



Greater Portland Council of Governments

Climate Action Planning Process

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Project Overview

Purpose

The purpose of GPCOG's Climate Action Planning Process is to provide support, guidance, and technical assistance to the municipality in developing a climate action plan that is aligned with the local goals and visions, and the state's climate action plan [Maine Won't Wait](#).

Description

Addressing climate change involves mitigating emissions that contribute to climate change and adapting to an inevitably changing climate by building community resilience. A climate action plan requires the following:

- A baseline understanding of the level of emissions produced in a community, and
- Identifying the type and level of risk from climate hazards (sea level rise, increased precipitation and increasing heat), now and into the future.

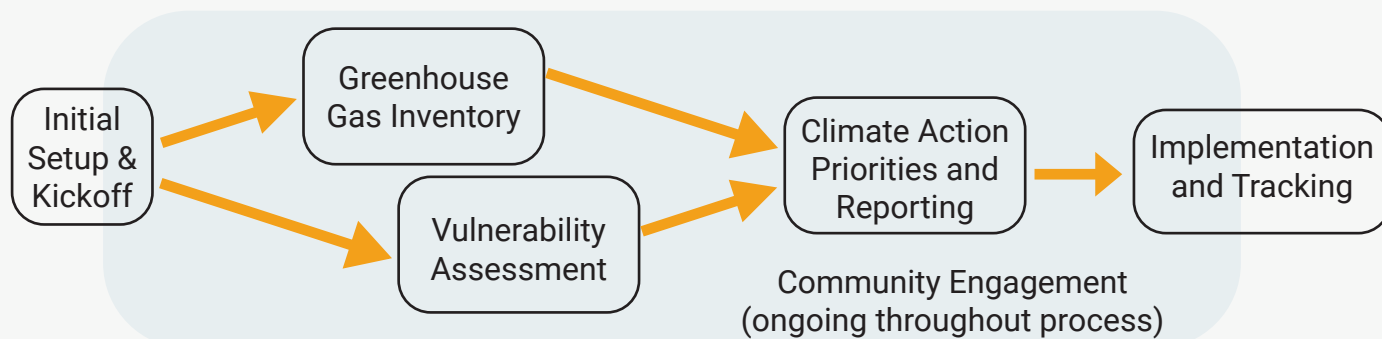
GPCOG will lead the municipality and public through the climate action planning process by analyzing climate hazards and vulnerable resources, assessing baseline greenhouse gas emissions, setting emission reduction targets, and detailing climate actions that will achieve targets. This process uses best practices created by regional, state, and national climate action planning.

Goals

The goals for the climate action planning process include:

- Increased community-wide engagement and knowledge on climate change, climate resilience and adaptation, and local climate action planning.
- Enhanced municipal ability to mitigate and adapt to climate change.
- Identification of actionable steps for the municipality to reduce greenhouse gas emissions and build resilience.
- A framework that guides implementation of the plan.

Community engagement is an essential piece of the process. GPCOG will guide the municipality in how to undertake robust community engagement throughout the process. GPCOG will focus on centering climate action planning around equity and ensuring that frontline communities - like communities of color, low-income residents, small businesses, students, tribal communities, new Mainers— marginalized people, and historically disenfranchised groups have equal opportunity to participate and equal voice in the planning process. Ensuring broad engagement is especially important since many of these people will disproportionately experience the effects of climate change. This is a chance for all residents –regardless of demographic or viewpoints—to come together to discuss how the town should best prioritize future actions.

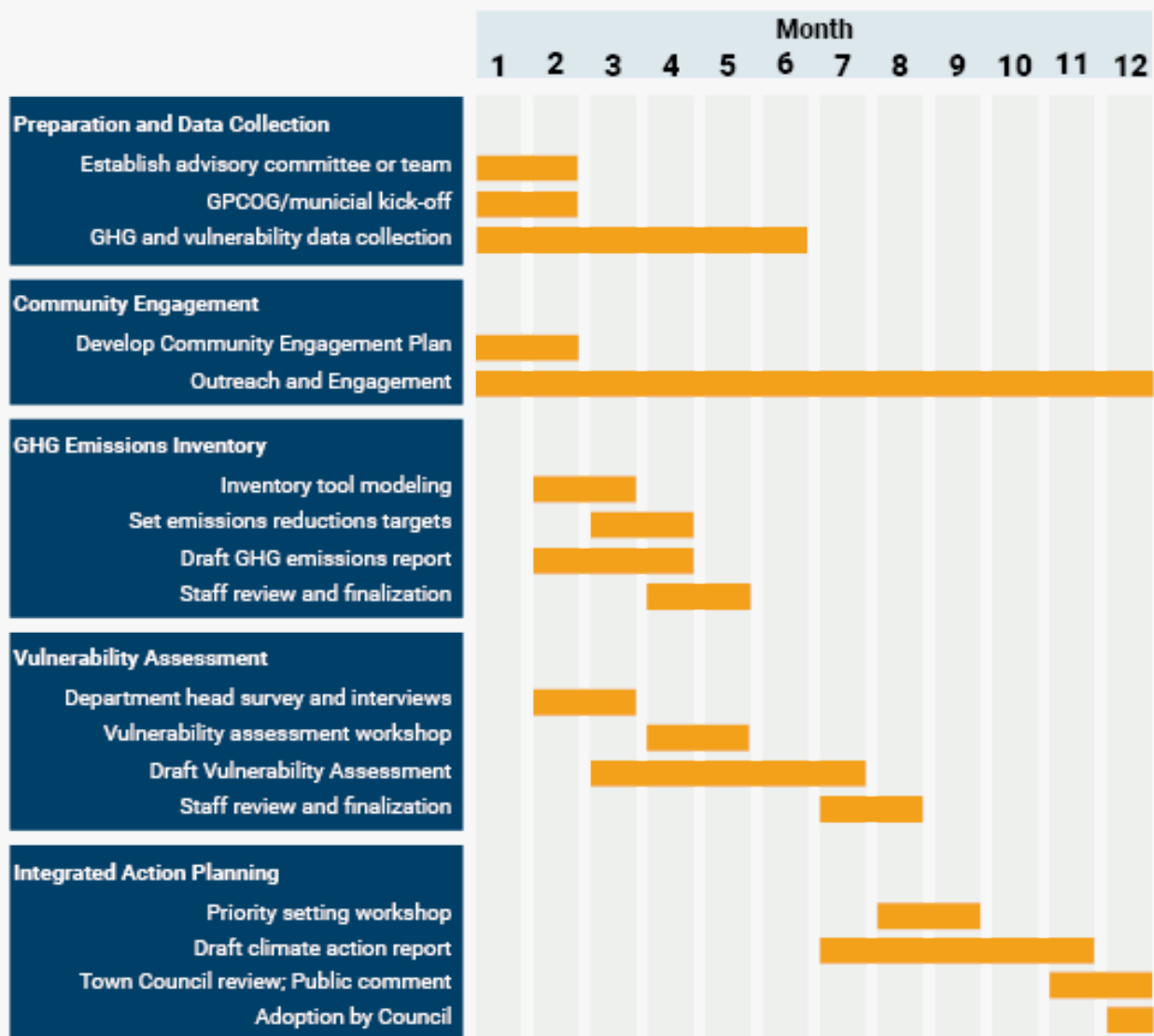


Key Milestones and Deliverables

The Climate Action Planning process takes about 12 months. The following table identifies the key milestones and deliverables for the project. The inventory and vulnerability assessment can be developed concurrently. Note that a variety of factors can impact this timeline and the project may take longer.

Milestone/Deliverable	Target Completion
Community Engagement Plan	1–2 months
Draft Greenhouse Gas Emission Inventory	3–4 months
Vulnerability Assessment	4–5 months
Draft Climate Action Priorities	3–4 months

GPCOG Climate Action Planning Process



Project Process

Initial Setup

- **Designate a committee:** The climate action planning process is extensive and requires dedicated community effort. The municipality will designate a committee to assist throughout the process. The main objectives for the committee are to provide oversight for the project, and regularly meet to provide input, review materials, and organize community outreach. The full role and responsibilities of the committee will be coordinated with municipal staff and GPCOG.
- **Staff Kick-off meeting:** GPCOG will organize and present at kick-off meeting with municipal staff and the committee to introduce the climate action planning process, discuss climate hazards and impacts, and review roles and responsibilities.
- **Department Head Input:** Municipal department heads will be vital to ensure complete collection of accurate, local information, and town resources. Early during the process GPCOG will hold one-on-one interviews with department heads to inventory key infrastructure and assets managed, discuss resources and capacity to respond to climate change, and gather input on town-wide climate vulnerabilities. These discussions will inform both the GHG Inventory and Vulnerability Assessment.

Community Engagement

GPCOG will guide the municipality to develop a Community Engagement Plan that will:

- Identify key stakeholders.
- Outline the tools and strategies the municipality will use to inform (i.e. website, newsletter, social media) and collaborate (i.e. committee, public meetings, workshops, surveys) with the public on the climate action planning process.
- Develop a suggested timeline of outreach events.

The municipality will provide planning, communications, agendas, outreach, and venues for all meetings. GPCOG will attend all community events as requested by the municipality, and present as needed. GPCOG will support the collection and analysis of community input and can provide the platform for survey collection and a project website, if requested.

Public Workshops

While community engagement should occur throughout the process, as designated by the Community Engagement Plan, GPCOG will plan to support two public workshops.

- **Baseline Setting Workshop:** This workshop, held after initial data collection is complete, is designed to get initial input from the community, and set the stage for a future discussion around specific actions and strategies. The meeting will include:
 - Sharing emission reduction targets and getting feedback. The targets would be discussed with staff and the committee prior to the workshop.
 - Allow the public opportunity to share their concerns around climate change, what broad areas they think the Climate Action Plan should focus on, and supplement existing data on vulnerable infrastructure, communities, and ecosystem.
- **Priority Setting Workshop:** This workshop, held during the second half of the process, is designed to develop action steps that addresses emission reduction targets and vulnerabilities identified in the first workshop. This workshop will gather feedback on specific strategies that town could undertake, which sections should be prioritized, what potential actions may or may not work, and touch on responsibilities.

Greenhouse Gas Emissions Inventory

GPCOG will guide the municipality in the data collection process for a municipal and community wide GHG emissions inventory and will lead inputting of data and analysis of emissions using ClearPath, an inventory tool provided to GPCOG under our ICLEI membership. The inventory development process will follow the [GHG Inventory Protocol for Southern Maine Cities and Towns](#). This will result in a GHG draft inventory report detailing emission reduction scenarios and the necessary actions needed to achieve them.

- **Data collection:** Data will be sourced from utilities, municipal staff, and other key stakeholders. GPCOG will provide a data collection plan with clear responsibilities. The municipality will be responsible for outreach to internal staff, and GPCOG will support outreach to utilities and external stakeholders to collect data.
- **Reduction targets:** An emission reduction target establishes a goal for community wide emissions that will drive the action planning phase of the process. As part of the emissions assessment GPCOG will work with the municipality to identify a community-wide emissions reduction target (Ex: 80% reduction by 2050 and 45% reduction by 2030). These targets will be presented to the public at the Baseline Setting Workshop discussed above.
- **Reporting:** GPCOG will draft a report (outline in Appendix A) and present details of the target scenario(s) and necessary actions at a meeting with municipal staff and/or with the council or board. We recommend that the council or board be presented with options and formally vote on adopting a target as part of the climate action planning process.

Vulnerability Assessment

The municipality and GPCOG will develop a vulnerability assessment to identify climate hazards and impacts to at-risk assets, communities, and ecosystems. The assessment will require data and input from all municipal department heads and consultation with key stakeholders. Existing planning documents like the comprehensive plan and the local hazard management plan will be key inputs to this process.

- **Data Collection:** The vulnerability assessment will be based on existing regional data and tools GPCOG has access to, but require municipal staff input to identify municipal assets, geographic areas, and communities that may be at risk. Demographic data will be largely based on the most-recent census data unless local data is available.
- **Mapping and Analysis:** GPCOG will map and analyze the data against projected climate hazards. For example, assessing which roads may be flooded, which areas of town have the highest social vulnerabilities, or amount of tidal marsh migration under future emission scenarios. These materials will be presented at the Baseline Setting Workshop discussed above.
- **Reporting:** The vulnerability assessment report will be a summary of all the assessment data with analysis about the highest risk assets and areas in the community. There is an outline of the report components in Appendix B.

Climate Action Planning

GPCOG will provide research support, sharing of best practices, a prioritization framework, and case studies to the municipality to facilitate planning of near and long-term climate actions that can help achieve climate targets. This phase will include a priority setting public meeting that GPCOG will help plan and facilitate to gather input on potential climate actions. GPCOG will also help facilitate 1-2 meetings with the committee as needed to gather input.

GPCOG will draft an initial list of climate actions based on input from municipal staff, the public, committees, and council (sample outline in Appendix C). This will include broad strategies and detailed action steps to achieve those strategies. The municipality will then conduct internal meetings and gather input from necessary committees and stakeholders to finalize the actions for the action plan.

Report

Throughout all phases, a complete climate action plan report will be drafted. This report will include the following:

- Introduction
- Municipal Greenhouse Gas Inventory and Community Emission Indicators
- Vulnerability Assessment
- Actions: Mitigation and Adaption
- Implementation plan and timeline
- Summary of Community Engagement

The final outline and structure of the report can vary by municipality to best suit the community vision and values. GPCOG will be responsible for first drafts and the municipality will edit and complete drafts with their input. GPCOG will provide graphic support for finalization of drafts.

Project Organization

Role	Responsibilities				
	Initial Setup	Community Engagement	Greenhouse Gas Inventory	Vulnerability Assessment	Climate Action Planning
GPCOG	<ul style="list-style-type: none">Organizing and facilitating kick-off meetingCollecting background information and materials	<ul style="list-style-type: none">Drafting initial plan and finalization after municipal input and editsAttend all community events as requested by the municipality, and present as needed.<i>If agreed upon with the municipality:</i><ul style="list-style-type: none">Create a community survey and assist in collection and analysisDevelop a project website hosted by GPCOG which will be transferred to the municipality after completion of the project	<ul style="list-style-type: none">Drafting initial report and finalization after municipal input and editsSending inventory data plan to municipality (including data request drafts)Data analysis of emissions using ClearPathShared responsibility with municipality: setting emissions reduction target	<ul style="list-style-type: none">Drafting initial report and finalization after municipal input and editsData collection on climate hazards and vulnerable assetsProvide vulnerability questionnaires to department heads	<ul style="list-style-type: none">Drafting initial report and finalization after municipal input and edits
Municipal Staff	<ul style="list-style-type: none">Designate committee and establish committee responsibilitiesPrimary facilitator for committee meetings, with assistance from GPCOGAttend kick-off meetingProvide any municipal plans, studies, or documents that might not be readily available	<ul style="list-style-type: none">Provide input and edits to community engagement plan including advising on key stakeholders, engagement strategies, and potential outreach eventsFor each meeting: provide venue, agenda, and communications and outreach (i.e. posting to social media, sending newsletter, posting to municipal website, printing flyers, etc.)	<ul style="list-style-type: none">Review and editing of draft inventory planOutreach to internal staff based on data collection plan provided by GPCOGOutreach to utilities and external stakeholders (based on drafts provided by GPCOG)Shared responsibility with GPCOG: setting emissions reduction targetCoordinating with council/selectboard on presentation and approval of emissions reduction target	<ul style="list-style-type: none">Review and editing of draft vulnerability assessmentInternal coordination with department heads to get necessary data or set up meetings (based on questionnaire provided by GPCOG)Provide input on key vulnerabilities in community	<ul style="list-style-type: none">Review and editing of draft climate action planCoordinating with department heads for discussion on implementation and key prioritiesCoordinating with council/selectboard on presentation of final plan and approval
Committee	<p>Municipal staff can designate the amount of authority the committee has on the project. Agreement will be made between municipal staff and the committee to take on any share of the municipal staff responsibilities listed above.</p> <p>Suggested responsibilities:</p> <ul style="list-style-type: none">Municipal staff will provide first read-through of all draft documents and municipal staff liaison will share to committee a final draft for review and editCommittee is responsible for setting up community engagement workshops, educational lecture series, and reaching out to stakeholders with guidance from municipal staff and GPCOG				

Appendix A:

Greenhouse Gas Emissions Inventory Report Outline

1. Executive Summary

2. Introduction

3. Community Overview

This section will provide a community overview with a community boundary map and relevant census data (population, housing, etc.) used to model community emissions.

4. Current and Past Climate Actions

This section will provide an overview of current climate action efforts happening within the community. This may include relevant land-use planning, coastal resilience projects, relevant ordinances, community/town commitments to sustainability, and more.

5. Description of a Greenhouse Gas Inventory

Example Text: A GHG inventory is a list of emission sources and the quantity of associated emissions that occur within community boundaries. It can be used as a tool for communities to:

- Determine a community's emissions footprint for informing climate action planning
- Set baseline emissions reduction targets and track GHG emissions performance
- Identify emissions reduction priority areas
- Demonstrate accountability and leadership

The goals of a GHG inventory are to provide the town with a comprehensive breakdown of the highest emitting sectors and to act as a comparison tool to measure progress in reducing GHG emissions.

6. Data Collection Process

Describes the following:

- Greenhouse Gases, sectors, scopes, tools and resources used, data challenges and limitations

7. Municipal Inventory Summary

A municipal greenhouse gas emissions inventory looks at all emissions within the stationary energy, transportation, and waste sectors under municipal jurisdiction (i.e., operated or controlled by municipal government or related to services provide by municipal government).

- Stationary Energy
- Transportation
- Waste

Sample municipal emissions chart



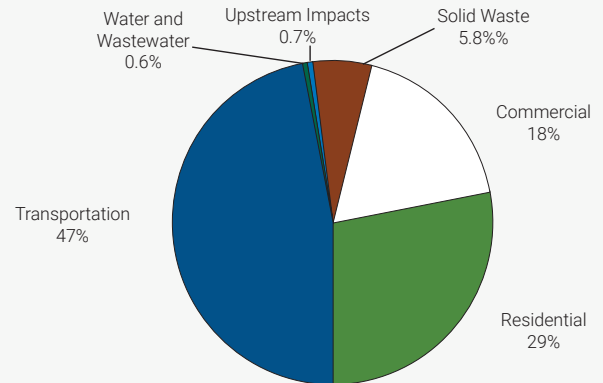
Stationary Energy Buildings & Facilities	Energy Consumption MMBTU	GHG Emissions (MT CO2e)	% of GHG Emissions
Electricity			
Natural Gas			
Distillate Fuel Oil No. 2			
Propane			
Street & Traffic Lights			
T&D Losses			
Total			

8. Community Overview

A community greenhouse gas emissions inventory looks at all emissions from the stationary energy, transportation, and waste sectors within a town's geographic boundary.

- Emissions by Sector
- Stationary Energy Use
 - » Commercial Energy Usage
 - » Residential Energy Usage
 - » Industrial Energy Usage
- Transportation and Mobile Sources
- Waste and Wastewater

Example graph of percent of emissions by category



9. Additional Indicators of Climate Action

The additional indicators section of a GHG inventory is used to track key metrics that result in lowering emission levels but are harder to quantify. This section may include educational campaigns, number of alternative fuel vehicles registered, participation in a residential composting program, number of heat pumps installed and more.

Example indicators to track for each sector:

- Stationary Energy
 - » Heat pump rebates, renewable energy, energy efficiency upgrades, etc.
- Transportation
 - » EV and hybrid vehicle registration, EV charging ports, etc.
 - » Residential Energy Usage
- Waste and Wastewater
 - » Composting programs, recycling, etc.

10. Emissions Forecasting & Reduction Targets

This emissions forecasting & reduction targets section will outline a designated municipal or community emissions reduction scenario by designated target dates. The forecasted scenarios can be existing targets already adopted by the town, or GPCOG can help set new targets based on the findings from the GHG emissions inventory and using it as the baseline report. Publicly reported GHG targets provide transparency, accountability, and credibility to the target setting process.

Based on the town adopted emissions reduction scenarios and target dates, this section will include proposed activities and metrics to hit said emission reduction targets. For example, this may include the adoption of x number of electric vehicles (EVs) by 2030, x amount of heat pump installations by 2040, and reducing community VMT by x amount by 2050.

Example emissions reduction scenarios:

- 2030 Target - 30% emissions reductions
- 2040 Target - 50% emissions reductions
- 2050 Target - 80% emissions reduction

Appendix B: Vulnerability Assessment Report Outline

1. Executive Summary

2. Introduction

Description on process and methodology for the vulnerability assessment, key terms and definitions, existing steps to community is taking to be more resilient

3. Climate Hazards

Discuss the following climate hazards, using local, regional, and state data to identify community's risk to climate change. Information includes historical data and projections (e.g., Temperatures have risen over 3° F since 1895 and are projected to increase 3.5-4° F by 2050).

- Climate change scenarios - how projections vary based on emissions scenarios
- Warmer, More Variable Temperatures
- Changing Precipitation Patterns
- Sea Level Rise
- Rising Ocean Temperature and Acidification

4. Existing Social Vulnerabilities

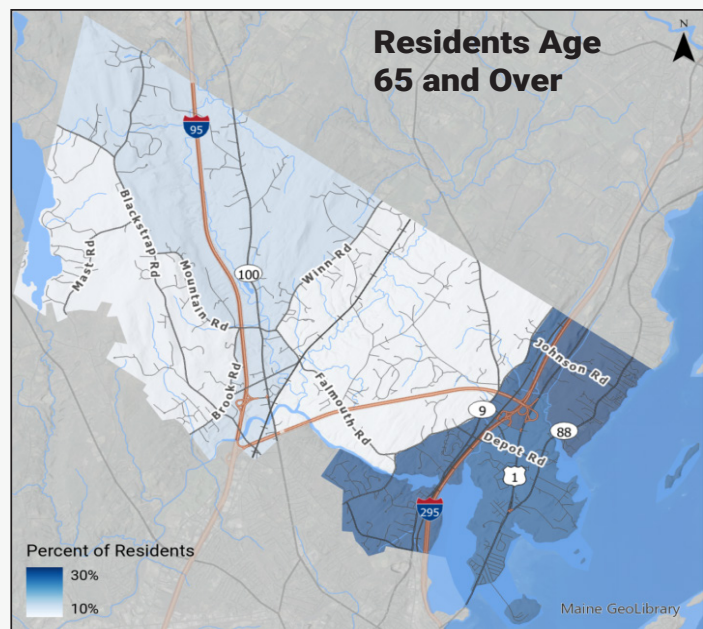
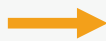
The section discusses how parts of the community will respond to climate change differently based on a variety of demographic, socioeconomic, and household factors. This section lays out the composition of the community and how people within the town may be vulnerable. Majority of the data is collected from the U.S. Census and local sources, if applicable

- Social Vulnerability Index
- Compounding Social Vulnerability
- Key social factors for community, describing both why it matters and town specific data.

Example Factors include:

- » Age and Health
- » Poverty and Unemployment
- » Housing Affordability
- » Language, Race, and Ethnicity

Example Social Vulnerability map



5. Vulnerable Assets

This section assesses how climate change will impact infrastructure, community assets, and natural resources specific to a community. This includes inventorying assets, mapping and analyzing how the assets are impacted by climate change and conducting a high-level risk assessment. Data collected provided by the town and state.

- Risks to Critical Infrastructure
 - » Transportation Infrastructure
 - » Water/Wastewater Infrastructure
 - » Power and Information Systems
 - » Buildings
- Vulnerable Community Assets
 - » Local economy and Livelihoods
 - » Housing Security
 - » Community Services
 - » Health
- Natural Resources at Risk
 - » Marsh Migration
 - » Coastal and inland erosion
 - » Water resources
 - » Wildfire
 - » Forest and open space
 - » Acidification
 - » Shifting Ecosystems - native and invasive species

Example data and analysis

Asset	HAT + 1.6 feet	HAT + 3.9 feet	100-year flood
Wastewater Treatment Plant	No	No	No
Treatment Outflow Pipe	Yes	Yes	Yes
Pump Stations	0	2	7
Pipeline	2.4%	3.3%	8%
Sewage and Drainage Covers	2.1%	3%	6.8%

Area of current tidal marshes	Area of tidal marsh migration		
	Under 1ft sea level rise	Under 2ft sea level rise	Under 3.3ft sea level rise
212.6 acres (0.33 sq miles)	34.7 acres (0.05 sq miles)	63.1 acres (0.1 sq miles)	91.7 acres (0.143 acres)

6. Priority Areas at Risk

This section will present an assessment of geographic areas within the community at highest risk of impacts from climate change based on the vulnerability data collected throughout the report..

****This outline is only guidance and is subject to change based on conversations with municipal staff, committee, and community. Not all assets may be present in every community. For example, inland towns will not be directly by sea level rise, and therefore the report would not include a discussion on marsh migration or coastal erosion. Outline and report drafts will be reviewed by the town.****

Appendix C:

Climate Action Plan Outline

1. SECTOR: Municipal Operations

- Priority Area - Decarbonize municipal facilities and operations
Example strategies
 - » Complete energy audits of government operations
 - » Electrify municipal fleet vehicles and provide adequate charging infrastructure for municipal needs
 - » Pursue 100% renewably sourced electricity generation for government operations
- Priority Area - Preparing municipal infrastructure for climate impacts
Example strategies
 - » Develop project ideas for at-risk infrastructure or ecosystems
 - » Ensure department staff has capacity to enact Climate Action Plan

2. SECTOR: Buildings and Energy Usage

- Priority Area - Reduce fossil fuel use in new and existing structures
Example strategies
 - » Increase community uptake of electric heating and cooling systems
 - » Expand opportunities for community energy memberships
 - » Require residential and commercial new construction to have capacity for sustainable energy
- Priority Area - Build neighborhood resilience in the face of climate impacts
Example strategies
 - » Ensure design of new construction incorporates planning for future climate hazards
 - » Improve understanding of community vulnerability and engage in adaptation techniques

3. SECTOR: Transportation and Land Use

- Priority Area - Electrification of transportation
Example strategies
 - » Promote electric vehicle purchasing
 - » Expand public and private charging infrastructure
 - » Support medium and heavy-duty electrification in the region
 - » Explore options for electric marine vessels
- Priority Area - Reducing community vehicle miles traveled
Example strategies
 - » Prioritize accessible and safe walking, biking, and active transportation in planning
 - » Build out public and active transit-oriented infrastructure
- Priority Area - Resilient Transportation Networks
Example strategies
 - » Adapt transportation infrastructure to climate impacts
 - » Ensure safe workforce commuting and transportation networks

4. SECTOR: Waste Reduction

- Priority Area - Community waste reduction
Example strategies
 - » Promote “circular” resource-sharing economy
 - » Expand community recycling services
 - » Expand composting and organics recycling
- Priority Area - Commercial and municipal waste
Example strategies
 - » Phase out of single-use waste items
 - » Work to electrify waste collection services

5. SECTOR: Social Resilience

- Priority Area - Building community resilience
Example strategies
 - » Update emergency management plans and techniques
 - » Organize infrastructure to reduce public health risks from high heat
 - » Pursue equitable access to housing and community services
- Priority Area - Adapting infrastructure networks
Example strategies
 - » Develop resilient local energy systems
 - » Prioritize green infrastructure
 - » PPromote local food and resource networks
- Priority Area - Protecting natural resources
Example strategies
 - » Protect wetland and coastal habitat
 - » Preserve forests and wetlands to offset carbon and climate impacts
 - » Promote forest and open-space conservation
 - » Monitor invasive species and native species migration

Climate Action Example

Priority Area:
Decarbonize municipal facilities and operations

Target:
Carbon free municipal operations by 2040

MUNICIPAL OPERATIONS				
Strategy	Responsibility	Immediate & Recurring Action	By 2030	By 2040
Complete Energy Audits of Government Operations	Planning Dept., Public Works Dept.	Suggest that future asset management plans consider energy efficiency impacts.	<ul style="list-style-type: none">• Action 1: Identify buildings most in need of energy efficiency upgrades.• Action 2: Evaluate anticipated electricity needs• Action 3: Determine facilities viable for renewable energy	
Decarbonize Government Facilities and Reduce Energy Usage/Emissions Intensity	Town Council, Planning Dept.	Ban fossil fuel heating and cooling systems in construction of new government facilities	<ul style="list-style-type: none">• Action 1: Explore power purchase agreements and new renewable energy sources to increase use of renewable energy for electricity to 100%	Retrofit government facilities to eliminate fossil fuel use and reduce energy use intensity