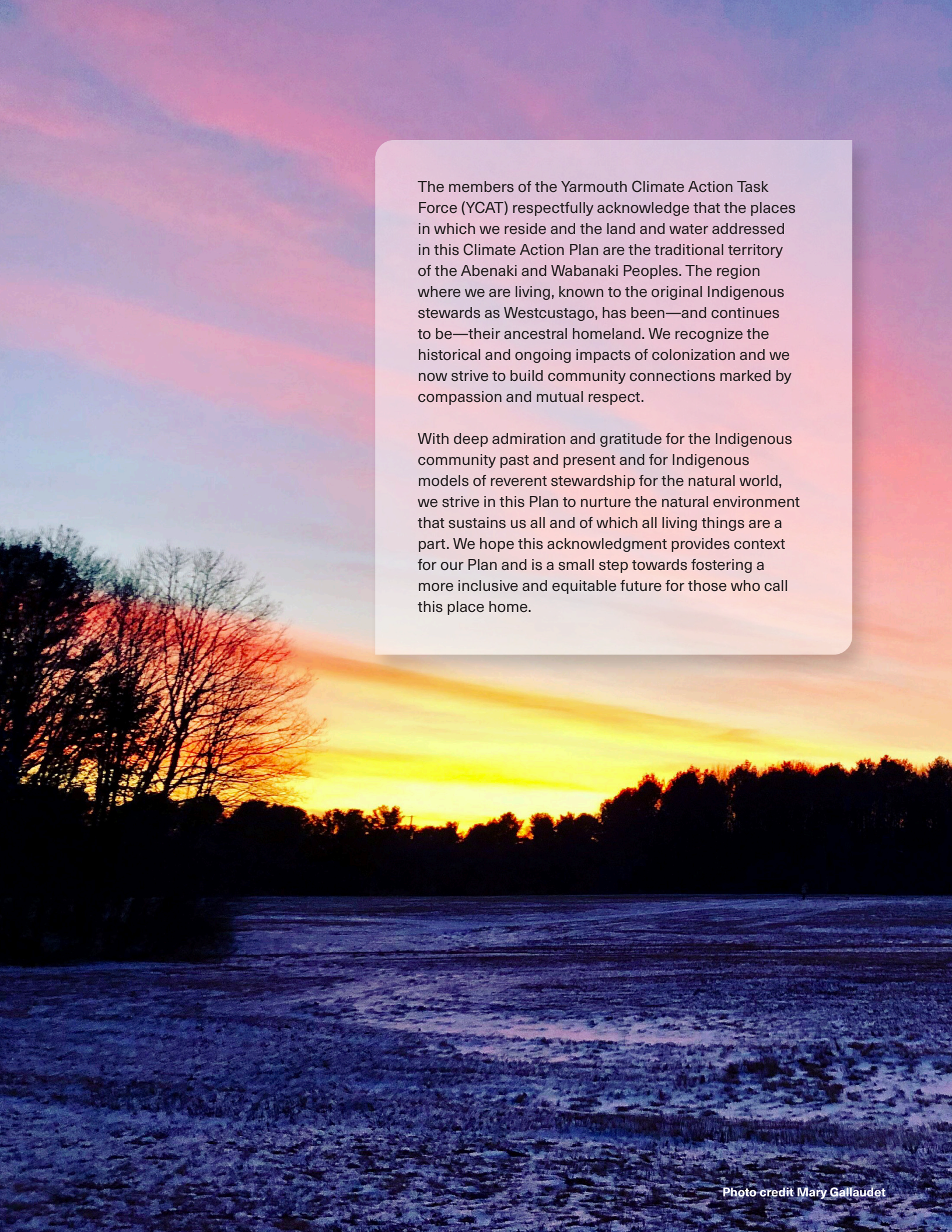


Photo credit Mary Gallaudet

NAVIGATING THE PLAN

- **SEE THE HIGHLIGHTS**

  Read the executive summary to get an overall view of the plan. Alternatively, a summary of key facts and concepts can be found at the start of each focus area chapter.

- **BECOME PART OF THE SOLUTION**

  Each chapter contains concrete suggestions and further resources for readers who wish to take action.

- **DIVE INTO ONE TOPIC**

  Within this document, you can skip ahead to whichever topic is of most interest to you. Each chapter contains information about the relevant impacts of climate change and goals and suggested actions.

- **DISCOVER HOW THE PLAN WAS CREATED**

  Read the Developing the Plan section to learn about the people and processes involved in creating this document.

- **DIVE INTO THE DETAILS**

  This report is followed by an Implementation Table, which details the actions we will follow to reach our goals, as well as Implementation Blueprints to help guide initial steps. Data which helped shape our baseline knowledge can be found in the Greenhouse Gas Inventory and Vulnerability Assessment.

Photo credit Mary Gallaudet

In order to ensure that the community's values and critical assets are sustained for future generations, Yarmouth must strengthen itself in the face of growing threats related to climate change. The climate crisis presents an opportunity for individuals, businesses, and community leadership to shape our collective future. Local governments can lead the way in addressing the impacts of climate change such as rising seas, severe storms, and intensifying public health hazards. Municipalities are uniquely positioned to empower residents and businesses to reduce emissions, while adapting policies and services to prepare the community for a healthy future.

If we choose not to make critical investments in climate solutions, the social, capital, and environmental costs will be extensive. Both the federal government and the state of Maine are guiding and incentivizing municipalities to play a role in achieving state-wide and national climate goals. We created this plan through a collaborative public process based on data and climate solutions available today, in order to meet bold targets set for 2030 and 2050. The Plan is intended to evolve as a framework for our community to take strategic actions, while pursuing a resilient tomorrow.

Now is the time to act, and Yarmouth is charting a course.

CONNECTED EFFORTS

Over the course of 2023, the Town was developing two related, but distinct plans: the Comprehensive Plan Update and the Climate Action Plan. Working in harmony, these two plans will guide the actions we take in many different parts of our community, from ensuring the strength of our economy to protecting our natural resources for future generations.

PLAN → YARMOUTH

"While mitigating the causes of climate change and better preparing Maine for its impacts will require significant public and private investment, inaction will cost Maine substantially more, and those costs will accelerate over time."

Maine Won't Wait,
State Climate Action Plan (2020)

Bold Targets

In 2022, following a groundswell of rigorous and inspiring advocacy by local youth activists, Yarmouth Town Council endorsed a Climate Emergency Resolution. The Resolution established bold targets to reduce emissions and prepare for climate impacts while requiring a plan to guide progress. The Yarmouth Climate Action Task Force presents this Plan, based on community engagement and technical analysis, as an actionable roadmap to reduce our contribution to climate change and lay the foundation for a healthy and sustainable future.

The Climate Resolution set bold commitments for reducing emissions from municipal and school operations and from the broader community. While emissions from municipal operations are a small percentage of our total community impact, the net zero by 2030 target for town and school operations accelerates actions that are in the Town's direct control and are important to lead the community forward. This Climate Action Plan lays out the first steps toward reaching these targets.

"Be it further resolved, that the Town of Yarmouth, commits to take prompt actions, while recognizing that significant commitment, including regulatory, fiscal and time, is needed to slow and eventually halt the local contribution to global climate change and the associated negative ecological, economic, social, and public health crises."

Climate Emergency Resolution, February (2022)

The Climate Resolution also highlights the need for sustained and meaningful community engagement and accelerating local adaptation and resilience strategies. As this Plan is implemented, the Town will strive to bring in many voices to develop solutions that keep us safe, protect our environment, advance affordability and accessibility, and reduce emissions.

KEY TERMS

Net Zero refers to cutting our total greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere through natural processes[1]. In Yarmouth's Climate Resolution, the intention is to prioritize the elimination of greenhouse gas emissions through a variety of direct interventions rather than relying on market-based carbon offsets.

Resilience refers to the capacity of communities, systems, or individuals to adapt and recover swiftly from stressful circumstances or disasters. Being 'resilient' requires **adaptation** which is the process of adjusting to, or preparing for, the changing climate and its impacts.

Photo credit Molly Haley

CLIMATE CHANGE IN YARMOUTH

Greenhouse gasses (GHGs) create the conditions for life on earth by trapping heat in the atmosphere and regulating Earth's temperature. However, since the 1800s, human activities (such as cutting down forests and burning coal, oil, and gas) have increased the amount of GHGs in the atmosphere, trapping excess energy and disrupting the Earth's climate[2]. This changing climate brings a range of hazards throughout the world such as extreme heat, intense storms, and rising sea levels.

TOP FOUR CLIMATE HAZARDS FOR YARMOUTH

- Heat Waves
- Intensifying Storms
- Sea Level Rise
- Changing Ocean Conditions

Water levels in Casco Bay have risen by 7.5 inches since 1912.[7] Maine will likely experience at least a **1-foot rise in sea levels by 2050** and three feet of sea level rise by 2100.[8]

We are experiencing more precipitation—but it's coming in **shorter, more extreme events**.[3]

The Gulf of Maine warmed **faster than 99% of the global oceans**, and Casco Bay water temperature has increased 2.5°F (1.4°C) in the last decade.[9]

Continued warming will **impact the ranges of plant and animal species** in our region; with health and economic impacts expected due to tick and mosquito borne disease and changes in fisheries.[10]

Yarmouth can expect **20 to 30 more high heat days each year** by 2050.[6]

By 2050 we could see a **50% decrease** in snowpack[4] and the winter season will shrink by one to two weeks.[5]

The future depends on our actions today.

Today's efforts to avoid the worst impacts of climate disruption will result in a brighter future for all members of the Yarmouth community. By taking immediate action to lower emissions that contribute to climate change and preparing our community for changes to come, we can help protect our future.

Climate Change Impacts Us Now

Yarmouth is already experiencing the negative impacts of climate change, and they will intensify in the coming years. Across New England, summers are hotter, winters are warmer, and rain events are less frequent but more intense. Our community is facing more severe weather conditions than before, marked by increased flooding and more intense storms which often damage our infrastructure, including roads and bridges. Hotter temperatures pose human health risks. A warming and acidifying ocean is disrupting the health of our ocean species and impacting our marine economy.

The burden of climate change will not be felt equally across our community. People with existing social vulnerabilities, such as senior citizens, families living with disabilities, or cost-burdened households, will be disproportionately impacted by climate hazards and climate-related health risks.

As part of this effort, Yarmouth conducted a Vulnerability Assessment to identify the people, places, and systems in our community that will be most impacted by climate hazards.

The following conditions related to social vulnerability stood out from this assessment:

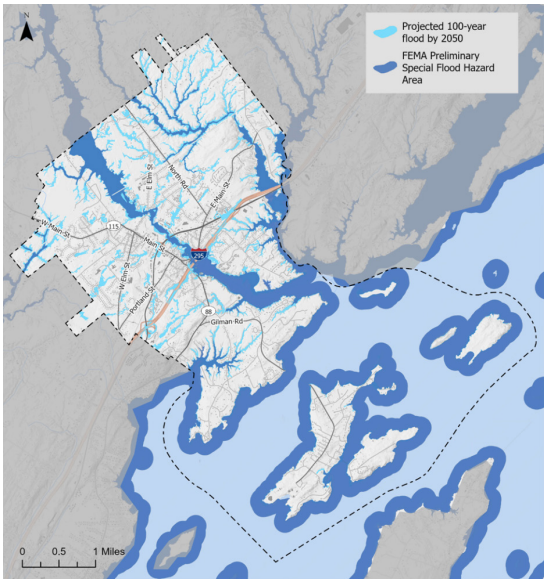
- 38% of residents are cost burdened
- High percent of older building stock
- 25% of residents over 65 are living alone

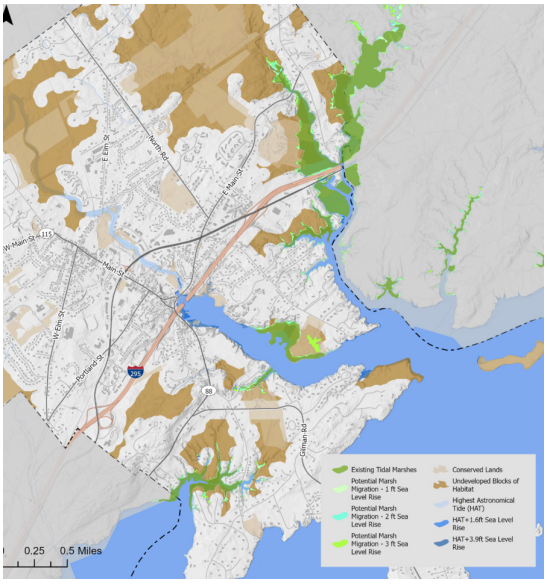
KEY TERMS

Social vulnerability refers to factors that may impact a community or individual's ability to adapt to or recover from a disaster. Factors like age, financial stability, social networks, and access to resources could make it more difficult to be resilient.

Photo credit Meddy Smith

FUTURE IMPACTS





See more data in the Vulnerability Assessment in the Appendix.

Downtown

Infrastructure: Key roads, including Route 1 and Main Street, will be flooded during storm events by 2050. This area contains the highest concentration of buildings and infrastructure vulnerable to flooding during a storm event.

Community: The downtown area contains a high number of community resources and a higher degree of the population with existing social vulnerabilities. Flooding of surrounding roads during storm events could limit access.

Natural Environment: The Royal River provides a critical habitat for fish species. Warming temperatures threaten to lower dissolved oxygen levels and put stress on aquatic species.

Maintaining access to critical infrastructure and community services during storms.

Flooding of key roadways, such as Route 1 and Littlejohn Causeway, will limit access to vital resources. The Town should ensure that key travel roads are designed to withstand increased precipitation and that culverts and drainage are maintained and upgraded if necessary.

Ecosystem Conservation

Many of the town's natural resources are at risk due to climate change, such as tidal marshes and native species. Conserving land and protecting natural systems will help Yarmouth adapt to a changing climate.

Challenges to Public Health

Yarmouth has a significant population who are vulnerable to climate change such as elderly and young residents, and households who are cost burdened. Increasing services to help those impacted is a priority for reducing vulnerability to climate change.

Cousins Island and Littlejohn Island

Infrastructure: The causeway to Littlejohn Island and the wharf for the ferry to Chebeague Island are vulnerable to flooding.

Natural Environment These islands contain several parks that are at risk. The surrounding waters contain habitat for several key marine species that provide economic and recreational value.

There are several priority actions Yarmouth can take to prepare for climate hazards:

- Maintaining access to critical infrastructure and community services during storms
- Expanding health services for vulnerable populations, especially for extreme heat
- Conserving land and protecting natural systems
- Preparing our coastal infrastructure, open spaces, businesses, and neighborhoods for the impacts of sea level rise

HOW WE ARE CONTRIBUTING TO CLIMATE CHANGE

When residents, visitors, and workers engage in daily activities such as driving to work or school and heating our homes and business, we typically burn fossil fuels that add to the already high levels of GHGs in the atmosphere. The faster we reduce our emissions, the better chance we have at slowing the pace of climate change.

For this Plan, the Town conducted an inventory of greenhouse gas emissions for 2019. This inventory data estimates emissions in Yarmouth and helps identify our biggest opportunities to reduce emissions.

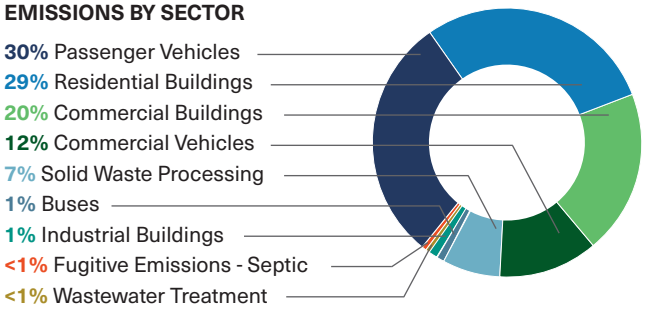
EMISSIONS BY SECTOR

In Yarmouth, the majority of emissions (50%) come from the use of electricity and heating fuels for residential and commercial buildings. Transportation is the second-largest source of emissions (43%).

Our window for action is closing according to the top 2,000 climate scientists in the world[11]. The most recent UN Climate Summit agreement signed by nearly 200 countries calls on parties to transition "away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero in keeping with the science" by 2050. It includes a new specific target to triple renewable energy generation and double energy efficiency by 2030.[12]

COMMUNITY-WIDE EMISSIONS

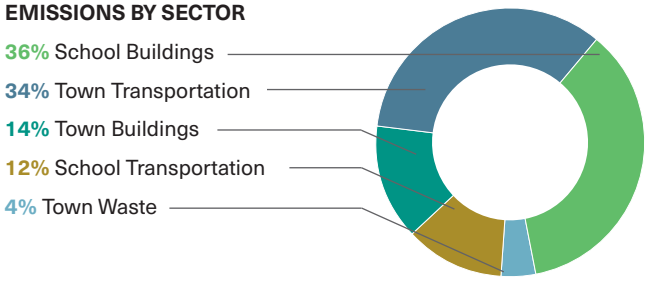
EMISSIONS BY SECTOR



99,828 $MTCO_2e$
of greenhouse gasses emitted in 2019

MUNICIPAL AND SCHOOL EMISSIONS

EMISSIONS BY SECTOR



2,414 $MTCO_2e$
of greenhouse gasses emitted in 2019

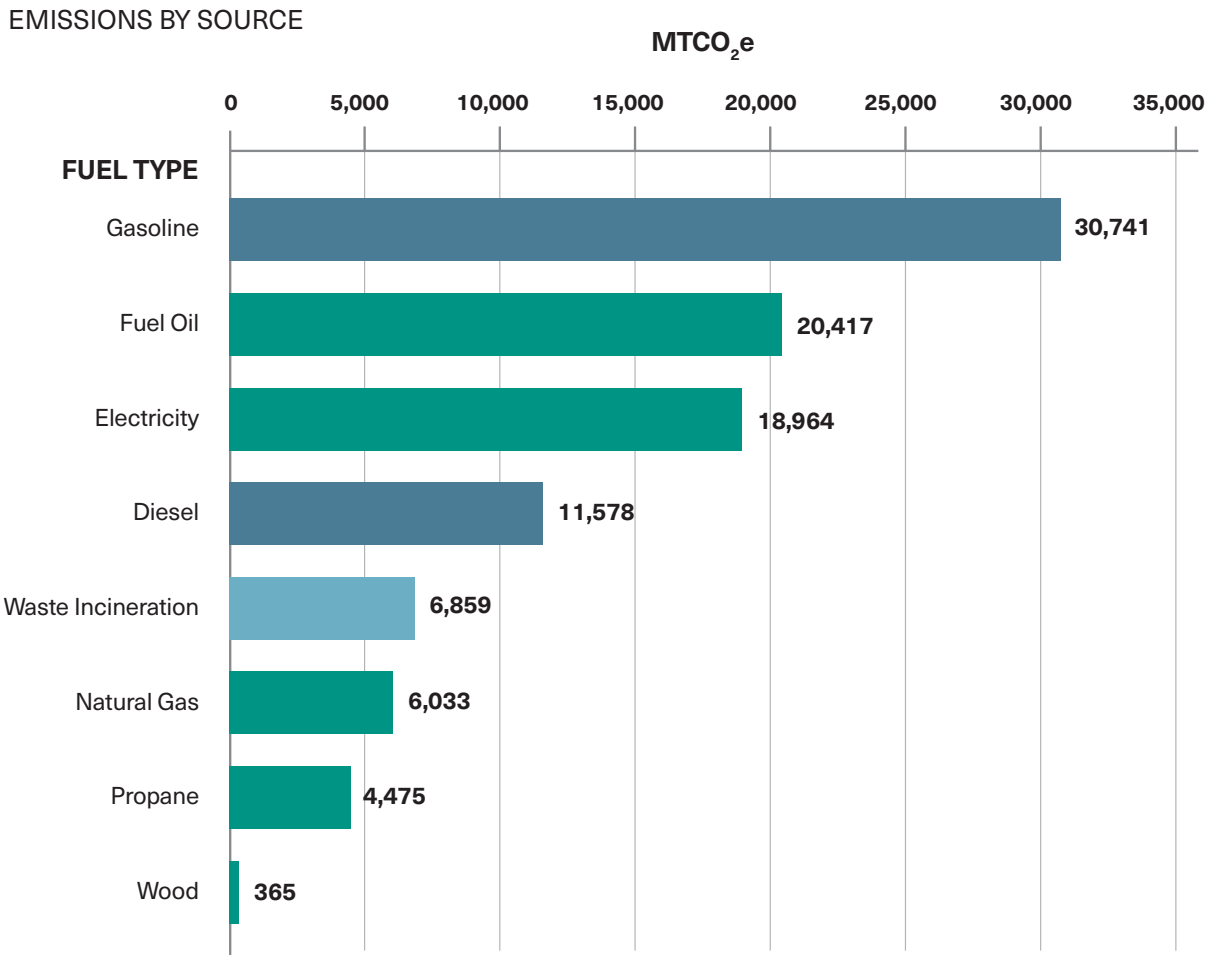
KEY TERMS

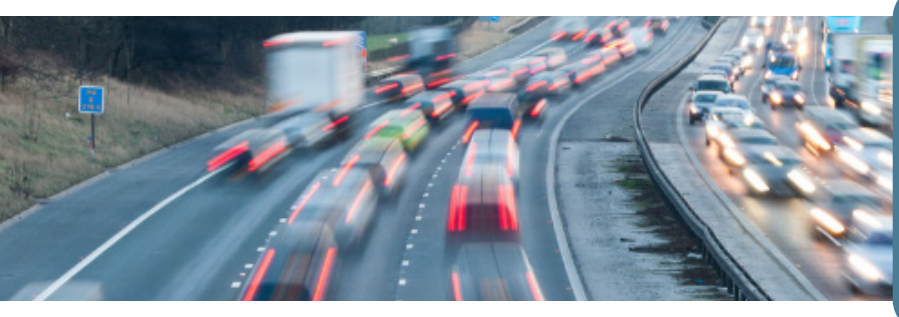
GHG emissions are measured in **metric tons of carbon dioxide equivalent ($MTCO_2e$)**. The tonnage of other greenhouse gasses (e.g. methane, nitrous oxide) is adjusted to the equivalent tonnage of carbon dioxide necessary to produce the same warming effect so everything is reported in the same units.

Emissions from Town and School operations contribute 2% of the community-wide total.

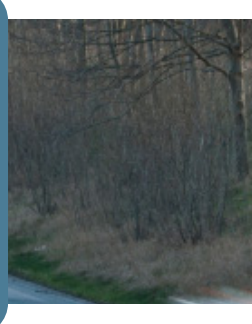
EMISSIONS BY SOURCE

In addition to looking across sectors, analyzing the sources of emissions identifies what activities are driving emissions, and what opportunities exist to decrease emissions. Looking at emissions by source, gasoline in vehicles is the largest contributor to emissions, while building emissions are a result of electricity use and the burning of heating fuel.





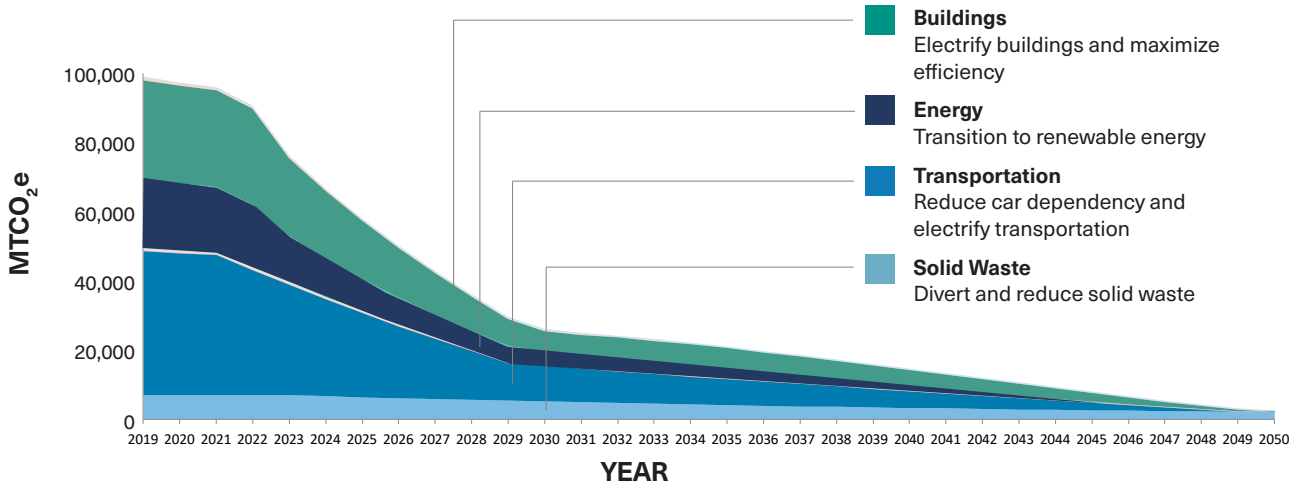
Burning gasoline to power our vehicles is the biggest single source of emissions in Yarmouth.



PATHWAY TO REDUCING EMISSIONS

Yarmouth is joining neighboring communities and the State to set emissions reduction goals, take strategic action, and track progress. Maine has recently surpassed medium-term goals for reducing emissions 10% from 1990 levels by 2020 (they achieved 25% reduction by the target year of 2020)[13]. While Yarmouth has not consistently measured community greenhouse gas emissions before 2019, the town has taken significant steps to reduce emissions. These include sourcing nearly all town and school electricity from solar through a Power Purchase Agreement, piloting electric vehicles in the municipal fleet, replacing streetlights with energy efficient LEDs, and pursuing a community solar farm with the intention of making affordable renewable energy available to town residents.

Continuing to reduce reliance on fossil fuels across all sectors will be vital to reaching our net zero emission targets. The graph below models how we could reduce community-wide emissions by implementing key strategies between now and 2050.



Attaining this level of emissions reduction—nearly to zero by 2050—will require a range of actions including improving energy efficiency, transitioning transportation and heating to run on clean energy, and reducing single-occupancy vehicle travel. An overarching strategy that will be required is to transition our sources of electricity to 100% renewable energy—which will be supported by State efforts to green the grid.[14]

This plan aims to move our community as close as possible to zero emissions by 2050, without accounting for carbon sequestration and storage. Although our natural ecosystems are vital for absorbing carbon from the atmosphere, this modeling and the actions in the Plan do not depend on carbon absorption through natural areas to offset the emissions we generate. This approach underscores our focus on transitioning to zero emissions from fossil fuels. In addition to those interventions, the Plan lays out steps for measuring the carbon absorbed and stored by or natural lands and waters, primarily for the purpose of prioritizing land conservation and restoring the health of natural systems.

KEY TERMS

Carbon sequestration is a natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form, which serves to help slow the pace of global warming. In Yarmouth, this function is performed naturally by both living and felled trees, as well as marshes and eelgrass beds.

If Yarmouth successfully implements all objectives and actions in the Climate Action Plan, we are on a good course to reach our net zero emission reduction target by 2050.

YARMOUTH'S COMMITMENT TO CLIMATE ACTION

Addressing climate change is a longstanding priority in Yarmouth. In addition to the many ways Town staff and leadership incorporate climate resilience and mitigation into decision making, there have been significant strides in recent years. Many of these municipal actions have been championed by the Committee for Energy Efficiency and Sustainability (CEES).

2020

Municipal and School Power Purchase Agreement (PPA)

3 Electric vehicle (EV) charging ports installed at town hall for free public use

2 Electric vehicles obtained for Municipal fleet

2021

School Department invests in two electric buses

2022

Town Council adopts Climate Emergency Resolution

Town enrolls in Community Resilience Partnership (CRP)

YCAT forms and begins development of Climate Action Plan

CRP grant award with Freeport to hire a shared Sustainability Coordinator

2023

Launch Efficiency Yarmouth pilot rebate program to empower low- and moderate-income residents to invest in heat pumps

Efficiency Maine grant award for 4 additional EV charging ports on municipal property

COMMUNITY RESILIENCE PARTNERSHIP

Supporting State and Federal Commitments

Tackling climate change requires decisive action across federal, state, regional, and local governments. In 2020, Maine's Climate Council released the State's first Climate Action Plan—Maine Won't Wait. The State committed to reducing GHG emissions by at least 80% by 2050 from 1990 base levels and reaching carbon neutrality by 2045. In 2021, the federal government pledged to reduce GHG emissions 50% by 2030 from 2005 levels and to reach net-zero emissions by 2050 at the latest.

By successfully implementing this Plan, we can contribute to meeting state and national-level climate commitments. At the same time, state and federal government action can enable Yarmouth to make progress by creating funding opportunities, fostering regional partnerships, and developing emerging technologies. Yarmouth is well positioned to take advantage of opportunities as they become available by leveraging associated grants and technical support.

By achieving the goals set in Yarmouth's Climate Action Plan we will support state and federal climate commitments.

FEDERAL FUNDING

Bipartisan Infrastructure Law (BIL)

Grants which help municipalities launch programs to reduce transportation and building emissions and provides technical assistance. The BIL also requires other funded entities (states, non-profits, and companies) to consult with relevant communities and develop Community Benefit Plans (CBP). This Climate Action Plan positions Yarmouth to leverage additional resources through CBPs.

Inflation Reduction Act (IRA)

Provides tax credits and direct payments to tax exempt entities to reduce the costs of investing in EVs and clean energy. Like the BIL, the IRA also requires CBPs.

FEMA BRIC and Hazard Mitigation Grants

Grants which help communities launch hazard mitigation projects related to natural disasters and identified areas of concern.

STATE FUNDING

Maine Community Resilience Partnership

Provides grants for municipalities to upgrade facilities, invest in resilient public infrastructure, encourage community climate action, and more.

Maine Infrastructure Adaptation Fund

Funding for municipalities to adapt critical infrastructure to reduce vulnerability to climate change resulting from extreme weather, sea level rise, inland and coastal flooding and severe heat.

Coastal Community Grants

Provides grants for municipalities to improve water quality, increase adaptation to erosion and flooding, restore coastal habitat, promote sustainable development, and enhance the coastal-dependent economy.

Shore and Harbor Planning Grants

Provide grants for shoreline access planning, waterfront and harbor planning, and efforts for resilient waterfront infrastructure.

Photo credit Meddy Smith

Developing the Plan

This plan was developed with collaboration across Town departments, committees, community stakeholders, and input from members of the public. People with different experiences, backgrounds, and priorities were engaged to create a plan that addresses current needs while pushing for innovation and leadership that the climate crisis demands. This plan builds off past and ongoing efforts from the Town, community organizations, and individuals striving for a sustainable, just, and healthy future for Yarmouth.

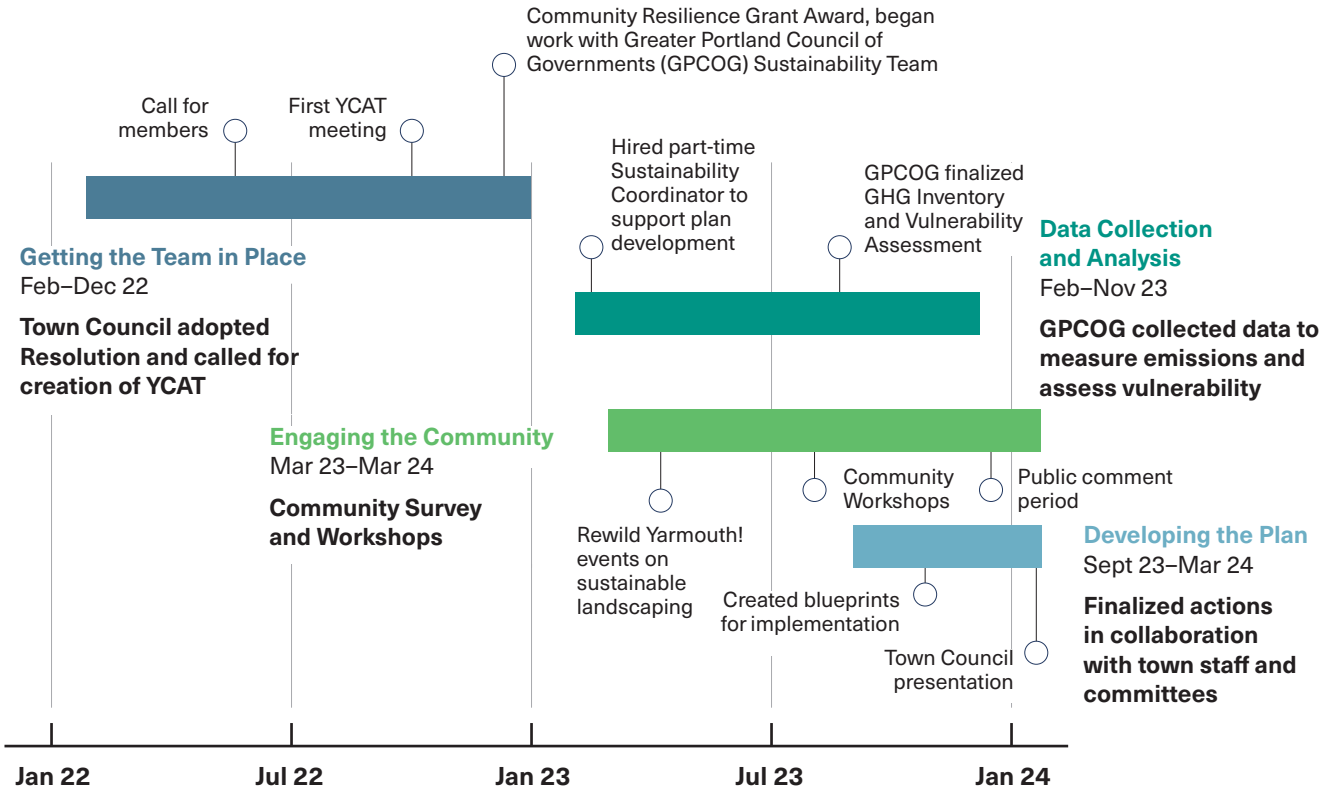
YCAT Leading the Way

To develop the plan, the Town Council created a time-limited volunteer resident task force, the Yarmouth Climate Action Task Force (YCAT). The Task Force included student representatives, liaisons from the Committee for Energy Efficiency and Sustainability (CEES), and town residents.

Over the course of 16 months, the Task Force:

- Engaged our community through conversations, surveys, presentations, and events
- Researched best practices and existing conditions to inform the Plan
- Brought expertise and diverse perspectives to refine goals, strategies, and actions and guide plan development

OUR TIMELINE



COMMUNITY ENGAGEMENT

Residents, businesses, community organizations, and town committees and staff all had important roles in developing this plan. Through workshops, surveys, and feedback conversations our community shared their priorities and ideas to help refine the actions recommended in this plan and shape our efforts to address climate change as a town.

11 different town boards and committees engaged

Student-led presentation to the High School

138 survey respondents

70+ participants at 2 community workshops

7 Rewild Yarmouth! events in Spring 2023 that engaged a range of residents, including landowners, gardeners, and families with young children, in learning about the impact of sustainable landscaping practices on local ecology.

1000+ Volunteer Hours

ONLINE PRESENCE

A project website was developed by GPCOG to be a hub for information created throughout the process, share opportunities for feedback, and display project updates. Information about the project was also shared on the Town's social media and through the Town newsletters.

STAFF AND COMMITTEE INPUT

Throughout the process, town staff shared their feedback to help co-create the plan. Staff have intimate knowledge of the resources required to accomplish actions and the landscape of other projects, priorities, and policies of the town. Town committees, with the support of designated Town staff members, will be responsible for rolling out the majority of this Plan's actions, and our collective success will rely on active collaboration, information-sharing, and clarity around roles and accountability.

SURVEY AND WORKSHOPS: WHAT WE HEARD

Concerns

- Polluted waterways
- Worsening air quality
- Extreme weather events
- Reduction in biodiversity
- Tax rates and affordability
- Energy security and rising energy costs

Priorities

- Conserving land
- Protecting habitat
- Making walking and biking safe and convenient
- Enhancing community connections and balancing development
- Making information and incentives available to support resident action

Residents are Already Taking Action

Most survey respondents say they:

- Regularly recycle
- Shop for local food
- Take steps to save energy and water

"Help residents overcome barriers to implementing eco-friendly changes, whether that be financial incentives or educating people on what they can do and HOW to do it."

Survey Respondent

GUIDING PRINCIPLES

The Yarmouth Climate Action Task Force (YCAT) selected **five guiding principles** in shaping the process, content, and implementation of the Plan. These principles align with the mission statement developed during the Comprehensive Planning process.

COMMUNITY-WIDE INPUT: Seek input from a diverse network across the community, explore interconnections, engage partners and experts, facilitate opportunities for public input and feedback, and harness creativity to proactively address the wide-ranging needs of community members.

BOLD ACTIONS: Bold, clear, and concrete actions are needed to address the urgency of climate change. The Town will employ innovative and sustainable approaches that are based on their emission reduction impact, cost effectiveness, feasibility, equity, and overlapping benefits for environmental and community health.

EQUITY: Strive to involve all community members, especially vulnerable or marginalized groups. Prioritize climate action that addresses injustice, expands access for traditionally marginalized communities, and builds community capacity and ownership.

VARIETY OF TOOLS: A blend of incentives, regulation, and information sharing are necessary to address greenhouse gas emissions and prepare our community to adapt to the changing climate. The Town should lead by example in actions, policies, and cost-effective investments.

LIVING DOCUMENT: Measuring our progress over time and being flexible to evolving conditions is critical to achieving our goals. The Town will review and revise this Plan to ensure it is a living document.

MISSION STATEMENT

The Town of Yarmouth is a small, vibrant, coastal community where residents have a strong sense of connection to the town and to each other. Yarmouth will plan and make decisions through a lens of equity, sustainability, and fiscal responsibility to ensure that the community's valued assets are preserved and enhanced for future generations, while pursuing the transformative changes needed in critical areas to build community resilience.

WHAT THIS PLAN CAN BE

AN ACTIONABLE ROADMAP

This Plan is a clear roadmap that will guide Yarmouth towards reaching our emission reduction targets for 2030 and 2050 and prepare our community for the intensifying impacts of a changing climate.

A FRAMEWORK

Town leadership will use this plan as a guide when making decisions about policy, investment, and projects. Like any public decision-making process, there will continue to be community dialogue and stakeholder engagement. The Plan is intended to be flexible and will need to be revised at regular intervals in response to public input, new technology, lessons learned, and best practices based on ongoing research.

A TOOL FOR CIVIC ENGAGEMENT

The climate crisis requires bold and urgent action across our whole community. As the Town implements the Plan, there is an opportunity to bring in more voices, support residents and businesses to take action, and continue to foster a culture of collaboration and inclusivity in town.

YOUTH VOICES

This Plan was initiated through a process started by local youth activists who recognized the need for the Town to take action on climate change. The younger generation will bear the biggest burden of climate impacts—and our efforts now affect their access to a clean, safe, and healthy future. Moving forward, Yarmouth should hold space for youth voices in projects and planning, and offer opportunities for younger community members to shape our town—together.

Photo credit Molly Haley

Our Action Plan

This Plan is organized into **five focus areas** that address our biggest opportunities for reducing emissions, storing carbon, and supporting adaptation to climate impacts. Topics in these areas overlap and taking action in one area can have a cascade of benefits and fulfill goals in other areas. The following five chapters list goals, strategies, and actions with explanations of how each one relates to Yarmouth's climate targets.

EFFICIENT TRANSPORTATION AND LAND USE

VISION	WHAT'S INCLUDED
Yarmouth's infrastructure and land use patterns prioritize natural and social connections, facilitate biking and walking, and make it easy for people to use public transportation and electric vehicles.	• Infrastructure for walking & biking • Electric vehicles • Public transportation • Land use policy

HEALTHY BUILDINGS AND RENEWABLE ENERGY

VISION	WHAT'S INCLUDED
Yarmouth's buildings are efficient, preserved, healthy, and powered by renewable energy. We maximize the use of local renewable energy while investing in—and advocating for—a renewable energy grid that is resilient and affordable for all.	• Energy efficiency & electrification • Local renewable energy, energy supply & grid resilience • Policies guiding new development

CIRCULAR ECONOMY

VISION	WHAT'S INCLUDED
Yarmouth manages resources sustainably through an efficient circular economy that reduces waste by maximizing the lifecycle of material goods, reducing consumption, and driving local innovation.	• Reuse systems & waste reduction • Recycling & composting • Waste policies

THRIVING NATURAL ENVIRONMENT

VISION	WHAT'S INCLUDED
Yarmouth ensures a resilient future by protecting and stewarding our valuable lands and waters to preserve essential ecosystems and absorb carbon dioxide from the atmosphere.	• Land conservation • Biodiversity & habitat protection • Land stewardship practices • Shores & waters

CONNECTED AND SAFE COMMUNITY

VISION	WHAT'S INCLUDED
Yarmouth residents and businesses are empowered by understanding health and safety risks from climate change, and the Town is proactively planning to minimize hazards from climate-exacerbated disasters.	• Emergency preparedness • Health & wellness • Neighborhood connections • Critical infrastructure

Photo credit Julie Dubosky

Efficient Transportation and Land Use

VISION

Yarmouth's infrastructure and land use patterns prioritize natural and social connections, facilitate biking and walking, and make it easy for people to use public transportation and electric vehicles.

Nearly half of our emissions come from cars. How we plan for neighborhoods, businesses, and services to connect with each other has a big role in shaping how we get around. We can reduce emissions from vehicles while supporting a thriving, connected community by shifting towards emissions-free transportation and fostering land use practices that aren't car-dependent.

KEY TERMS

Vehicle Miles Traveled (VMT) is the total distance covered by all vehicles in a specific area over a set time. This measurement helps assess our reliance on vehicles to get around.

Mobility refers to the ability to move easily from one place to another, typically describing the degree of freedom in movement around places. **Active mobility** refers to any form of transportation that involves physical activity, such as walking or biking.


Photo credit Meddy Smith

Transportation accounts for 43% of Yarmouth's emissions. Gasoline powered passenger vehicles make up the majority of the total—followed by commercial vehicles. The municipal and school fleet contribute emissions at a much smaller scale.

Bringing transportation emissions down significantly will require reducing vehicle miles traveled (by making it easier for people to walk, bike, and take public transportation) and transitioning vehicles to zero emissions. Forward-thinking land use policies and development practices will balance the needs of our growing community and minimize how our built environment contributes to climate change over the long term.

The 2019 emissions data includes trips only *inside town boundaries*, meaning that the parts of our trips out of Yarmouth (for example: to work in Portland, for shopping trips to Freeport, etc) are not accounted for. To support state and national emissions-reduction goals, we aim to also support carbon-free ways to commute and get around in the region.

EQUITY & TRANSPORTATION

'Mobility equity' means that all community members can safely get where they need to go, regardless of physical or cognitive ability, age, income, or other factors. Active and public transportation not only reduce emissions, but also improve physical and mental health through movement and human interaction. Facilitating alternatives to gas-powered vehicles is not only good for the climate; it is good for people too.

OUR PROGRESS

- Town Complete Streets Policy and Committee created in 2015
- New housing located near public transit and trails and extension of sidewalks throughout town
- Major regional trail connections, the Beth Condon Pathway and Casco Bay Trail, are underway

BY THE NUMBERS

43%

of total emissions from transportation

30%

of total emissions from passenger vehicles, 12% from commercial vehicles, and 1% from buses

85%

of Yarmouth workers commute out of town for employment, and the same percentage of workers in town are not residents[15]

ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Efficient Transportation and Land Use.

Quick Win: Short-term actions that have the potential to maintain implementation momentum

High Impact: Actions that have the potential to get us the furthest toward the Town's goals

Impact Type: Action primarily supports Mitigation (M) or Adaptation (A)

Target Served: Action primarily supports achieving the 2030 Community target of 80% reduction (2030 C), the 2030 Municipal target of net zero (2030 M), or the 2050 Community target for net zero (2050) or accelerates adaptation and resilience strategies (R)

	Quick Win or High Impact	Impact Type	Target Served
Goal 1: Reduce emissions from transportation.			
Strategy 1.1: Expand infrastructure for accessible and safe walking, biking, and other active transportation.			
1.1.1: Complete a comprehensive, town-wide transportation planning process, resulting in an adopted implementation plan that includes non-motorized trail expansion, increased bike/walk infrastructure, and changes in parking requirements that incentivize active transportation.		M A	2050
1.1.2: Facilitate the completion of the Beth Condon Memorial Pathway from Cumberland to Freeport and the Casco Bay Trail.		M	2050
Strategy 1.2: Increase public transit use.			
1.2.1: Expand public transportation infrastructure, integrated with bike and pedestrian routes, to increase frequency, accessibility, desirability, and connectivity of public transport options.		M	2050
1.2.2: Provide information for residents to reduce miles traveled for work and recreation.	Quick Win	M	2050
Strategy 1.3: Accelerate electric vehicle adoption.			
1.3.1: Establish a comprehensive EV outreach and education campaign for residents and local businesses.	Quick Win	M	2030 C
1.3.2: Establish a municipal electrical vehicle procurement plan that phases out purchases of fossil-fuel based vehicles by 2030, starting with passenger vehicles and moving to medium- and heavy-duty vehicles as feasible across departments.	High Impact	M	2030 M
1.3.3: Partner with the School Department to transition school bus fleet to all-electric.	High Impact	M	2030 M
1.3.4: Continue building out EV charging infrastructure on town and school properties to ensure EV charging capacity for an entirely electric fleet.		M	2030 M
Strategy 1.4: Expand public EV charging network.			
1.4.1: Expand EV charger requirement for parking lots and new site proposals to all zones in town.	Quick Win	M	2030 C
1.4.2: Facilitate and support the expansion of regional EV charging network with businesses.		M	2030 C

ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Efficient Transportation and Land Use.

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	Quick Win or High Impact	Impact Type	Target Served
Goal 2: Plan for future land use that reduces emissions and is resilient to climate impacts.			
Strategy 2.1: Strengthen policies and enforcement to promote sustainable, resilient, and accessible land use practices in coordination with Comprehensive Plan implementation.			
2.1.1: Amend zoning ordinances to reduce emissions by allowing for more dense, mixed-use areas close to transit and economic centers, and prioritizing adaptive reuse of existing buildings.	High Impact	M	2050
2.1.2: Establish criteria in subdivision, site plan, and Character-based Development Code to incorporate current climate data and manage adherence to land protection and stewardship goals.		A	R
Strategy 2.2: Increase tree canopy.			
2.2.1: Assess current tree canopy cover and ensure resources for increasing cover by planting and maintaining climate-resilient species.		M	2050
2.2.2: Establish zoning ordinance and/or incentives that serve to protect mature trees and reduce lot clearing.	Quick Win	M	2050
Strategy 2.3: Support restoration of riverine and coastal ecosystems.			
2.3.1: Restore the ecological function of the Royal River by removing all barriers, taking into consideration the river restoration feasibility study by the Army Corps of Engineers.		A	R
2.3.2: Review the Royal River Corridor Plan (2009) and expand and update the Plan with a focus on climate resilience.		A	R
2.3.3: Promote guidance for protection/restoration of erodable bluffs, steep slopes, and shorelines using nature-based-solutions (regrading, tree-planting, retreat) for both private and town-owned lands.	Quick Win	A	R
2.3.4: Amend zoning to increase shoreline setbacks for freshwater and saltwater areas while encouraging low-impact development, in consultation with DEP as applicable.		A	R

The associated metrics in the Scorecard represent the data we will track in the coming years to measure progress on these strategies. There is an Implementation Blueprint developed for action 1.3.1.

FUNDING OPPORTUNITY EXAMPLES

There is federal, state, and local funding available to finance climate action projects which can help Yarmouth implement this Plan. Below are examples of funding opportunities.

Efficiency Maine is pursuing discretionary funding through the Federal Highway Administration to channel into rebates and grants for EV charging networks

EPA's Clean School Bus Program

Maine Jobs and Recovery Plan allocates $8 million to expand municipal and public charging stations

Maine Jobs and Recovery Plan has set aside $5 million to fund innovative public transportation options

Be Part of the Solution

1. Swap one local driving trip each week to walking or biking.
2. Commute by public transportation or carpool.
3. Switch your next car to electric—see rebates and resources from Efficiency Maine.

Photo credit Julie Dubovsky

LEADING BY EXAMPLE

Replacing car trips with active transportation such as biking and walking leads not only to reduced greenhouse gas emissions, but also to improved health and social connections. Through the Main Street Sidewalk and Streetscape Master Plan, the Town is implementing ongoing improvements to Main Street, such as curb extensions (pictured here), that visually and physically narrow the roadway, creating safer and shorter crossings for walkers while increasing the available space for street furniture, benches, plantings, and street trees.

Healthy Buildings and Renewable Energy

VISION

Yarmouth's buildings are efficient, healthy, preserved, and powered by renewable energy. We maximize the use of local renewable energy while investing in—and advocating for—a renewable energy grid that is resilient and affordable for all.

The way we generate and consume energy is at the core of climate change. Today, the majority of our energy consumption relies on fossil fuels, such as oil or gas for heating buildings, and electricity generated by fossil-fuel based power plants. Using less energy in our buildings and transitioning to renewable sources is key to addressing climate change.

Current emissions measurements don't include the "embodied carbon" in buildings. It takes 35–50 years for a new single-family residence that is 30% more efficient to overcome the embodied energy lost in the demolition of an existing average performing house of the same size.[16]

KEY TERMS

A **micro-grid** is a self-contained electrical network that allows you to generate electricity on-site and use it when you need it most, like when the grid goes down or prices peak.

Renewable energy is energy from a source that is not depleted when used, such as wind or solar power.

Weatherization projects reduce the amount of heat lost from a building by updating the building's infrastructure, such as adding insulation. Retaining heat for longer can save money and energy.

Embodied carbon refers to the emissions stored in building fabric (walls, roof, etc.) which are released when they are disposed of during renovation or demolition.

Buildings in Yarmouth, including both homes and commercial buildings, account for 50% of our total emissions. This includes emissions from the electricity we use, as well as from the fuel used to heat them.

To reduce emissions from buildings, we need to maximize the efficiency of new and existing buildings, minimize climate impacts from construction and renovation, and ensure homes and businesses are powered, heated, and cooled by renewable energy sources, such as solar. The Town can tackle the first two steps by promoting weatherization and thoughtful retention and reuse of building materials for residential and commercial buildings in town. The state's efforts to supply the electricity grid fully from renewable sources by 2050 will reduce emissions from operating buildings. At the same time, reliability of the grid will become even more critical. The Town can support reliable and resilient electrical infrastructure through evaluating opportunities for battery storage, distributed generation, micro-grids, and supporting related state policies.

To prepare for the expected impacts of climate change, buildings in Yarmouth must also be resilient to heavier storms, potential flooding, and bigger temperature swings.

EQUITY, BUILDINGS, & ENERGY

The cost of energy has historically been in flux—often burdening those with least resources to bounce back. As we transition our buildings to renewable energy sources, we must do so with a focus on affordability and equity. Efficiency Yarmouth is a Town rebate pilot program that aims to support low and moderate residents to invest in electric heating solutions for their homes.

OUR PROGRESS

- Viable sites for community solar assessed by CEES
- All town street lights LED, reducing energy consumption by 64% and saving 81% in annual operating costs
- 92% of the Town and school's current electricity use is produced with Maine solar energy through a Power Purchase Agreement (PPA)
- Established an Affordable Housing Committee and Historic Preservation Committee, with related Town ordinances passed

BY THE NUMBERS

29%

of total emissions comes from operating homes and 20% comes from businesses. Most of these emissions are from fossil fuels used for heat.

61%

of homes use fuel oil or kerosene for heat, 13% use propane, and 14% use natural gas[17]

In 2022, Yarmouth residents received

314

heat pump rebates from Efficiency Maine and 79 weatherization rebates

Quick Win: Short-term actions that have the potential to maintain implementation momentum

High Impact: Actions that have the potential to get us the furthest toward the Town's goals

Impact Type: Action primarily supports Mitigation (M) or Adaptation (A)

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ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Healthy Buildings and Renewable Energy.

	Quick Win or High Impact	Impact Type	Target Served
Goal 3: Reduce emissions from buildings while making homes and businesses resilient to climate change.			
Strategy 3.1: Actively promote weatherization, efficiency, electrification, and other emission-reducing upgrades in existing buildings			
3.1.1: Adopt a Commercial PACE ordinance and develop materials to support use of residential and commercial programs.	Quick Win	M	2050
3.1.2: Phase in an Energy Benchmarking Ordinance for large commercial, residential, and municipal and school facilities that begins with a pilot benchmarking program with businesses.	High Impact	M	2050
3.1.3: Review and update the Yarmouth Historic Preservation Advisory Ordinance to include tools, policies, and incentives that retain embodied carbon and increase energy efficiency in historic building rehabilitations.	Quick Win	M	2050
3.1.4: Continue and expand Efficiency Yarmouth as a resource for residents.		M A	2050
Strategy 3.2: Require new construction and major renovations to meet the highest standards for efficiency, carbon neutrality, and climate resilience by 2030.			
3.2.1: Require and support new development and major renovations (including municipal and school) to be powered by renewable energy and climate resilient from 2030 on.	High Impact	M A	2050
3.2.2: Adopt the optional Maine Energy Stretch code IECC 2021 and advocate with the State for advancing energy codes in the future.	High Impact	M	2050
3.2.3: Integrate renewable energy and efficiency in affordable housing developments, with a focus on reducing housing costs for tenants.	Quick Win	M	2050
Strategy 3.3: Adapt municipal and school buildings to climate resilient, zero emission facilities.			
3.3.1: Develop and fund a plan for all school and municipal facilities to maximize energy efficiency and be powered by renewable energy by 2030.	High Impact	M	2030 M
3.3.2: Explore adopting a Carbon Shadow Price for addressing emissions produced through municipal capital investments.		M	2030 M

ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Healthy Buildings and Renewable Energy.

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High Impact: Actions that have the potential to get us the furthest toward the Town's goals

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	Quick Win or High Impact	Impact Type	Target Served
Goal 4: Meet 100% of electricity needs with renewable energy.			
Strategy 4.1: Foster development of reliable local renewable energy systems.			
4.1.1: Require all new large developments (commercial, residential, or municipal) to evaluate feasibility of district energy or microgrids powered by renewable energy.		M A	R
4.1.2: Develop and implement a Resilient Power Plan to ensure critical facilities in town have renewable backup power.		A	R
Strategy 4.2: Reduce barriers to implementing renewable energy.			
4.2.1: Remove barriers in zoning/permitting of renewable energy generation and storage systems, such as implementing policies and practices necessary to achieve SolSmart Gold level certification (or equivalent).	Quick Win	M	2050
4.2.2: Develop, incentivize and celebrate local renewable energy generation and storage.		M A	2030 C
4.2.3: Provide and maintain publicly available resources for residents to facilitate renewable energy adoption.	Quick Win	M	2030 C
4.2.4: Develop requirements and design guidance for on-site renewable energy generation and electrification in new construction and major renovations.	High Impact	M	2050
4.2.5: Advocate to position the Wyman station facility to support the town's climate action goals.		M A	2050
Strategy 4.3: Pursue 100% renewable energy reliance for government operations.			
4.3.1: Build upon current Municipal and School Power Purchase Agreement to meet 100% of current and forecasted electricity needs with renewable energy.	Quick Win	M	2030 M

The associated metrics in the Scorecard represent the data we will track in the coming years to measure progress on these strategies. There is an Implementation Blueprint developed for action 3.3.1.

FUNDING OPPORTUNITY EXAMPLES

There is federal, state, and local funding available to finance climate action projects which can help Yarmouth implement this Plan. Below are examples of funding opportunities.

Efficiency Maine is the primary distributor of energy efficiency, weatherization, and building electrification rebates and grants

Energy Efficiency Revolving Loan Fund Capitalization Grant provides money to the state to support residential and commercial energy efficiency projects

State biennial budget has funds to support power sector transformation, grid modernization and offshore wind

Energy Efficiency and Conservation Block Grant Program (EECBG) provides grants to communities for clean energy programs and projects

Maine Jobs and Recovery Plan has set aside $50 million to match funds for municipal efficiency projects

Energy Storage Demonstration and Pilot Grant Program

Be Part of the Solution

1. Electrification and efficiency rebates for homeowners, businesses, and renters at Efficiency Maine.
2. Learn about installing solar.
3. Get tips on saving energy and money at home.
4. Get tips on making your older home more sustainable.

LEADING BY EXAMPLE

317 Main Community Music Center, the beloved hub in the heart of the village, expanded its rooftop solar array as part of its recent “Raise the Barn” campaign. According to Director of Finance Edward Tittmann, “solar was a bit of a no-brainer. The system provides $8,000 worth of electricity at today’s prices, working out to a risk-free 10-year payoff.” Yarmouth residents, businesses, and nonprofits can take advantage of federal incentives which make renewable energy projects even more cost-effective.

Circular Economy

VISION

Yarmouth manages resources sustainably through an efficient circular economy that reduces waste by maximizing the lifecycle of material goods, reducing consumption, and driving local innovation.

The way we buy, use, and dispose of materials has impacts beyond the trash or recycling bin. Every time something is thrown away, we end the life cycle of the natural resources and energy used to create that product, whether those are trees, oil, water, metal, or construction debris, resulting in the release of embodied carbon. By transforming how we consume products and manage waste we can reduce emissions, save families money, keep our environment clean, and empower our local economy.

KEY TERMS

The **circular economy** is a series of interconnected processes which keep materials and products in circulation and out of landfills, through techniques such as reuse, refurbishment, maintenance, remanufacture, and composting.

Linear Economy refers to our current economic model in which finite resources are extracted to make products that are used and then thrown away.

Refurbishing is a process to return a product to good working order by repairing or replacing components, updating specifications, and improving appearance.

Our economy is largely based on using finite resources in a linear process. We use—then dispose of—materials that ultimately pollute our environment and account for 7% of Yarmouth's total emissions. We acknowledge that the 2019 emissions baseline does not include the upstream impacts of waste: emissions created when products are made, transported, and stored[18]. To tackle these emissions, we can transform our "throw away" culture and change consumption habits, keep products such as clothing, furniture, packaging, building parts, and household products in use for longer, and foster economic innovation that doesn't depend on the consumption of limited resources.

To effectively respond to the urgency of the climate crisis, Yarmouth must move beyond a primary emphasis on recycling to place even greater emphasis on reducing and reusing all materials. If we move quickly to create an effective circular economy, we will reduce direct emissions from town waste and also minimize emissions from the lifecycle of everyday items we use.

EQUITY & WASTE

Underserved communities in Maine and beyond have been unfairly burdened with the negative environmental, financial, and health impacts caused by a linear economy. A circular economy can benefit Yarmouth residents by providing affordable alternatives to consumption and contributing to a strong and diverse local economy. At the same time, actions in Yarmouth to reduce waste that we send out of our community can lessen health risks from waste and manufacturing processes that are often located in or near low-income communities.

OUR PROGRESS

- Yarmouth is an owner-member community of EcoMaine
- Town added drop-off bins for donating clothing and shoes
- In 2023 Town implemented a Pay As You Throw Program to incentivize reducing waste

BY THE NUMBERS

In 2019, Yarmouth's recycling rate of

33.7%

was similar to Maine's statewide recycling rate of 33.9%[19]

The total tons of trash decreased

34%

in the 6 months after the Pay-As-You-Throw (PAYT) program was introduced, compared with the previous year[20]

50%

of glass produced, 10% of wood harvested, 20% of aluminum mined, 40% of plastic created goes primarily to make single-use packaging[21]

ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Circular Economy.

Quick Win: Short-term actions that have the potential to maintain implementation momentum

High Impact: Actions that have the potential to get us the furthest toward the Town's goals

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	Quick Win or High Impact	Impact Type	Target Served
Goal 5: Reduce community waste.			
Strategy 5.1: Minimize waste and prioritize sustainable consumption.			
5.1.1: Phase out single use materials in commercial spaces by adopting single use item bans and promoting reuse systems.		M	2050
5.1.2: Launch a business recognition and outreach program to provide resources for businesses to reduce waste.	Quick Win	M	2050
5.1.3: Adopt a Municipal Sustainable Purchasing Policy.	Quick Win		2030 M
5.1.4: Assess opportunities to reduce waste from town operations and facilities by tracking waste and developing a zero waste plan.			2030 M
Strategy 5.2: Promote a circular resource sharing economy.			
5.2.1: Develop a library of things that serves as a space to foster opportunities for residents to reuse, repair, and create items and materials.		M	2050
Strategy 5.3: Expand reuse, recycling and composting infrastructure, services, and education.			
5.3.1: Phase in requirements for composting at businesses and apartment buildings that promotes reuse solutions over single use bioplastics.	High Impact	M	2050
5.3.2: Require recycling in commercial and multifamily residential buildings by 2026.	High Impact	M	2030 C
5.3.3: Explore construction and demolition waste ordinances.		M	2050
5.3.4: Enact strategies to minimize waste at Clam Festival and strive to reach zero waste event standards by 2030.		M	2030 C

The associated metrics in the Scorecard represent the data we will track in the coming years to measure progress on these strategies. There is an Implementation Blueprint developed for action 5.1.1.

FUNDING OPPORTUNITY EXAMPLES

There is federal, state, and local funding available to finance climate action projects which can help Yarmouth implement this Plan. Below are examples of funding opportunities.

USDA Compost and Food Waste Reduction (CFWR) pilot projects to support food waste diversion

EPA Recycling Education and Outreach Grant Program to encourage recycling through education

EPA Solid Waste Infrastructure for Recycling Grants for Communities to support building a circular economy

Be Part of the Solution

1. Learn more about what a Circular Economy looks like.
2. Get Reuse 101 from Upstream.
3. See the Zero Waste Purchasing Guide from YHS Environmental Action Club.

LEADING BY EXAMPLE

In 2022, Yarmouth high school student Maya Faulstich recognized the need to help reduce waste generated at events. She founded the Yarmouth High School Environmental Action Club's 'Dishes on Demand' program which provides reusable plates, cups, and utensils for school and community events and dinners. The program earned a finalist award in National Geographic's Global Slingshot Challenge and has prevented nearly 5,000 plates, cups, and utensils from being thrown away over one year.

Photo credit Molly Haley

Thriving Natural Environment

VISION

Yarmouth ensures a resilient future by protecting and stewarding our valuable lands and waters to preserve essential ecosystems and absorb carbon dioxide from the atmosphere.

We seek refuge and recreation in forests, fields and coastal areas, and many of us have livelihoods that depend upon their continued health. Undeveloped areas house essential species of native plants and animals which rely upon each other in complex ways. Forests, grasslands, salt marshes, estuaries, and kelp beds are all important components in the work to decrease the amount of carbon dioxide in the atmosphere. We must take steps to conserve, restore, and steward these essential ecosystems.

KEY TERMS

Stewardship: Borrowing from indigenous models which emphasize the interconnectedness of all species and the importance of place, stewardship focuses on preserving the health of our ecosystem through measures such as protecting wildlife corridors, removing invasive species, and preventing water and soil contamination.

Land conservation: Setting aside parcels of land for permanent protection through fee acquisition or a conservation easement, a binding legal agreement with accompanying tax benefits that protects natural resources.

Marsh migration: As sea levels rise, marshes gradually shift inland to formerly dry land. Sea level rise threatens to drown tidal marshes, and adjacent development can inhibit natural migration.

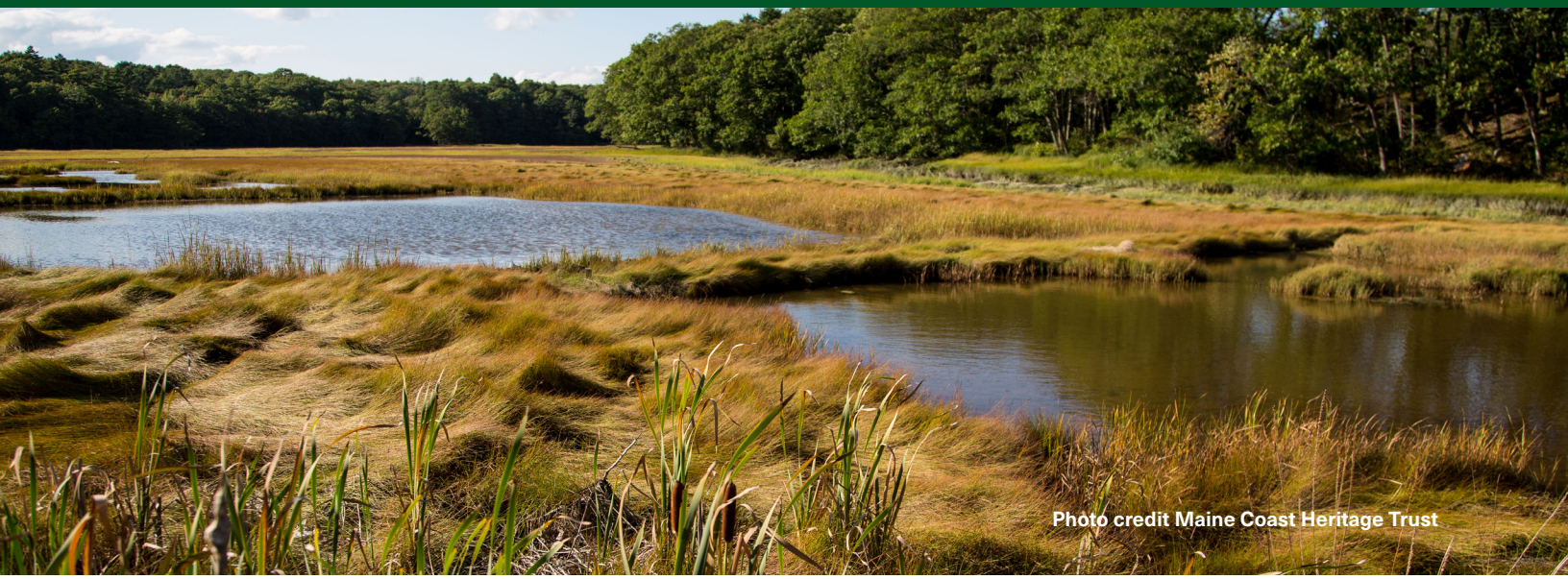

Photo credit Maine Coast Heritage Trust

Our state's natural and working lands play an important role in capturing carbon and helping slow the pace of global warming.[22] In line with the state's goal to increase total acreage of conserved lands to 30% by 2030,[23] municipalities and land trusts are stepping up land protection efforts. Permanent protection for natural lands and waters will sequester carbon, support biodiversity, insulate us against severe weather and sea level rise, and protect the health of our community as it continues to grow.

Aside from conserving land, it is also essential that we adopt evidence-based policies and practices for land use and development, so that we ensure the continued vitality of our environment. Clear steps can be taken—by Town government, community stakeholders, and private citizens—to identify our carbon sequestration capacity, increase our mature tree canopy, restore the ecological function of our rivers, prioritize habitat corridors, reduce invasive species, and allow for marsh migration over time.

EQUITY & NATURAL RESOURCES

Land conservation ensures that all residents, regardless of property ownership, will have regular access to clean air, clean water, and the open space we rely upon for refuge and recreation. Access to safe walking and biking trails allows for lower transportation costs for families within the community. In addition, land conservation helps protect residents from the risks of flooding and other impacts of severe storms, which often lead to costly repairs. Protecting open space while guiding future development to areas that already have public infrastructure serves to stabilize local property taxes for existing residents by avoiding the cost of increased public services.

OUR PROGRESS

- In 2019, Yarmouth completed an Open Space Plan, which provides a well-considered list of suggested actions for the mindful use and protection of open space. Much of this plan has yet to be implemented.
- Tree Advisory Committee created in 2022 to promote the conservation and stewardship of trees on town lands.
- 95 acres of town land treated for invasive species in 2021 and 2022.
- In 2023, the Tree Advisory Committee spearheaded a new initiative to restore riparian areas in Royal River Park.

BY THE NUMBERS

As of 2023,

12%

of land (1,030 acres) in Yarmouth is designated as open space, but only 4% (354 acres) is permanently protected by a third party easement.

450

acres were identified as top priority for conservation according to the 2019 Yarmouth Open Space Plan.

Protecting 2,566 acres (30% of Yarmouth) could sequester more than 9,000 MT of carbon per year (based on 3.6 tons/ acre rate)[24]

The waters around Yarmouth lost over

100

acres of eelgrass between 2013 and 2021. Eelgrass is a native seagrass that provides habitat, supports water quality, and sequesters carbon.[25]

ACTION TABLE

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	Quick Win or High Impact	Impact Type	Target Served
Goal 6: Permanently conserve 30% of Yarmouth land by 2050.			
Strategy 6.1: Identify resources and build a clear process for local land conservation.			
6.1.1: Assess and prioritize new conservation opportunities, using the Yarmouth Open Space Plan (2019) as a prioritization guide, with a focus on connectivity, carbon storage, habitat, and public access.		A	2030 C
6.1.2: Increase the town's Land Acquisition Fund to a minimum of $1 million, funded through a Land Bond, grants, and/or annual town budget allocations.	High Impact	M	2030 C
6.1.3: Assess town-owned lands for permanent protection.	Quick Win	M	2030 C
Strategy 6.2: Protect properties through purchase or easement with willing landowners, or through partnerships.			
6.2.1: Utilize funds to permanently protect prioritized Town-owned lands.		M	2050
6.2.2: Partner with willing landowners to permanently conserve land that sustains or enhances carbon sequestration and improves climate resiliency.	High Impact	A	2050

ACTION TABLE

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	Quick Win or High Impact	Impact Type	Target Served
Goal 7: Adopt stewardship practices that increase carbon storage and enhance the ecosystem's resilience to climate change.			
Strategy 7.1: Manage all town-owned Open Space for climate resilience and to maximize carbon sequestration.			
7.1.1: Add sections on climate resilience and carbon storage to existing management plans for all town-owned Open Space and include these sections in plan updates moving forward.		M A	2050
7.1.2: Develop a dedicated Stewardship Fund for Town-owned open spaces, to be funded through private and public contributions.		A	R
Strategy 7.2: Manage invasive plant species.			
7.2.1: Implement and update the Three-year Invasive Vegetation Management Plan to include all town and school vegetation management practices.		A	R
7.2.2: Develop subdivision ordinance requirements for invasive species management plans.		A	R
7.2.3: Incentivize invasive species management by private landowners and HOAs through education and outreach.		A	R
Strategy 7.3: Support sustainable landscaping by private landowners.			
7.3.1: Promote resources for individual residents and business owners to engage in sustainable landscaping to absorb stormwater, protect wetlands and local ecology.	Quick Win	M A	R
7.3.2: Develop protective rules and incentives to reduce or eliminate ecosystem damaging fertilizer, pesticides, and toxic contaminants reaching our lands and waters.		A	R

The associated metrics in the Scorecard represent the data we will track in the coming years to measure progress on these strategies. There is an Implementation Blueprint developed for action 6.1.1 and 6.2.2.

FUNDING OPPORTUNITY EXAMPLES

There is federal, state, and local funding available to finance climate action projects which can help Yarmouth implement this Plan. Below are examples of funding opportunities.

National Coastal Resilience Fund awards funding to improve environmental resilience and protect coastal wildlife habitats

State biennial budget has funds to upgrade municipal culverts at stream crossings

USDA Community Forest and Open Space Conservation Program

Land for Maine's Future Program

Maine Natural Resource Conservation Program

Be Part of the Solution

1. Consider enrolling your natural or working lands in Maine's current use tax program and/or establishing a conservation easement.
2. Learn more about sustainable landscaping with Maine Audubon's Bringing Nature Home program or Wild Seed Project.
3. Experiment with ideas for rewilding your lawn, in favor of biodiversity and native plants.

LEADING BY EXAMPLE

The Cousins River Fields and Marsh Preserve is an 82-acre property that was recently acquired by Maine Coast Heritage Trust (MCHT) in partnership with the Freeport Conservation Trust (FCT) and the Royal River Conservation Trust (RRCT), with support from the Town of Yarmouth. This project is a great example of the success that can happen when conservation groups come together to protect land critical to mitigating the effects of climate change. And thanks to previous years of extensive conservation work, this addition creates a 220-acre conserved marsh system that will be critical to buffering sea level rise and mitigating other effects of climate change.

Photo credit Molly Haley

Connected and Safe Community

VISION

Yarmouth residents and businesses are empowered by understanding health and safety risks from climate change, and the Town is proactively planning to minimize hazards from climate-exacerbated disasters.

Hazards from a changing climate—such as sea level rise and more frequent and intense storms—will bring a cascade of impacts across our community. We have an opportunity to protect the people and places of Yarmouth while fostering a connected, empowered, and just community for all.

KEY TERMS

Public health is the science and practice of promoting and protecting the well-being of communities through the prevention of diseases, promotion of healthy behaviors, and assurance of environmental and social conditions that support health.

Resilience refers to the capacity of communities, systems, or individuals to adapt and recover swiftly from stressful circumstances or disasters.

Photo credit Molly Haley

Climate change causes a wide range of public health and safety concerns for both physical and mental wellbeing. The burden of climate change will not be felt equally across the community. People with existing social vulnerabilities, such as seniors or cost-burdened households, will be disproportionately impacted by climate hazards and climate-related health risks such as extreme heat.

We can take steps to protect the services and infrastructure our community depends on while preparing for intensifying impacts of a changing climate. In doing this, we will strive to ensure everyone has access to the resources they need during emergencies and our community is able to be resilient to general disruptions and longer-term challenges.

EQUITY, HEALTH, & CLIMATE

Climate change disproportionately affects people with fewer resources. From acute emergencies like power outages and flood damage to homes, to more indirect impacts like volatile energy costs and a rise in diseases like Lyme, climate change influences human health and wellbeing in many ways.

OUR PROGRESS

- Yarmouth Community Garden is the largest community garden contributor to Maine Harvest for Hunger program
- Town has CodeRED, a high speed emergency notification system
- Yarmouth Police Department offer a Reassurance Program of wellbeing checks to senior citizens, adults living alone, the infirm, or the disabled within our community

BY THE NUMBERS

25%

of Yarmouth adults over 65 live alone[26]

38.4%

of total households are cost burdened (spend more than 30% of income on housing)[27]

Yarmouth can expect

20–30

more days each year of high heat (over 90 degrees) by 2050[28]

ACTION TABLE

The Yarmouth Climate Action Plan establishes the following goals, strategies, and actions for Connected and Safe Community.

Quick Win: Short-term actions that have the potential to maintain implementation momentum

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	Quick Win or High Impact	Impact Type	Target Served
Goal 8: Protect public safety by integrating climate projections into emergency preparedness protocols.			
Strategy 8.1: Enhance the community's preparedness for heat waves and intensifying storms.			
8.1.1: Develop a local Hazard Mitigation and Heat Wave Management Plan and implement protocols that address disasters such as intense storms, heat waves, and extended power outages.	High Impact	A	R
8.1.2: Enhance early warning systems and community evacuation plans.		A	R
8.1.3: Map town services to identify potential gaps in access for all, especially underrepresented populations.		A	R
8.1.4: Assess town-owned open spaces and waterways for capacity for increased use during more high heat days, and plan for safe and equitable access.		A	R
Strategy 8.2: Plan for the impact of sea level rise and flooding.			
8.2.1: Complete the Maine Flood Resilience Checklist and develop an implementation plan to reduce impacts from sea level rise, riverine flooding, and runoff from impervious surfaces.		A	R
8.2.2: Revise the floodplain management ordinance to incorporate the anticipated FEMA maps and ensure additional adjustments account for climate change.	Quick Win	M	R
8.2.3: Develop a Working Waterfront Strategic Plan to assess needs for supporting coastal commercial establishments in town, including practices that address climate change mitigation or adaptation.		M A	R
8.2.4: Inform residents and businesses of the potential damage from floods and sea level rise.		A	R
Strategy 8.3: Prepare for long-term viability of town drinking water supply.			
8.3.1: Collaborate with Yarmouth Water District to assess resilience of town water supply quality and quantity based on climate modeling.		A	R

ACTION TABLE

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	Quick Win or High Impact	Impact Type	Target Served
Goal 9: Enhance public health to improve community resilience to climate change.			
Strategy 9.1: Pursue equitable access to resources on climate-related health risks.			
9.1.1: Cultivate neighborhood hubs to share climate, energy, and resilience resources, utilizing a similar neighborhood model that was in response to the COVID-19 pandemic.		A	R
9.1.2: Develop a community atlas for town organizations and resources, including resilience resources, adaptation tools, and public health and safety information.	Quick Win	A	R
9.1.3: Launch a campaign to educate residents on impacts of climate change to mental and physical health.	Quick Win	A	R
9.1.4: Partner with local health and wellness service providers, including educators, to promote access to resources that address chronic stressors, including mental health services.		A	R
Strategy 9.2: Promote local food production and consumption.			
9.2.1: Adopt policies that help preserve existing agriculture operations, facilitate new food production, and support local food distribution systems.		A	R
Strategy 9.3: Improve access for Yarmouth residents to open space.			
9.3.1: Complete mapping analysis to identify residents further than a ten-minute walk from green space (public lands, conserved areas, parks, etc.) and integrate into land use planning.		A	R
Goal 10: Protect critical infrastructure.			
Strategy 10.1 Evaluate and improve at-risk public infrastructure.			
10.1.1: Conduct a vulnerability impact assessment incorporating projected climate impacts for at-risk public works infrastructure (e.g. water, sewer, culverts, roads, bridges) then develop priorities for investment.		A	R
10.1.2: Follow the CoastWise manual guidelines for evaluating, designing and replacing climate-resilient tidal crossings.		A	R
10.1.3: Assess public waterfront infrastructure and town-owned shorelines for vulnerability to sea level rise projections and incorporate appropriate upgrades into capital strategies.		A	R

The associated metrics in the Scorecard represent the data we will track in the coming years to measure progress on these strategies. There is an Implementation Blueprint developed for action 8.2.3.

FUNDING OPPORTUNITY EXAMPLES

There is federal, state, and local funding available to finance climate action projects which can help Yarmouth implement this Plan. Below are examples of funding opportunities.

FEMA BRIC and Hazard Mitigation Grants for projects that reduce risks from disasters

Shore and Harbor Planning Grants for resilient waterfront infrastructure

Coastal Community Grants for coastal resilience and marine economy

Maine Infrastructure Adaptation Fund to adapt critical infrastructure to reduce vulnerability to climate change

Be Part of the Solution

1. Donate or get involved with Yarmouth Cares about Neighbors (YCAN).
2. Learn more about how climate change impacts health and wellbeing.
3. Sign up to receive CodeRED town alerts during a local emergency.

LEADING BY EXAMPLE

During the height of the COVID-19 pandemic, the Town organized a network of neighborhood "community hubs" to share information and resources to residents. This is a successful model for how we can leverage community connections to enhance resilience, keep people safe, and adapt quickly in emergencies.

Photo credit Molly Haley

Moving Forward to Implementation

This Climate Action Plan will be a dynamic, living document that will evolve with Yarmouth.

To successfully accomplish strategies outlined in this Plan, Town staff, stakeholders, and the wider community will need to actively lead its implementation. This Climate Action Plan is not meant to sit on a shelf, but to be integrated into annual work plans, capital budgets, decision making processes, and regional collaborations. The following sections address key elements for implementation, such as resources and roles, the importance of tracking and sharing progress, maximizing collaboration opportunities, building capacity, and aligning with State and regional efforts.

Establish Structure and Roles for Implementation

Restructure the existing Committee for Energy Efficiency and Sustainability (CEES) to focus on implementing the Climate Action Plan. Institutionalize the role of student representatives and include a diversity of voices.

Hire a full time Sustainability Director and build on the positive staff collaboration with Freeport and consider additional partnerships to launch a regional sustainability team to implement collective climate action. A complete team shared with neighboring towns would oversee existing and future climate programs, implement comprehensive outreach on climate-related topics, integrate within regional partnerships, and maximize applications and administration of grant funding.

Track and Share Progress

This Plan is a framework for the Town to implement, refine, and update over the years. To facilitate implementation, each goal is associated with metrics of success. Metrics and other progress updates will be shared and celebrated to foster a culture of civic engagement.

Track progress on key metrics annually and present them to the Town Council to inform the annual budget cycle.

Conduct a deeper review of the plan, including GHG Inventory, every 3 years in order to increase attention to areas that are falling short. Strategies and actions will be revised where context, technology, funding opportunities, or community priorities have changed in order to strengthen the plan's ability to guide the Town Council toward meeting the 2030 and 2050 targets.

Maximize Internal Collaboration

The Town's ability to implement actions in this Plan will require coordination and joint responsibility across Town departments and volunteer resident committees. Consistent and proactive collaboration among these stakeholders will be necessary for success.

- Continue and expand municipal alignment with the School Department and School Board to pursue 2030 emissions goals and support broader school engagement with climate action.
- Develop a structure for liaisons across departments and committees/boards to regularly collaborate on climate actions.
- Empower new voices to be part of implementation. Town leadership can help bring together a wide-range of internal Town stakeholders to move projects forward.

Meeting the challenge of climate change through civic engagement and partnership.

Build Regional Partnerships

Meeting both Town and State climate goals will require strong regional collaboration. Yarmouth can share successes and challenges, learn from our neighbors, and explore regional or public-private partnerships to move actions forward. The Town should continue integrating into regional projects, adopt policies to support regional and state priorities, and rely on updated State data, assessments, and analysis, including work of the Maine Climate Council (MCC).

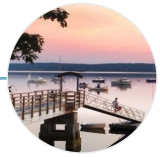
In 2024, the MCC is beginning work to update Maine Won't Wait - Maine's Climate Action Plan.

Build Capacity with Resources and Education

The full implementation of this plan is contingent upon the support of Yarmouth residents and businesses. Certain actions in this plan necessitate that Yarmouth community members adopt new behaviors and adjust to new policies, which will impact their daily lives. The Town recognizes the challenges that these transitions may present and is dedicated to empowering our community with education and resources where possible to make this process smoother. The actions within this Plan identify a few areas where the Town can provide information, connection to external resources, or, in some cases, financial incentives, to support the transition.

Center Equity and Inclusion Throughout Implementation

As core values of the Town and this Plan, equity and inclusion will be prioritized throughout implementation. This means that before implementing new policies, projects, or budget proposals, the Town will carefully assess who may be affected, how stakeholders can provide feedback, and what measures can be taken to help rectify existing inequalities. This includes partnering with local Indigenous organizations, youth groups, and YCARE to include their perspectives for planning and implementation.



Ensure a Financially Responsible Approach

To meet our 2030 and 2050 targets, we will need to make consistent progress, adapt to new solutions, and maximize external funding sources. To ensure that the Town continues to be a responsible steward of taxpayer dollars, the Town will:

- Employ a strategic approach to implement actions when it's both technologically and economically feasible, taking into account the long-term costs of inaction.
- Optimize maintenance as an opportunity to enhance efficiency, resilience and sustainability of municipal buildings, vehicles, and infrastructure.

Leverage Implementation Blueprints

To aid Town staff and committees in implementing the plan, YCAT developed Implementation Blueprints for selected priority actions. These blueprints detail the specific steps that will be taken to implement the action, and they identify lead entities, external partners, funding opportunities, and equity considerations. The Town can continue to use this template for developing work plans for the remaining actions.

Funding this Plan

We know that fully implementing this Plan will be an investment for the Town. We don't want this Plan to cause undue burden to residents and businesses—so implementation decisions must consider match funding from federal, state, and private sources, low-cost financing, and other financial tools that limit impact to taxpayers while supporting necessary investments, such as:

Green bonds are a type of bond that raises funds specifically for environmental, water, or clean energy projects. They often don't necessitate new legislation and are usually tax-exempt.

Impact Investing refers to attracting investments from individuals or organizations seeking both financial returns and positive environmental impact by investing in municipal climate projects.

Energy Performance Contracts offer a way to partner with energy service companies to implement energy efficiency measures with guaranteed savings over time.

A first step the Town could take is to conduct an assessment of the potential financial impact to the Town's tax revenue from projected climate hazards, such as damaging storms and coastal property devaluation. Understanding this information can help Town leadership, and the community, make decisions based on the real cost of inaction.

Tax Increment Financing (TIF) could be employed touse tax revenues generated from increased property values within designated districts to fund economic development focused climate projects.

Public-Private Partnerships (PPPs) can be leveraged by collaborating with private entities to jointly finance and implement climate projects.

Revolving Loan Funds can be used to establish funds that provide low-interest loans to support climate projects, with repayments recycled into future products.

IMPLEMENTATION TABLE

The following table includes all actions in the Plan and is intended to support implementation planning by the Town Council and the relevant Town staff and committees.

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Complete-by Timeframe: Short (2024-2026) Medium (2027-2030) Long (2031-2050)

Sector: Action primarily impacts the Residential (R), Commercial (C), Schools (S), or Municipal (M) sector

Cost: $ - $$$ indicates level of estimated relative municipal capital required to implement the action

Roles: Primary lead entity (P) and support entity (S) for implementation

Connection to Comprehensive Plan: Indicates action is aligned with outcomes of Yarmouth's updated Comprehensive Plan

	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Goal 1: Reduce emissions from transportation							
Strategy 1.1: Expand infrastructure for accessible and safe walking, biking, and other active transportation.							
Action 1.1.1: Complete a comprehensive, town-wide transportation planning process, resulting in an adopted implementation plan that includes non-motorized trail expansion, increased bike/walk infrastructure, and changes in parking requirements that incentivize active transportation.	M A	2050	Med	M	$	Planning Department (P) Bike/Ped Committee (S	●
Action 1.1.2: Facilitate the completion of the Beth Condon Memorial Pathway from Cumberland to Freeport and the Casco Bay Trail.	M	2050	Long	M	$$$	Planning Department (P) DPW (P) Town Management (P) Bike/Ped Committee (S) Maine DOT (S) Casco Bay Trail Alliance (S)	●
Strategy 1.2: Increase public transit use.							
Action 1.2.1: Expand public transportation infrastructure, integrated with bike and pedestrian routes, to increase frequency, accessibility, desirability, and connectivity of public transport options.	M	2050	Long	R, C, S	$	Town Management (P) Planning Department (SP) Bike/Ped Committee (S)	●
Action 1.2.2: Provide information for residents to reduce miles traveled for work and recreation.	M	2050	Short	R, C, S	$	EDAB (P) Climate Action Implementation Committee/ CEES (S)	●
Strategy 1.3: Accelerate electric vehicle adoption.							
Action 1.3.1: Establish a comprehensive EV outreach and education campaign for residents and local businesses.	M	2030 C	Short	R, C	$	Climate Action Implementation Committee/ CEES (P) EDAB (S)	
Action 1.3.2: Establish a municipal electrical vehicle procurement plan that phases out purchases of fossil-fuel based vehicles by 2030, starting with passenger vehicles and moving to medium- and heavy-duty vehicles as feasible across departments.	M	2030 M	Short	M	$$	Town Management (P) CEES (S)	
Action 1.3.3: Partner with the School Department to transition school bus fleet to all-electric.	M	2030 M	Med	S	$	School Department (P) Climate Action Implementation Committee/ CEES (S)	
Action 1.3.4: Continue building out EV charging infrastructure on town and school properties to ensure charging capacity for an entirely electric fleet.	M	2030 M	Med	M	$	Town Management (P) Climate Action Implementation Committee/ CEES (S) Town Engineer (S)	
Strategy 1.4: Expand public EV charging network.							
Action 1.4.1: Expand EV charger requirement for parking lots and new site proposals to all zones in town.	M	2030 C	Short	C, R	-	Climate Action Implementation Committee/ CEES (S) EDAB (S) Town Council (S) Planning Board (S)	
Action 1.4.2: Facilitate expansion of regional EV charging network with businesses.	M	2030 C	Med	C	-	EDAB (P) Climate Action Implementation Committee/ CEES (S)	

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	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Goal 2: Plan for future land use that reduces emissions and is resilient to climate impacts.							
Strategy 2.1: Strengthen policies and enforcement to promote sustainable, resilient, and accessible land use practices in coordination with Comprehensive Plan implementation.							
Action 2.1.1: Amend zoning ordinances to reduce emissions by allowing for more dense, mixed-use areas close to transit and economic centers, and prioritizing adaptive reuse of existing buildings.	M	2050	Short	R, C	-	Planning Department (P) Town Council (P) Planning Board (P)	●
Action 2.1.2: Establish criteria in subdivision, site plan, and Character-based Development Code to incorporate current climate data and manage adherence to land protection and stewardship goals.	A	R	Short	R, C	-	Planning Department (P) Climate Action Implementation Committee/ CEES (S) Planning Board (S) Town Council (S)	●
Strategy 2.2: Increase tree canopy.							
Action 2.2.1: Assess current tree canopy cover and ensure resources for increasing cover by planting and maintaining climate-resilient species.	M	2050	Short	M	$	YCS/ Tree Warden (P) Tree Advisory Committee (S)	●
Action 2.2.2: Establish zoning ordinance and/or incentives that serve to protect mature trees and reduce lot clearing.	M	2050	Short	R, C	-	Tree Advisory Committee (P) Planning Department (S) Codes (S) Tree Warden (S)	
Strategy 2.3: Support restoration of riverine and coastal ecosystems.							
Action 2.3.1: Restore the ecological function of the Royal River by removing all barriers, taking into consideration the river restoration feasibility study by the Army Corps of Engineers.	A	R	Med	M	$$$	Town Management (P)	●
Action 2.3.2: Review the Royal River Corridor Plan (2009) and expand and update the Plan with a focus on climate resilience.	A	R	Short	M	-	YCS/ (P) Parks and Lands (S) Tree Advisory Committee (S)	●
Action 2.3.3: Promote guidance for protection/restoration of erodable bluffs, steep slopes, and shorelines using nature-based-solutions (regrading, tree-planting, retreat) for both private and town-owned lands.	A	R	Short	R, C	-	YCS/ (SP) Planning Department (S) Codes (S) Climate Action Implementation Committee/ CEES (PS) Tree Advisory Committee (S)	●
Action 2.3.4: Amend zoning to increase shoreline setbacks for freshwater and saltwater areas while encouraging low-impact development, in consultation with DEP as applicable.	A	R	Med	R, C	-	Planning Department (P) Climate Action Implementation Committee/ CEES (P) Codes (S) Planning Board (S) Town Council (S)	●
Goal 3: Reduce emissions from buildings while making homes and businesses resilient to climate change.							
Strategy 3.1: Actively promote weatherization, efficiency, electrification, and other emission-reducing upgrades in existing buildings.							
Action 3.1.1: Adopt a Commercial PACE ordinance and develop materials to support use of residential and commercial programs.	M	2050	Short	C	-	Climate Action Implementation Committee/ CEES (P) EDAB (S)	
Action 3.1.2: Phase in an Energy Benchmarking Ordinance for large commercial, residential, and municipal and school facilities that begins with a pilot benchmarking program with businesses.	M	2050	Short	C, M	$	Climate Action Implementation Committee/ CEES (P) EDAB (S)	
Action 3.1.3: Review and update the Yarmouth Historic Preservation Advisory Ordinance to include tools, policies, and incentives that retain embodied carbon and increase energy efficiency in historic building rehabilitations.	M	2050	Short	R, C	-	Historic Preservation Committee (P) Climate Action Implementation Committee/ CEES (S)	●
Action 3.1.4: Continue and expand Efficiency Yarmouth as a resource for residents.	M A	2050	Short	R	$	Climate Action Implementation Committee/ CEES (S)	

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	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Strategy 3.2: Require new construction and major renovations to meet the highest standards for efficiency, carbon neutrality, and climate resilience by 2030.							
Action 3.2.1: Require and support new development and major renovations (including municipal and school) to be powered by renewable energy and climate resilient from 2030 on.	M A	2050	Short	R, C	$	Climate Action Implementation Committee/ CEES (P) Town Council (S) Codes (S)	
Action 3.2.2: Adopt the optional Maine Energy Stretch code IECC 2021 and advocate with the State for advancing energy codes in the future.	M	2050	Short	R, C	-	Town Management (P) Climate Action Implementation Committee/ CEES (P) Codes Department (S)	
Action 3.2.3: Integrate renewable energy and efficiency in affordable housing developments, with a focus on reducing housing costs for tenants.	M	2050	Short	S	-	Climate Action Implementation Committee/ CEES (P) Town Council (P) Planning Board (P) Affordable Housing Committee (S)	
Strategy 3.3: Adapt municipal and school buildings to climate resilient, zero emission facilities.							
Action 3.3.1: Develop and fund a plan for all school and municipal facilities to maximize energy efficiency and be powered by renewable energy by 2030.	M	2030 M	Short	S,M	$$$	Town Engineer and School Superintendent (P) Town Management (P) Climate Action Implementation Committee/ CEES (S)	
Action 3.3.2: Explore adopting a Carbon Shadow Price for addressing emissions produced through municipal capital investments.	M	2030 M	Med	S,M	-	Town Management (P) Climate Action Implementation Committee/ CEES (S)	
Goal 4: Meet 100% of electricity needs with renewable energy.							
Strategy 4.1: Foster development of reliable local renewable energy systems.							
Action 4.1.1: Require all new large developments (commercial, residential, or municipal) to evaluate feasibility of district energy or microgrids powered by renewable energy.	M A	R	Med	R, C, S, M	-	Climate Action Implementation Committee/CEES (P) Town Council (P) Planning Board (P)	
Action 4.1.2: Develop and implement a Resilient Power Plan to ensure critical facilities in town have renewable backup power.	A	R	Med	M, S	$	Town Engineer (P)	
Strategy 4.2: Reduce barriers to implementing renewable energy.							
Action 4.2.1: Remove barriers in zoning/permitting of renewable energy generation and storage systems, such as implementing policies and practices necessary to achieve SolSmart Gold level certification (or equivalent).	M	2050	Short	R, C	-	Planning Department (P) Codes (P) EDAB (S) Climate Action Implementation Committee/CEES (S)	●
Action 4.2.2: Develop, incentivize and celebrate local renewable energy generation and storage.	M A	2030 C	Short	R, C, M	$	Climate Action Implementation Committee/ CEES (P)	
Action 4.2.3: Provide and maintain publicly available resources for residents to facilitate renewable energy adoption.	M	2030 C	Short	R	-	Climate Action Implementation Committee/ CEES (P)	
Action 4.2.4: Develop requirements and design guidance for on-site renewable energy generation and electrification in new construction and major renovations.	M	2050	Med	R, C, S, M	-	Climate Action Implementation Committee /CEES (P) Planning Department (S) Town Council (S) Planning Board (S) Planning Department (P) Climate Action Implementation Committee/ CEES (S)	
Action 4.2.5: Advocate to position the Wyman station facility to support the town's climate action goals.	M A	2050	Short	M	-	Town Management (P) Climate Action Implementation Committee/ CEES (S) EDAB (S)	

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Connection to Comprehensive Plan: Indicates action is aligned with outcomes of Yarmouth's updated Comprehensive Plan

	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Strategy 4.3: Pursue 100% renewable energy reliance for government operations.							
Action 4.3.1: Build upon current Municipal and School Power Purchase Agreement to meet 100% of current and forecasted electricity needs with renewable energy.	M	2030 M	Med	M	-	Town Management (P) Climate Action Implementation Committee/ CEES (S) School Superintendent/ Facilities (S)	
Goal 5: Reduce community waste.							
Strategy 5.1: Minimize waste and prioritize sustainable consumption.							
Action 5.1.1: Phase out single use materials in commercial spaces by adopting single use item bans and promoting reuse systems.	M	2050	Med	C	-	Recycling Committee (P) DPW (P) EDAB (S) Climate Action Implementation Committee/ CEES (S)	
Action 5.1.2: Launch a business recognition and outreach program to provide resources for businesses to reduce waste.	M	2050	Short	C	$	Climate Action Implementation Committee/ CEES (P) EDAB (S) Recycling Committee (S)	
Action 5.1.3: Adopt a Municipal Sustainable Purchasing Policy.	M	2030 M	Short	M	-	Town Management (P) Recycling Committee (P)	
Action 5.1.4: Assess opportunities to reduce waste from town operations and facilities by tracking waste and developing a zero waste plan.	M	2030 M	Med	M	-	Recycling Committee (P) DPW (S)	
Strategy 5.2: Promote a circular resource sharing economy.							
Action 5.2.1: Develop a library of things that serves as a space to foster opportunities for residents to reuse, repair, and create items and materials.	M	2050	Short	M	$	Climate Action Implementation Committee/ CEES (P) Recycling Committee (S) YCS/Library (S) YCAN (S)	
Strategy 5.3: Expand reuse, recycling and composting infrastructure, services, and education.							
Action 5.3.1: Phase in requirements for composting at businesses and apartment buildings that promotes reuse solutions over single use bioplastics.	M A	2050	Med	R, C	-	Recycling Committee (P) DPW (P) EDAB (S) Climate Action Implementation Committee/ CEES (S)	
Action 5.3.2: Require recycling in commercial and multifamily residential buildings by 2026.	A	2030 C	Short	R, C	-	Recycling Committee (P) DPW (P) EDAB (S) Climate Action Implementation Committee/ CEES (S)	
Action 5.3.3: Explore construction and demolition waste ordinances.	M A	2050	Med	M	-	Recycling Committee (P) DPW (P) EDAB (S) Climate Action Implementation Committee/ CEES (S) Historic Preservation Committee (S)	
Action 5.3.4: Enact strategies to minimize waste at Clam Festival and strive to reach zero waste event standards by 2030.	A	2030 C	Short	M	$	Chamber of Commerce (P) DPW (P) Recycling Committee (S) Climate Action Implementation Committee/ CEES (S)	

Quick Win: Short-term actions that have the potential to maintain implementation momentum

High Impact: Actions that have the potential to get us the furthest toward the Town's goals

Impact Type: Action primarily supports Mitigation (M) or Adaptation (A)

Target Served: Action primarily supports achieving the 2030 Community target of 80% reduction (2030 C), the 2030 Municipal target of net zero (2030 M), or the 2050 Community target for net zero (2050) or accelerates adaptation and resilience strategies (R)

Complete-by Timeframe: Short (2024-2026) Medium (2027-2030) Long (2031-2050)

Sector: Action primarily impacts the Residential (R), Commercial (C), Schools (S), or Municipal (M) sector

Cost: $ - $$$ indicates level of estimated relative municipal capital required to implement the action

Roles: Primary lead entity (P) and support entity (S) for implementation

Connection to Comprehensive Plan: Indicates action is aligned with outcomes of Yarmouth's updated Comprehensive Plan

	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Goal 6: Permanently conserve 30% of Yarmouth land by 2050.							
Strategy 6.1: Identify resources and build a clear process for local land conservation.							
Action 6.1.1: Assess and prioritize new conservation opportunities, using the Yarmouth Open Space Plan (2019) as a prioritization guide, with a focus on connectivity, carbon storage, habitat, and public access.	A	2030 C	Short	M	$	YCS (P) Parks and Lands (P) Tree Warden (S)	●
Action 6.1.2: Increase the Town's Land Acquisition Fund to a minimum of $1 million, funded through a Land Bond, grants, and/or annual town budget allocations.	M	2030 C	Short	M	$$	YCS (P) Town Management (S) Parks and Lands (S)	●
Action 6.1.3: Assess town-owned lands for permanent protection.	M	2030 C	Short	M	$	YCS (P) Parks and Lands (P)	
Strategy 6.2: Protect properties through purchase or easement with willing landowners, or through partnerships.							
Action 6.2.1: Utilize funds to permanently protect prioritized Town-owned lands.	M	2050	Med	M	$	YCS/ Parks and Lands (P) Town Management (S)	●
Action 6.2.2: Partner with willing landowners to permanently conserve land that sustains or enhances carbon sequestration and improves climate resiliency.	A	2050	Med	M	$	YCS (P)	●
Goal 7: Adopt stewardship practices that increase carbon storage and enhance the ecosystem's resilience to climate change.							
Strategy 7.1: Manage all town-owned Open Space for climate resilience and to maximize carbon sequestration.							
Action 7.1.1: Add sections on climate resilience and carbon storage to existing management plans for all town-owned Open Space and include these sections in plan updates moving forward.	M A	2050	Med	M	-	YCS (P) Parks and Lands (S) Tree Warden (S)	
Action 7.1.2: Develop a dedicated Stewardship Fund for Town-owned open spaces, to be funded through private and public contributions.	A	R	Med	M	$	YCS (P)	
Strategy 7.2: Manage invasive plant species.							
Action 7.2.1: Implement and update the Three-year Invasive Vegetation Management Plan to include all town and school vegetation management practices.	A	R	Short	M, S	$	YCS (P) Tree Advisory Committee (S) Parks and Lands (S) Tree Warden (S)	●
Action 7.2.2: Develop subdivision ordinance requirements for invasive species management plans.	A	R	Short	R	-	Planning Department (P) YCS/ Tree Warden (S) Tree Advisory Committee (S)	
Action 7.2.3: Incentivize invasive species management by private landowners and HOAs through education and outreach.	A	R	Short	R, C	-	YCS (P) Climate Action Implementation Committee/ CEES (S) Tree Warden (S)	
Strategy 7.3: Support sustainable landscaping by private landowners.							
Action 7.3.1: Promote resources for individual residents and business owners to engage in sustainable landscaping to absorb stormwater, protect wetlands and local ecology.	M A	R	Short	R, C, S, M	-	Climate Action Implementation Committee/ CEES (P) Tree Advisory Committee (S)	●
Action 7.3.2: Develop protective rules and incentives to reduce or eliminate ecosystem damaging fertilizer, pesticides, and toxic contaminants reaching our lands and waters.	A	R	Short	M	-	Climate Action Implementation Committee/ CEES (P) Parks and Lands (S) Tree Advisory Committee (S)	

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	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Goal 8: Protect public safety by integrating climate projections into emergency preparedness protocols.							
Strategy 8.1: Enhance the community's preparedness for heat waves and intensifying storms.							
Action 8.1.1: Develop a local Hazard Mitigation and Heat Wave Management Plan and implement protocols that address disasters such as intense storms, heat waves, and extended power outages.	A	R	Short	M	$	Police and Fire (P) Town Management (P) YCS (S)	
Action 8.1.2: Enhance early warning systems and community evacuation plans.	A	R	Med	M	$	Police and Fire (P)	
Action 8.1.3: Map town services to identify potential gaps in access for all, especially underrepresented populations.	A	R	Short	M	-	YCS (S) Police and Fire (P)	
Action 8.1.4: Assess town-owned open spaces and waterways for capacity for increased use during more high heat days, and plan for safe and equitable access	A	R	Med	M	-	YCS (S) Police and Fire (P)	
Strategy 8.2: Plan for the impact of sea level rise and flooding.							
Action 8.2.1: Complete the Maine Flood Resilience Checklist and develop an implementation plan to reduce impacts from sea level rise, riverine flooding, and runoff from impervious surfaces.	A	R	Short	M	-	Planning Department (P) Climate Action Implementation Committee/CEES (S)	
Action 8.2.2: Revise the floodplain management ordinance to incorporate the anticipated FEMA maps and ensure additional adjustments account for climate change.	A	R	Short	M	-	Planning Department (P) Codes (P) Town Engineer (P)	●
Action 8.2.3: Develop a Working Waterfront Strategic Plan to assess needs for supporting coastal commercial establishments in town, including practices that address climate change mitigation or adaptation.	M A	R	Short	C	$	EDAB (P) Harbor and Waterfront Committee (S) Shellfish Committee (S)	●
Action 8.2.4: Inform residents and businesses of the potential damage from floods and sea level rise.	A	R	Short	R, C	-	Climate Action Implementation Committee/ CEES (P)	
Strategy 8.3: Prepare for long-term viability of town drinking water supply.							
Action 8.3.1: Collaborate with Yarmouth Water District to assess resilience of town water supply quality and quantity based on climate modeling.	A	R	Med	M	-	Town Engineer (P)	●
Goal 9: Enhance public health to improve community resilience to climate change.							
Strategy 9.1: Pursue equitable access to resources on climate-related health risks.							
Action 9.1.1: Cultivate neighborhood hubs to share climate, energy, and resilience resources, utilizing a similar neighborhood model that was developed in response to the COVID-19 pandemic.	A	R	Short	R, C, M	$	YCS (P) Climate Action Implementation Committee/ CEES (S) Police and Fire (S)	
Action 9.1.2: Develop a community atlas for town organizations and resources, including resilience resources, adaptation tools, and public health and safety information.	A	R	Short	M	-	YCS (S) Climate Action Implementation Committee/ CEES (P) Police and Fire (S)	
Action 9.1.3: Launch a campaign to educate residents on impacts of climate change to mental and physical health.	A	R	Short	M	-	Climate Action Implementation Committee/ CEES (P) YCS (S) Police/ PSAC (S)	●
Action 9.1.4: Partner with local health and wellness service providers, including educators, to promote access to resources that address chronic stressors, including mental health services.	A	R	Short	M	-	Climate Action Implementation Committee/ CEES (P) YCS (S) Police/ PSAC (S) Schools (S)	

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Cost: $ - $$$ indicates level of estimated relative municipal capital required to implement the action

Roles: Primary lead entity (P) and support entity (S) for implementation

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	Impact Type	Target Served	Complete By	Sector	Cost	Roles	Comp Plan
Strategy 9.2: Promote local food production and consumption.							
Action 9.2.1: Adopt policies that help preserve existing agriculture operations, facilitate new food production, and support local food distribution systems.	A	R	Med	C	$	Economic Development (P) Planning Department (P) YCS (S)	●
Strategy 9.3: Improve access for Yarmouth residents to open space.							
Action 9.3.1: Complete mapping analysis to identify residents further than a ten-minute walk from green space (public lands, conserved areas, parks, etc.) and integrate into land use planning.	A	R	Short	M	-	YCS/ Parks and Lands (P) Planning Department (S)	●
Goal 10: Protect critical infrastructure.							
Strategy 10.1: Evaluate and improve at-risk public infrastructure.							
Action 10.1.1: Conduct a vulnerability impact assessment incorporating projected climate impacts for at-risk public works infrastructure (e.g. water, sewer, culverts, roads, bridges) then develop priorities for investment.	A	R	Short	M	$	Town Engineer (P) Climate Action Implementation Committee / CEES (S)	●
Action 10.1.2: Follow the CoastWise manual guidelines for evaluating, designing and replacing climate-resilient tidal crossings.	A	R	Med	M	$	Town Engineer (P)	●
Action 10.1.3: Assess public waterfront infrastructure and town-owned shorelines for vulnerability to sea level rise projections and incorporate appropriate upgrades into capital strategies.	A	R	Short	M	$	Town Engineer (S) Harbormaster (P) Harbor and Waterfront Committee (S)	●

METRIC TRACKING SCORECARD

Goal 1: Reduce emissions from transportation

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
Emissions (MTCO2e) from on-road light duty and medium/ heavy duty vehicles	42,319 MTCO2e (2019)	10,942 MTCO2e	5,368 MTCO2e	<20 MTCO2e	GHG Inventory Update
% of total appropriate roadways with bike/pedestrian infrastructure	New Metric	40%	80%	100%	Planning Department/ Department of Public Works
Feet of off road bike/ped infrastructure	New Metric	TBD	TBD	TBD	Planning Department
Vehicle Miles Traveled (VMT) by fuel type	75,265,455 gasoline 8,527,161 diesel ~0 electric (2019)	~10,000,000 gasoline ~9,000,000 diesel, ~56,000,000 electric	~5,000,000 gasoline ~4,500,000 diesel ~62,000,000 electric	~0 gasoline ~820,000 diesel ~65,000,000 electric	GHG Inventory Update / GPCOG Regional Transportation Emissions Dashboard
% of vehicles registered in Yarmouth that are electric[1] (BEV and PHEV)	2.3% of vehicles registered as electric (1.3% N= 106 BEVs and 1% N= 76 PHEVs) (2022)	10%	70%	90%	Maine DEP Vehicle Emissions and Greenhouse Gas Data / GPCOG Regional Transportation Emissions Dashboard
% of municipal fleet that is electric (BEV or PHEV)	>5%	80%	Continue EV replacement as fleet vehicles are retired (as market allows)	100%	Department Heads
# of public EV charging ports by type[2]	4 charging ports (level 2) 0 level 2 ports (2023)	TBD pending regional GPCOG EV Charging Plan development			Codes Department Permitting information / GPCOG Regional Transportation Emissions Dashboard

Goal 2: Plan for future land use that reduces emissions and is resilient to climate impacts

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% of total population located within 1/4 mile of transit	New Metric	40%	70%	90%	TBD
% tree canopy cover[3]	New Metric	Increasing or maintained trend, as determined by Tree Advisory Committee			US National Land Cover Database

Goal 3: Reduce emissions from buildings while making homes and businesses resilient to climate change

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
Emissions (MTCO2e) from residential and commercial buildings	28,433 MTCO2e residential (2019) 19,781 MTCO2e commercial (2019)	5,903 MTCO2e residential 3,778 MTCO2e commercial	5,026 MTCO2e residential 802 MTCO2e commercial	~0 MTCO2e for both sectors	GHG Inventory Update
Heat pump permits issued per year for installations in residential and commercial buildings[4]	New Metric	1,055 new residential installs (151 per year between 2024-2030) 1,750 new commercial installs (250 per year between 2034-2030)	1,340 new residential installs (67 per year between 2031 and 2050) 400 new commercial installs (20 per year between 2031 and 2050)	2,399 total new residential installs by 2050 2,150 total new commercial installs by 2050	Codes Department permitting information
% of buildings certified with ENERGYSTAR NextGen	New Metric	TBD	TBD	TBD	Codes Department/ EnergyStar
% of municipal and school buildings that are powered by renewable energy	0% (2023)	30%	50%	Continue decarbonization as municipal facilities are retrofitted/ constructed	Town Engineer and School Superintendent/Facilities

Goal 4: Meet 100% of electricity needs with renewable energy

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% of critical facilities with backup power	New Metric	40%	80%	100%	Town Engineer/ Public Safety
Additional kW solar installed in Yarmouth	New Metric	74,200 kW capacity added by 2030	13,400 kW capacity added between 2031 and 2050	87,600 kW capacity added by 2050	Codes Department Permitting process
% of municipal electricity from renewable energy sources	92%	100%	100%	100%	CEES

Goal 5: Reduce community waste

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
Emissions (MTCO2e) from municipal solid waste	6,859 MTCO2e (2019)	Decreasing trend			GHG Inventory Update
Tons of waste sent to incinerator from transfer station (MSW) or curbside (private haulers)[5]	447 tons transfer station 186 tons Curbside (2023)	Decreasing trend			Department of Public Works
# of items loaned out through community sharing libraries	New Metric	Increasing trend			TBD
% diversion rate (recycling & composting broken out)	33.7% (2019)	50%[6]	Increasing trend		Department of Public Works

Goal 6: Permanently conserve 30% of Yarmouth land by 2050

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% of land permanently conserved (and total acres)	4% (354 acres)	10%	20%	30%	Maine DEP, Maine Inland Fisheries and Wildlife
Total funds ($) Land Acquisition Fund	New Metric	$1 million	Adjusted as necessary to acquire land as recommended by Parks and Community Services		Yarmouth Community Services

Goal 7: Adopt stewardship practices that increase carbon storage and enhance the ecosystem's resilience to climate change.

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
Sequestration rate of town-owned lands	New Metric	TBD as recommended following assessment and analysis			TBD
% of town Open Space management plans updated	New Metric	80%	100%	Maintain 100%	Yarmouth Community Services
% of acres in town with invasive vegetation	New Metric	Reach and maintain as close to 0% as possible			TBD
% of stream crossings listed as barrier or potential barrier to fish and wildlife[7]	59% (N=16) potential barrier 26% (N=7) barrier. 27 total (2023)	Decreasing trend			Maine Stream Habitat Viewer

Goal 8: Protect public safety by integrating climate projections into emergency preparedness protocols

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% residents with access to cooling/ warming centers[8]	New Metric	60%	100%	100%	Yarmouth Police Public Safety / Community Services

Goal 9: Enhance public health to improve community resilience to climate change

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% of households that received information on how to build resilience/climate health risks and resources	New Metric	100%	Maintain continuous outreach to all households and community members.		TBD
% residents within 10-minute walk of a park	45%	60%	100%	100%	Trust for Public Land's ParkScore

Goal 10: Protect critical infrastructure

Metric	Baseline Data (year)	2030 Target	2040 Target	2050 Target	Anticipated Data Source
% of critical infrastructure evaluated at high risk	New Metric	Decreasing trend, as close to 0% as possible			Department of Public Works/ Town Engineer

1. Data from Maine Department of Environment Protection Vehicle Emissions and Greenhouse Gas Data, 2023. Note: It is also recommended that a process be developed to track the total number of non-public EV charging ports installed by location type (business, multifamily, residence).
2. Efficiency Maine EV Charging Station Locator Tool. Note: Ports are individual plugs, there can be multiple 'plugs' at a pedestal.
3. National Land Cover Database
4. As electrification technology evolves, it may be more accurate to track the percentage of homes using electricity for heating. Currently, 8.8% of Yarmouth homes are heated with electricity (or solar) as reported by the US Census American Community Survey.
5. Data reported from Director of Public Works
6. The State of Maine aims to achieve a 50% diversion rate of MSW and decrease waste per capita.
7. Maine Stream Habitat Viewer

EFFICIENT TRANSPORTATION AND LAND USE

ACTION

1.3.1

Establish a comprehensive EV outreach and education campaign for residents and local businesses.

Goal 1 Reduce emissions from transportation.

Strategy 1.3 Accelerate electric vehicle adoption.

Description of Action The municipality can play a role in supporting the electrification of transportation, in alignment with State and national goals, and outreach is critical for the success (and acceleration) of this transition. Developing a robust program of events and consistent, varied outreach and educational resources will inform residents and businesses on how to lease or purchase electric vehicles and support community EV adoption.

Impact Type
- ● Mitigation
- ○ Adaptation

Town Roles (Primary And Support) Climate Action Plan Implementation Committee/ CEES (P)
Economic Development Advisory Board (S)

Town Resolution Target This Action Serves
- ○ Municipal 2030 Net Zero
- ● Community 80% Reduction by 2030
- ○ Community 2050 Net Zero

Alignment With Other Initiatives Maine Clean Transportation Roadmap to 2050. **Maine Won't Wait' Climate Plan** includes a goal of having 219,000 electric vehicles in Maine by 2030 (as of the end of 2023, Maine had 12,369 electric vehicles, up from 4,268 in 2020).

Sector
- ● Residential
- ● Commercial
- ○ Schools
- ○ Municipal

Partners Efficiency Maine
GPCOG
National Drive Electric Week

Relative Cost $ - to develop and distribute materials

Complete By Short (2024-2026)

Proposed Implementation Steps	Partners
1. Identify and convene a project team with expertise in hosting community events and a passion for decarbonization. Determine the scope of outreach, budget needed, and roles for internal and external partners.	Climate Action Implementation Committee /CEES
2. Review the Maine Clean Transportation Roadmap to identify contacts and programs (beyond those below) that could support or participate in a series of EV events.	Climate Action Implementation Committee /CEES
3. Conduct research, including reaching out to Efficiency Maine, to identify current state and federal incentives and programs. Determine EMT's willingness to participate in either the project team or the events.	Climate Action Implementation Committee/ CEES, Efficiency Maine
4. Reach out to GPCOG to identify how Yarmouth can participate in the Drive Electric Maine stakeholder group, as well as what support GPCOG could provide for a series of EV-related events.	Climate Action Implementation Committee/CEES, GPCOG
5. Reach out to local car dealerships that have electric vehicle inventory to discuss their interest in participation and pre-existing tools they may be able to bring to these events.	Climate Action Implementation Committee/ CEES, car dealerships
6. In collaboration with all of the above stakeholders, identify all needed ancillary information on EVs, for example: • Average emissions of EVs compared to ICEs (in Maine Clean Transportation Roadmap) • Charger locations and likely expansion of Maine charging network (NEVI Plan) • Average costs per mile for operating an EV compared to ICEs	Project team
7. In collaboration with all of the above stakeholders, identify a manageable set of resources and tools that residents can use to learn more about EV ownership.	Project team

Proposed Implementation Steps	Partners
8. Develop a messaging plan for EV events (e.g. who is the audience we are trying to reach, what are the messages we most want to convey, and what actions do we want the audience to take). Consider utilizing existing best practices for communicating about EVs, such as this EPA toolkit. Also consider what existing 'brands' and assets can be mobilized locally to build recognition (Electrify America, etc).	Project team
9. Develop event plan for EV events including timing, location, and guest speakers. Consider planning events during National Drive Electric Week, September 27 - October 6, 2024. Create a timeline and strategy for engagement and outreach, including what resources should be developed to be repeated annually, live online, or be one-time or annual events/outreach campaigns.	Project team
10. Develop advertising plan for EV events (e.g. how will we reach target audience, who will we partner with to get our message out, can we incentivize participation).	Project team
11. Conduct events and schedule consistent outreach through Town channels (bulletin, social media, in person displays). Consider what staff or volunteer resources are necessary to sustain engagement over time. Determine a process for tracking engagement with the materials/events and set a timeline for reviewing the program and making amendments.	Project team

Equity & Inclusivity Considerations

- The content of the workshops must include information on EV incentives for low income households and considerations for residents who rent their home (and may rely on public charging or landlord/HOA limitations).
- The messaging and advertising plan must consider how to ensure participation of low income households, as well as other historically marginalized groups. The events and messaging could be coordinated with Efficiency Yarmouth communications.

GHG Reduction Considerations

- The messaging and advertising of these events should highlight the contributions of passenger vehicles to GHG emissions both at the town and state level.
- For Yarmouth, 30% of total emissions are from passenger vehicles and 12% are from commercial vehicles. When residents and businesses in Yarmouth switch to EVs, this will make a significant difference in the community's emissions.

Financial Considerations

Estimated Costs: limited costs to develop materials and host events

Anticipated town funds needed:
less than $2,000

Funding Opportunities
While there are relatively low Town funds required to complete this action, implementation can point residents/businesses to the following funding opportunities:

- Efficiency Maine rebates for individuals and businesses
- Federal tax credits for people purchasing EVs

Community Resilience Considerations

- As the number of EVs in town increases, charging infrastructure must be accessible across town and in a variety of places (public areas, businesses, multi-unit residences, etc).

Partner Roles

- The Climate Action Implementation Committee/CEES will lead this project and develop a plan for ongoing engagement. This group, in coordination with the project team, can consider making these events/resources regional by partnering with other towns.
- Efficiency Maine can be a source of information for residents and businesses and may be able to support educational events.
- GPCOG can offer a connection to other initiatives in the broader region, including upcoming transportation planning efforts.
- Local and national organizations can offer best practices, models, and resources to adapt to yarmouth. For example, the Center for an Ecology-Based Economy (CEBE) in Norway, ME hosts an annual 'Solar & EV Expo' that can be a model for Yarmouth events.

Implementation Timing

- Estimated Start Date: **May 2024**
- Milestone: 1 EV event in town by end of 2024
- Milestone: Educational materials shared with Yarmouth-based businesses and residents (and on town website) by end of 2024
- Estimated End Date: **December 2026**

HEALTHY BUILDINGS AND RENEWABLE ENERGY

ACTION

3.3.1

Develop and fund a plan to maximize energy efficiency and discontinue use of fossil fuel systems in all school and municipal facilities by 2030

Goal 3 Reduce emissions from buildings while making homes and businesses resilient to climate change.

Strategy 3.3 Adapt municipal and school buildings to climate resilient, zero emission facilities

Description of Action Energy efficiency measures have previously been taken in both municipal and public school facilities; however, reaching a municipal/school net-zero emissions target by 2030 will require an additional strategic effort that prioritizes clean energy sources. School facilities in Yarmouth account for 36% of emissions from the municipal sector (Town and school combined) so prioritizing the transition and optimization of school building energy systems will provide the biggest gain toward achieving the 2030 net-zero goal laid out in the Town's Resolution. Additionally, updating the schools systems will translate to increased energy savings, protection for the Town's budget from fluctuating fuel prices, and comfort in the face of changing climate conditions.

Impact Type
- ● Mitigation
- ● Adaptation

Town Roles (Primary And Support) Town Engineer and School Superintendent (P), School Facilities Staff (P) Climate Action Implementation Committee/CEES (S), Town Council (S), Town Manager (S), Sustainability Staff (S) School Board (S)

Town Resolution Target This Action Serves
- ● Municipal 2030 Net Zero
- ○ Community 80% Reduction by 2030
- ● Community 2050 Net Zero

Alignment With Other Initiatives Maine Won't Wait (State Climate Action Plan), Community Resilience Partnership

Sector
- ○ Residential
- ○ Commercial
- ● Schools
- ● Municipal

Partners ESCO, Efficiency Maine Commercial/Custom Program

Relative Cost $$$

Complete By Developing the plan can occur in a Short (2024-2026) timeframe and execution completed by 2030.

Proposed Implementation Steps	Partners
1. Identify Town and School representatives to lead implementation. Review existing conditions (including progress on past energy performance contracts), considerations of previous upgrades to the systems, and retrofit options. Review resources for decarbonizing municipal and school facilities from industry leaders, such as TRANE, DOE Better Buildings, or the New Buildings Institute. These actions should aim to provide a clear outline of project priorities that account for efficiency and comfort uplift, initial investment, previous investments, funding options, and cost over time.	Town and school representatives, CEES,
2. Engage Town Council and Manager early in the process to align on emission reduction goals and get consensus on the direction, scope, and objectives of this effort - including scale of estimated funding required and potential timeline as it relates to Town's net zero goal. Consider how engaging in a joint contract to develop a plan for municipal and school facilities can be cost and time effective. At this point, also consider whether it is appropriate for the School Board to adopt a Climate Action Resolution (similar to the Town's) to streamline leadership consensus on this priority, see examples.	Town and school representatives, CEES, Town Manager/ Council
3. Engage with an experienced energy service provider/ESCO and industry professionals to further refine understanding of what is involved in this effort such as potential funding sources and models.	Town and school representatives, review by CEES
4. Engage the Town Committee for Energy Efficiency and Sustainability (CEES) in development of RFP and contract. Write Request for Proposals for the transition to renewable energy/energy savings performance contract and publicize, choose vendor (ESCO) and initiate contract. Depending on the scope and funding requirements of RFP, follow procedures to acquire or allocate funding for assessment.	Town and school representatives, ESCO
5. Select vendor (ESCO) and execute assessment/audit. Review audit and action prioritization provided by the vendor partner.	Town and school
6. Report out to the Town Council/School Board and general public on results of the audit and recommendation for appropriate next steps as appropriate or required by funding status.	Town and school representatives
7. Execute the facilities project and report out on project milestones. Schedule and perform a post-project audit. Communicate successes and benefits to the school community and broader public.	Town and school representatives, ESCO

Equity & Inclusivity Considerations

- Consider including younger voices/students on relevant Committees and project teams to involve the student body and younger generations in active decision making and project implementation.
- Use this process as an opportunity to incorporate climate change and sustainability topics into the curriculum, making sure that materials are inclusive and accessible to all students. This can allow the School to demonstrate how local climate action can contribute to community, regional, and national goals for a livable future.
- Offer education and awareness campaigns/seminars/learnings to ensure that students and their families understand the importance of decarbonization efforts and why the Town and School are undertaking this effort.

GHG Reduction Considerations

- Municipal and school building and facility emissions only account for 1,133 MT CO2E (or about 1% of all community-wide emissions), however School and Town building energy use make up 50% of town/school combined emissions. Developing, funding, and executing a plan to power school and Town buildings with renewable energy is a high-impact (and necessary) step in achieving the net zero town and school operations by 2030.
- Striving to achieve net zero emissions in municipal and school buildings will allow the town and school department to "lead by example" and inspire the community to embrace solutions to transition their homes and businesses to maximize efficiency and be powered by renewable energy.

Financial Considerations

Estimated Costs:	**Funding Opportunities**
This action may require significant investment and may require a bond to fund the work or planning contract.	Efficiency Maine rebates and Municipal Lease program Community Energy Programs RENEW America's Schools (DOE) Guide for School Retrofit Funding (DOE) DOE's eProject eXpress tool can support state and local governments and K-12 schools in ESPC project management and help leverage financing to maximize impact. DOE guide for K-12 Schools Energy Performance Contracting. Initial cross could be funded through an Energy Savings Performance Contract with the ESCO partner. Other financing options may be explored at the Better Buildings Initiative. Consider designating the school(s) as an energy shelter/community centers to get priority for various funding programs.

Community Resilience Considerations

- The leadership that the School and Town demonstrate in this effort can catalyze the wider Yarmouth community to take action, not only for transitioning to renewable energy, but in other climate action and resilience strategies. This project can make the School/Town facilities eligible for national recognition such as Green Ribbon Schools and Energy Star NexGen Certification. As a mechanism for civic engagement, this project (and acquired recognition) could dramatically accelerate community resilience and sustainability action.
- Ensuring that the transition to clean energy sources and sustainable practices includes measures to strengthen infrastructure against climate-related threats, such as extreme weather events, power outages, and unstable fuel prices.

Partner Roles

- The Town Engineer and School Superintendent (and other key staff) will lead the project team and external partners to develop an RFP and facilitate the assessment/contract. They will also lead the consultation with leadership, including the School Board and Town Council, collaboration with internal support entities and other stakeholders.
- The Town Council will provide direction to the project team as it relates to the town budget (for needed funding) and the Town's climate goals and long-term priorities.
- The Town Manager and School Board will support the project leaders to facilitate general engagement and advise decision making.
- CEES (and relevant School counterparts such as facilities staff) will provide support for scoping, RFP development, engagement, and project execution.
- ESCO vendor/Efficiency Maine will provide initial consultation and support financing mechanisms. ESCO/vendor to conduct assessment/audit and further action as required in RFP.

Implementation Timing

- Estimated Start Date ___Q4 2024___
- Milestone: _____Deciding on contract targets
- Milestone: _____Issuing RFP
- Milestone: _____Audit completion
- Milestone: _____Projct kickoff
- Milestone: _____Project completion
- Milestone: _____Post-project evaluation
- Estimated End Date _____Q4 2029

CIRCULAR ECONOMY

ACTION

5.1.1

Phase out single-use materials in commercial spaces by adopting single-use item bans and promoting reuse systems.

Goal 5 Reduce community waste.

Strategy 5.1 Minimize waste and prioritize sustainable consumption.

Description of Action Much of the waste we generate comes from single-use materials, such as food and shipping packaging, and some of that single-use waste is tied to local consumption practices. Promoting systems, policies, and practices that prioritize reusing items while eliminating "single-use" goods accelerates the shift towards a circular economy and has the potential to drastically shrink the amount of trash we create and reduce greenhouse gas emissions (both locally and 'upstream'). This shift requires that we accelerate the move away from disposable goods while emphasizing systems that support reuse, refurbishment, and a general reduction of material consumption. While policies and practices above the local level are necessary to support the shift to a more circular economy, facilitating local commercial spaces to implement reuse is a critical step in reducing waste at a community scale and can lead the way to broader behavior change as it relates to sustainable consumption.

Impact Type
- ● Mitigation
- ○ Adaptation

Town Roles (Primary And Support) DPW (P) Recycling Committee (P)
EDAB (S)
Climate Action Implementation Committee/ CEES (S)

Town Resolution Target This Action Serves
- ○ Municipal 2030 Net Zero
- ○ Community 80% Reduction by 2030
- ● Community 2050 Net Zero

Alignment With Other Initiatives The State of Maine aims to achieve a 50% diversion rate of MSW and decrease waste per capita. The State's Extended Producer Responsibility law is supporting the shift away from single-use/non-recyclable packing.

Sector
- ● Residential
- ● Commercial
- ● Schools
- ○ Municipal

Partners ecomaine

Relative Cost n/a

Complete By Medium (2027-2030)

Proposed Implementation Steps	Partners
1. Collaborate with businesses, community members, and local environmental/waste reduction organizations to understand the current uses of single-use materials in commercial spaces and investigate the availability of alternative materials and existing or model reuse systems. Include considerations for food service/restaurant/grocery businesses to include specific considerations for onsite dining, takeout, and self-serve stations. Determine how the proposed policy would impact the School Department operations and ensure their inclusion in decision-making. Host workshops, meetings, or forums to gather input and address concerns. Involve key stakeholders in the decision-making process to ensure a well-rounded policy.	DPW Recycling Committee Ecomaine Climate Action Implementation Committee/CEES YHS Environmental Action Club EDAB School leadership/ identified staff
2. Create communication campaigns to span the policy development process. Develop educational campaigns to inform businesses and the public about the environmental impact of single-use materials. Emphasize the benefits of transitioning to reusable alternatives and the positive impact on the community.	DPW Recycling Committee Climate Action Implementation Committee/CEES YHS Environmental Action Club
3. Draft a comprehensive policy that includes phased bans on specific single-use materials. Consider exemptions, timelines, and enforcement mechanisms. Consider the establishment of incentives for businesses that voluntarily transition away from single-use materials and explore tax incentives, grants, recognition programs, or other forms of support to encourage compliance. Review the draft policy with stakeholders to gather feedback and make necessary adjustments.	DPW Recycling Committee EDAB Town Council
4. Consider a phased approach to item bans, starting with commonly used and easily replaceable single-use items. Set clear timelines for compliance and provide businesses with sufficient time to adjust. Encourage the adoption of reusable alternatives and systems, such as reusable containers and bags, bulk/refill buying options, and bring-your-own container options. Collaborate with businesses to implement and promote these systems, including publicizing grants available and successful business models, and technical sourcing support.	DPW Recycling Committee Town Council EDAB

Proposed Implementation Steps	Partners
5. Establish monitoring mechanisms to track compliance with the policy. Develop enforcement strategies, including penalties for non-compliance. Conduct regular inspections and audits to ensure adherence to the policy.	DPW Recycling Committee Town Council Department of Public Works/ Town Manager
6. Periodically evaluate the effectiveness of the policy. Collect data on the reduction of single-use materials, environmental impact, and community feedback. Make adjustments to the policy based on lessons learned and changing circumstances. Celebrate successes by highlighting businesses that successfully transition to reusable alternatives (recognition program as applicable). Showcase the positive environmental impact and economic benefits of the policy. Maintain ongoing communication with businesses and the public. Continue educating the community about the benefits of reduced single-use materials.	DPW Recycling Committee Town Council Department of Public Works/ Town Manager

Equity & Inclusivity Considerations

Small businesses may have a harder time adjusting to new policies that impact their operations. Ensure small businesses have significant input in policy development and access to education, resources, or incentives to support compliance.

GHG Reduction Considerations

- Emissions from processing solid waste were estimated at 6,859 MT CO2e, or 7% of the total community-wide emissions for Yarmouth. However, these calculations do not account for the full life cycle of greenhouse gas emissions generated through manufacturing, storage, and distribution of materials residents use on a daily basis.
- While recycling is a necessary strategy to reduce emissions, the primary focus should be on reducing consumption and displacing the need for single-use items. The OECD (Organisation for Economic Co-operation and Development) reports that 91% of all plastic isn't recycled at all. Instead it ends up in landfills or in the environment. Single-use plastics in particular—especially small items like straws, bags, and utensils—are traditionally hard to recycle and are often not accepted by recycling centers.

Financial Considerations

Estimated Costs/Anticipated town funds needed	Funding Opportunities
n/a - limited funds required for outreach and enforcement.	EPA Recycling Education and Outreach Grant Program to encourage recycling through education EPA Solid Waste Infrastructure for Recycling Grants for Communities to support building a circular economy

Community Resilience Considerations

- Pairing the transition away from single use materials with prioritizing a circular economy (a primary goal of the Climate Action Plan) can alleviate the burden of scarcity, supply chain disruption, and unstable and inflating costs. These benefits can support affordability and cost-savings at both a household and community scale while contributing to a more circular, self-sufficient, and resilient community.

Partner Roles

- The Recycling Committee and Department of Public Works will initiate implementation by engaging stakeholders, develop ordinance language, and facilitate role-out, enforcement, and monitoring with support from the Department of Public Works. The Committee will also lead in engagement that supports the process.
- EDAB, ecomaine, YHS Environmental Action Club, School leadership/staff, and the Climate Action Implementation Committee/CEES will provide guidance and support engagement to shape the policy.
- Town Council and the Town Manager will advise on the policy creation, adoption, implementation, and guide enforcement and monitoring.

Implementation Timing

- Estimated Start Date: **May 2024**
- Milestone - engagement with key stakeholders: September 2024
- Milestone - draft policy published for public comment: November 2024
- Milestone - draft policy adopted by Council: February 2025
- Estimated End Date: **October 2025**

THRIVING NATURAL ENVIRONMENT

ACTION

6.1.1

Assess and prioritize new conservation opportunities, using the Yarmouth Open Space Plan (2019) as a prioritization guide, with a focus on connectivity, carbon storage, habitat, and public access.

ACTION

6.2.2

Partner with willing landowners to permanently conserve land that sustains or enhances carbon sequestration and improves climate resiliency.

Goal 6 Permanently conserve 30% of Yarmouth land by 2050.

Strategy 6.1 Identify resources and build a clear process for local land conservation.

Strategy 6.2 Protect properties through purchase or easement with willing landowners, or through partnerships.

Description of Action The 2019 Yarmouth Open Space Plan provided a clear picture of high priority areas for conservation, including important wildlife habitat and rare native plant species, valuable wetlands and riparian areas, and natural areas for community-wide recreational use. That Plan developed a "1-Acre Fishnet Map" that showed the sum score of open space values generated from incorporating natural resource data and input from community meetings. This map should be reviewed and updated as Yarmouth charts its course for land conservation. Current data about the carbon sequestration value of different areas is also important to consider. Once the data has been compiled, an identified team can develop a clear vision of Yarmouth in 2050, and begin work on the steps established to reach that goal.

Impact Type
- ○ Mitigation
- ● Adaptation

Town Roles (Primary And Support) Yarmouth Community Services (P - to initiate implementation)
Parks Specialist (P), Parks and Lands Committee (P), Tree Advisory Committee (S), Climate Action Implementation Committee/CEES (S), Yarmouth Bike/Ped Committee (S); Town Planner (S); Additional Town staff member focused on land conservation (P - potential new hire)

Town Resolution Target This Action Serves
- ○ Municipal 2030 Net Zero
- ● Community 80% Reduction by 2030
- ● Community 2050 Net Zero

Alignment With Other Initiatives Yarmouth Open Space Plan (2019), Maine Won't Wait (2020), Yarmouth Comprehensive Plan (in process)

Sector
- ● Residential
- ○ Commercial
- ○ Schools
- ● Municipal

Partners Consultation may be sought from local GIS experts and other groups such as Royal River Conservation Trust, Maine Coast Heritage Trust, Maine Audubon, Wild Seed Project, Wabanaki REACH, Yarmouth High School's Environmental Action Club, Frank Knight Foundation, and Sea Meadows Foundation, among others.

Relative Cost Variable, depending on size of land parcel, the type of conservation tool used and the tax benefits for the landowner. Many parcels may qualify for matching State funding.

Complete By The work is progressive, with some parcels already identified that can be immediately entered into permanent protection (Short timeframe 2024-2026), and others which will be determined by the outcome of collaboration with local property owners and regional land trusts in a long timeframe (2027-2050).

Proposed Implementation Steps	Partners
1. Identify and convene a project team consisting of diverse community stakeholders (as described above) led by an identified Town staff member, either preexisting or a new hire. The team should include members of the above listed committees, with input from conservation groups, indigenous communities, and student organizations.	Yarmouth Community Services Parks Specialist
2. Update area maps created by the Yarmouth Open Space Task Force in 2019 to reflect recently conserved land, and identify additional high priority areas for conservation.	Members of the 2019 Open Space Task Force; GIS consultant
3. Hire GIS consultant to complete an inventory of the carbon sequestration capacity of existing conserved lands, as well as high priority lands for conservation.	Nature Conservancy of Maine; University of Maine; GIS consultant

Proposed Implementation Steps	Partners
4. Review recommendations in the 2019 Open Space Plan related to community recreation and paths/ trails, and ensure protection of these corridors through rights of way, development set asides, and conservation easements.	Members of the 2019 Open Space Task Force; GIS consultant
5. Consider how proposed conservation land can balance, and be complementary to, Open Space and Affordable Housing goals. Town leadership can work closely with advisory committees and Planning staff to determine how this balance can be operationalized. For example, while identifying land parcels for conservation, review current zoning regulations and ordinances for potential revision, to ensure residents in higher density areas have equitable access to green space and how best to protect ecological health and connectivity while meeting housing needs.	Affordable Housing Committee; Town Planner, YCS
6. Review potential for conserving the best agricultural soils in Yarmouth, through conservation and/or zoning or other ordinances.	Town Planner
7. Working with community partners, begin targeted outreach to local landowners to discuss conservation tools, incentives and benefits.	As described.

Equity & Inclusivity Considerations

- Conserving land helps ensure cleaner air and water for the community at large. Protecting open spaces for public access and recreation provides an array of mental and physical health benefits for all residents.
- Identifying areas for conservation that have significance for Indigenous people, and including educational information at those sites, helps to honor and preserve our region's history.

GHG Reduction Considerations

- Land conservation is a natural climate solution, protecting forest soils that act as a powerful carbon sink to offset emissions. It is estimated that Maine forests draw back an amount of carbon equal to 75% of the State's annual emissions.
- Based on current estimates, protecting an additional 1,533 acres of natural land in Yarmouth (to reach 30% of acres in conservation) could sequester approximately 5,500 MT GHG emissions annually. (Note: A formal carbon sequestration analysis is recommended in this Blueprint, which will help inform the conservation process.).
- Permanent land protection will prevent the inevitable higher carbon emissions and natural resource loss caused by development.
- Conserving wetlands and marshes is another important natural climate solution, which protects Yarmouth from hazardous flooding and the erosion of valuable forest soils.

Financial Considerations

Estimated Costs

Anticipated town funds needed
It is recommended in this Climate Action Plan that the Town increase its Land Acquisition Fund to a minimum of $1 million, funded through a Land Bond, grants, and/or annual town budget allocations. This will allow the Town to act when conservation opportunities arise.

Funding Opportunities
Many funding sources are available for individual projects, including Land For Maine Future Funds, Federal grants for important wetlands and/or wildlife protection, and private foundation support. Conservation easements should be considered wherever appropriate as they are more cost effective than fee acquisition. Adding a layer of permanent protection to Town open spaces may serve as a match for federal state and private funding.

Community Resilience Considerations

- Conserving land helps our community remove carbon dioxide from the air and store it through natural processes, slowing the pace of climate change.
- Climate change is causing increased flooding, sea level rise, and extreme weather events which threaten our shoreline habitats and communities. Protecting land in those areas allows for a natural progression of marsh migration and reduces the risk of destruction to businesses, homes, and roadways.
- Maintaining healthy lands and waters also protects local ecosystems, thus reducing risks to families who rely on those resources for their livelihood as costs of living continue to climb.

Partner Roles

- Yarmouth Community Services and Parks Specialist will initiate implementation and gather the project team.
- Project team will conduct the important work of reaching land conservation goals set by both Maine Won't Wait and this Climate Action Plan. The team should seek input to ensure that the data driving their decision-making is up to date.
- External collaborators can help advise as to land prioritization, and provide education and technical support to municipal groups and land owners who have acreage with conservation value.

Implementation Timing

- Estimated Start Date: **April 2023**
- Milestone: Establish clear priorities and an outreach list and strategy by 4/1/24
- Milestone: Complete 1st round of outreach efforts by 4/1/25 and initiate 3-5 important land protection projects
- Milestone: Working with local and regional partners, protect 450 acres by 2030
- Estimated End Date: **Dec 2049**

CONNECTED AND SAFE COMMUNITY

ACTION

8.2.3

Develop a Working Waterfront Strategic Plan to assess needs for supporting coastal commercial establishments in town, including practices that address climate change mitigation or adaptation.

Goal 8 Protect public safety by integrating climate projections into emergency preparedness protocols.

Strategy 8.2 Plan for the impact of sea level rise and flooding.

Description of Action Create a plan that lays out strategic steps for the economic vitality and resilience of businesses dependent on coastal lands and waters, complementary to recreational and navigational considerations. The Plan can assess current needs and conditions, analyze how climate impacts between now and 2050 will impact the businesses and the waterfront infrastructure they require, and lay out strategies to support the local working waterfront to be resilient to climate change. The data and strategies for the Plan can be grounded in existing regional, State, and Federal guidance and resources. Collaboration across the watershed in this process will strengthen a regional approach to waterfront resilience.

Impact Type
- ● Mitigation
- ● Adaptation

Town Roles (Primary And Support) Economic Development Director/ Economic Development Advisory Board (P) Harbormaster/ Harbor and Waterfront Committee (P)
Shellfish Committee (S)
Climate Action Implementation Committee/CEES (S)

Town Resolution Target This Action Serves
- ○ Municipal 2030 Net Zero
- ○ Community 80% Reduction by 2030
- ● Community 2050 Net Zero

Alignment With Other Initiatives Maine Won't Wait, Maine Coastal Program, Yarmouth Economic Development Market Analysis and Action Plan

Sector
- ○ Residential
- ● Commercial
- ○ Schools
- ○ Municipal

Partners External Planning Consultant TBD as needed
Local organizations such as GMRI, Island Institute, GPCOG
Neighboring municipalities

Relative Cost $ - funding for assessment or consultants as needed

Complete By Short (2024-2026)

Proposed Implementation Steps	Partners
1. Identify and convene a project team consisting of diverse waterfront stakeholders, key Town staff, and related local experts as needed. Determine if an external consultant is required. Identify regional, state, and federal best practices, assessments, and baseline vulnerability data to rely on, including the Vulnerability Assessment from the Climate Action Plan.	Dir. of Economic Development Harbormaster EDAB Waterfront Committee CEES (S)
2. Conducting an existing conditions assessment of the working waterfront. Understand the current uses, economic activities, and environmental conditions. Consider collaborating with neighboring municipalities to understand the regional waterfront context.	All leads and support
3. Engage in an analysis of future climate change impacts on the working waterfront. Consider factors such as sea level rise, increased storm intensity, changing ocean conditions, and other climate-related risks. Collaborate with local environmental experts and relevant agencies to gather data and insights into how these changes might affect local marine industries. Share data and collaborate with other municipalities.	All leads and support GMRI Consultant as needed CEES
4. Foster collaboration and engagement with stakeholders, including local businesses, fishermen, environmental organizations, neighboring municipalities, and community members. Gather input on their needs, concerns, and aspirations for the working waterfront. Discuss climate change considerations and how they foresee adapting to potential impacts.	All leads and support
5. Formulate strategies that enhance the resilience of the working waterfront in the face of climate change. This may include infrastructure improvements, zoning regulations, and incentives for sustainable practices. Consider incorporating green infrastructure and nature-based solutions to adapt to changing environmental conditions. Strategies can rely on existing best practices at the regional, State, and Federal level.	All leads and support Consultant as needed
6. Implement a robust monitoring system to track the success of strategies and adapt as needed. Regularly reassess climate projections and waterfront conditions, adjusting the plan accordingly. Foster ongoing communication with stakeholders to ensure that the plan remains responsive to evolving needs and challenges related to both economic development and climate change.	All leads and support

Equity & Inclusivity Considerations

- Most vulnerable businesses may be harder to reach and have less time to engage. Partnerships with organizations that work closely with this population may encourage participation.
- In Plan development, strive to include diverse perspectives and make efforts to meet individuals and businesses 'where they're at'. Aim to empower waterfront businesses in co-developing solutions and ensure community capacity to play a leadership role in implementation of decisions

GHG Reduction Considerations

- N/A

Financial Considerations

Estimated Costs:
-

Anticipated town funds needed:
TBD matching funds as needed for grants.

Funding Opportunities
Coastal Community Grants
Provides grants for municipalities to improve water quality, increase adaptation to erosion and flooding, restore coastal habitat, promote sustainable development, and enhance the coastal-dependent economy.

Shore and Harbor Planning Grants
Provide grants for shoreline access planning, waterfront and harbor planning, and efforts for resilient waterfront infrastructure.

Island Institute ShoreUp Grants
Working Waterfront Access Protection Program (not currently accepting applications)

Tax Increment Financing (TIF)

Community Resilience Considerations

- Waterfront resilience (for economic and natural purposes) is not independent of regional context. Working closely with municipalities and regional planning agencies and organizations can support a wider-reaching plan for a resilient waterfront economy.
- Climate impacts (marine species loss, sea level rise) will impact businesses differently
- Some waterfront uses (e.g., aquaculture) have potential to both enhance resilience of coastal ecosystems and grow water-based economy

Partner Roles

- Economic Development Director and Harbormaster lead the project with support from EDAB and Harborfront Committee for direction in plan development and engagement
- CEES, External consultant and/or regional resources to support in climate assessment and solution strategizing (GPCOG, GMRI, Island Institute, etc.) pulling from existing data/resources
- Other regional or neighboring community planning projects may be able to lend expertise and share data
- Consider, if relevant, partnering with neighboring communities for assessment - as some vulnerabilities may be shared and strategies may be similar. Collaborating could position the project better for grant funding. Consider municipalities being full partners in a joint/regional effort

Implementation Timing

- Estimated Start Date: **May 2024**
- Milestone: ___to be developed by project team___
- Milestone: ___to be developed by project team___
- Estimated End Date: **December 2025**

Endnotes

1. United Nations Net Zero Coalition
2. United Nations, What is Climate Change
3. Maine's Climate Future 2020 Update
4. Maine's Climate Future 2020 Update
5. Plos One Journal; Maine Public
6. Plos One Journal; Maine Public
7. Maine's Climate Future 2020 Update
8. Maine's Climate Future 2020 Update
9. Gulf of Maine, Explained: The Warming Gulf of Maine, Gulf of Maine Research Institute, 2018.
10. Maine Won't Wait, Maine Climate Council, 2020
11. IPCC, Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change, 2022.
12. ABC News, Landmark fossil fuel agreement and other key takeaways from the COP28 climate conference, 2023.
13. Maine DEP, Ninth Biennial Report on Progress Toward Greenhouse Gas Reduction Goals, 2022.
14. The State has a goal to source 80% of grid-supplied electricity from renewable sources by 2030 and 100% by 2050.
15. Camoin Associates and North Star Planning, 2023. Comprehensive Plan Update Market Analysis.
16. Quantifying the Environmental Value of Building Reuse. National Trust for Historic Preservation Research and Policy Lab.
17. Yarmouth Vulnerability Assessment, GPCOG, 2023
18. According to the United Nations, natural resource extraction and processing contribute to about half of all global greenhouse gas emissions.
19. Maine Department of Environmental Protection, Reduce, Reuse, Recycle Webpage.
20. Data from Yarmouth Department of Public Works, 2023
21. The New Reuse Economy, Upstream
22. Maine Won't Wait Annual Report, Maine Climate Council, 2023
23. Maine Won't Wait, Maine Climate Council, 2020
24. More specific estimates of carbon sequestration rates and overall carbon storage need to be completed for Yarmouth's conserved lands.
25. Yarmouth Vulnerability Assessment, GPCOG, 2023
26. Yarmouth Vulnerability Assessment, GPCOG, 2023
27. Yarmouth Vulnerability Assessment, GPCOG, 2023
28. NOAA Climate Resources