



## Chapter 1

# Introduction

## KENNEBUNKPORT COMPREHENSIVE PLAN 2030 Volume 2

*May 2022*





## The Setting

Kennebunkport offers an outstanding natural and cultural environment for both residents and visitors.



The combination of a rocky coastline, beaches, harbors, restaurants, historic villages, cultural and social activities, and a vibrant, natural hinterland creates an extremely desirable place to live and to visit.

Maintaining the character of Kennebunkport in the face of continuing change requires vigilance and continuing re-evaluation of the Town's goals and policies.

## Previous Comprehensive Plans

Comprehensive plans were prepared in Kennebunkport in 1996, 2005, and 2012. These were primarily volunteer efforts, though some professional assistance was rendered by the Southern Maine Planning & Development Commission and Planning Decisions, Inc.

## Why Prepare A Plan?

The State of Maine regulates the manner in which communities plan for and regulate growth and development through the Growth Management Program (Title 30-A §4312 et seq.), that was adopted in 1988 along with the Comprehensive Planning and Land Use Act. This law establishes the State's policies and establishes the rules by which communities may engage in land use planning and regulation. Through this law, the State overrides each community's home-rule authority and mandates compliance with an overall set

of goals, procedures and standards for community comprehensive plans. Aside from the requirement to have a plan, it just makes sense for towns to plan for the future. The process of preparing a comprehensive plan provides an opportunity for residents, community officials and other stakeholders to share ideas about what is important in the community, to identify issues and desirable responses, and to coordinate a town-wide approach to dealing with change. Ideally, the comprehensive plan will reflect consensus views about town policy.

As circumstances change and the community considers changes in its local policies, it is important to frame these considerations in terms of the comprehensive plan. New policies must strive to fit within current and future State requirements plus mesh with other local policies.

A comprehensive plan is not a law that is directly enforceable, but it is still a very powerful public document. A plan, which must be adopted by the voters, establishes the policy directives of the town.

State law requires zoning, growth control and impact fee ordinances to be

consistent with a comprehensive plan (MRSA Title 30-A §4314.3). As comprehensive plans are revised and updated, there is always a lag in consistency. The town is legally obligated to work towards consistency, and by statute such consistency must be achieved within 2 years (Title 30-A §4314.3. E).

Other regulations, most notably the Site Plan and Subdivision Regulations, limit approval of development applications to those that are consistent with the comprehensive plan.



Although the plan is not a law per se, it is very close and can have that same effect in certain circumstances.

A comprehensive plan is required to include recommendations about major capital purchases with a goal of gaining cost efficiency for capital spending in the long-term.



At the budget referendum the voters may subsequently decide not to follow the plan, but it is the obligation of the Town officials to pursue capital expenditures that are consistent with the Town's comprehensive plan.

This Comprehensive Plan update is intended to guide the Town through 2030. While it carries forward pertinent information and strategies from the 2012 Comprehensive Plan, it has been fully overhauled to represent the current conditions, trends, and key issues of the 2020's.

There are two components of the 2030 Comprehensive Plan:

Volume 1 – A user-friendly compendium of the plan

Volume 2 – A full, detailed, 18-chapter plan with appendices.

This update is the first time the Town is directly addressing the challenges posed by climate change in the Comprehensive Plan. Climate change projections, impacts, and planning implications are integrated directly into each chapter rather than included in a separate plan chapter. This approach reflects the reality that climate change will affect and must be considered across all sectors. A summary of the climate science and policy that informs this plan is included in this Introduction Chapter.





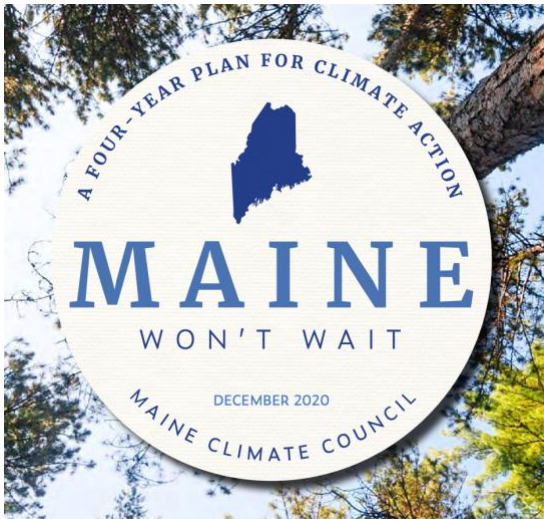
**Looking north toward Marshall Point and Goose Rocks Beach. Photo: Tom Morgan.**



## The State's Climate Action Plan

Although Maine law requires the plan to look ten years into the future, an epochal event such as the current rate of climate change compels a longer view. It is never too soon to start that conversation.

In December 2020, the Maine Climate Council released **Maine Won't Wait**, the State's four-year plan for climate action to guide the reduction of greenhouse gas emissions by 45% by 2030 and 80% by 2050, and to achieve carbon neutrality by 2045.



The plan identifies the effects of climate change on Maine and lays out four primary climate action goals and a series

of eight strategies to reach those goals.

### The State's Goals

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

The Maine Climate Council's Scientific and Technical Subcommittee produced a **Scientific Assessment of Climate Change and its Effects in Maine** that is part of the climate action plan. The climate science from this resource, as well as other scientific reports that contain the best available information to plan for Kennebunkport's future, are summarized in Table 1-1 and presented in Figure 1-1.

While projections extend to 2100, it is important to acknowledge that changes in temperature, precipitation, and sea level will continue beyond 2100.

## The Implications for Planning in Kennebunkport

Impacts of climate change on people, infrastructure, the economy, natural resources, and water and marine resources are widespread. Figure 1-2 highlights a few of the impacts of climate change across planning sectors, many of which are explored in this Comprehensive Plan. Sea level rise, for example, will impact homes, businesses, and infrastructure in coastal areas and may also be a threat to drinking water. One of the best long term climate adaptation strategies is to reduce greenhouse emissions so that the climate challenge faced by future generations is less formidable. This update to the Comprehensive Plan also addresses many ways the town can reduce carbon dioxide (CO<sub>2</sub>) emissions.

**Table 1-1 Summary of climate change science for Maine. Source: Maine Climate Council.**

Temperature	Precipitation	Sea Level	Ocean Acidification
<ul style="list-style-type: none"> <li>• Statewide annual temperature has increased by 3.2°F since 1895</li> <li>• Coastal area have warmed slightly more (0.2°F) than interior locations</li> <li>• Longer summers and shorter winters</li> <li>• Increased growing season by 16 days on average since 1950</li> <li>• Increase in late killing frosts in spring and early in fall</li> <li>• By 2050, temps could increase another 2-4°F and up to 10°F by 2100 relative to a 2001-2018 climate baseline</li> <li>• Recent warming has caused considerable variability of temperature in the Gulf of Maine</li> <li>• The Gulf will continue to warm through at least 2050</li> <li>• Beyond 2050, the warming rate depends strongly on the emissions pathways, ranging from 2.7 F to 5.4 F above the baseline by the end of the century</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide annual precipitation has increased by 6 inches since 1985</li> <li>• Storm frequency and intensity has increased in the northern hemisphere since the 1950s</li> <li>• Already heavier and more frequent storm events, trending upward at a greater rate since the mid-2000s</li> <li>• Seasonal differences include greater increase of rainfall in summer and early fall than spring and winter</li> <li>• In the last 50-100 years, snowpack depths have decreased</li> <li>• State will continue to get wetter over the next century as increase heating intensifies the hydrological cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Sea levels along the Maine coast have been rising at about 0.6 to 0.7 feet per century over the last 50 years – this is 2 times faster than during the past 5,000 year</li> <li>• More recently, the rate of sea level rise has accelerated to about 1 foot per century</li> <li>• About half of the sea level rise that has occurred in the 1900s occurred since the 1990s</li> <li>• A 1-foot increase in sea level in the future will lead to a 15-fold increase in frequency of nuisance flooding</li> <li>• A tenfold increase in coastal flooding in the next 30 years is possible, not accounting for changes in storm intensity or frequency.</li> <li>• State recommends:               <ul style="list-style-type: none"> <li>○ Committing to manage for 1.5 feet of sea level rise by 2050 and 3.9 feet by 2100</li> <li>○ Preparing to manage for 3.0 feet of sea level rise by 2050 and 8.8 ft by 2100, for critical infrastructure especially</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Rate of ocean acidification is at least 100 times faster at present than at any other time in the last 200,000 years</li> <li>• Since the beginning of the 19<sup>th</sup> C, surface ocean pH has decreased from 8.2 to 8.1, a 30% increase in the average acidity of ocean surface waters.</li> <li>• Further reductions in ocean pH are expected, ranging from 0.05-0.33 pH units by 2100 depending on emissions scenarios</li> </ul>

# TEMPERATURE

Statewide average annual temperature has increased by 3.2°F since 1985.<sup>1</sup>

Historically unprecedented warming is projected by the end of the 21st century.<sup>2</sup>

2-4°F Increase in temperature by 2050 compared to a 2001-2008 baseline<sup>1</sup>

10°F Increase in temperature by 2100 compared to a 2001-2008 baseline<sup>1</sup>



13.5 days Average number of days with heat index greater than or equal to 95°F in Portland expected mid-century, an increase in days of 238% from the beginning of the century<sup>1</sup>

2 x Winter temperatures are increasing twice as fast as summer temperatures<sup>2</sup>

2.7 - 5.4°F Increase in ocean temperature by the end of the century<sup>1</sup>

# PRECIPITATION

Average annual precipitation has increased by 6 inches, or 13%, since 1895 and will continue to increase throughout the century.<sup>1</sup>

5-10% Increase in mid-century precipitation by mid-century compared to 1970-2018<sup>1</sup>



Greater increase in rainfall than snow<sup>1</sup>



Heavy storms of 2-4 inches are becoming more frequent. Most 2 in+ events have occurred since the 1990s<sup>1</sup>

10-15 More extreme precipitation events per year occurred since 2000 compared to the previous century<sup>1</sup>

# SEA LEVEL RISE

Sea level has risen at a rate of 0.7-0.7 feet/century over the last 50 years and will continue to rise throughout the century.<sup>1</sup>

1.5 ft 3.9 ft 8.8 ft Maine Climate Council recommends committing to manage for 1.5 feet of sea level rise by 2050 and 3.9 feet by 2100, and preparing to manage for 3.0 feet of sea level rise by 2050 and 8.8 ft by 2100<sup>1</sup>

2 x Rate of sea level rise over the last 50 years compared to the past 5,000 years<sup>1</sup>



10 x Possible increase in coastal flooding in the next 10 years, not accounting for changes in storm intensity or frequency<sup>1</sup>

2-5 miles Distance inland that groundwater rise can occur due to sea level rise

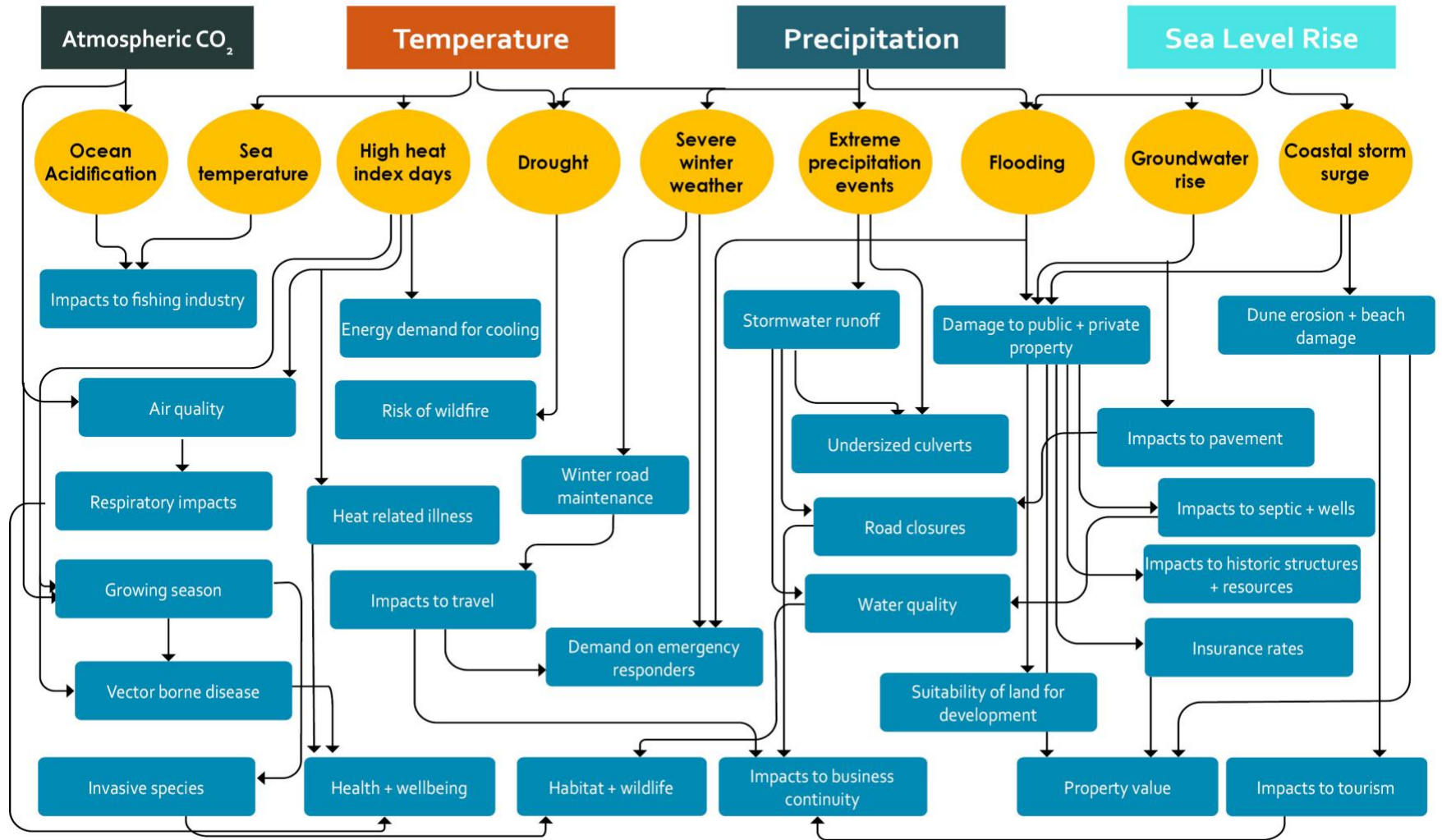
1. Maine Climate Council. Maine Won't Wait 2030 Climate Action Plan, 2020. [https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait\\_December2020.pdf](https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf)

2. National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) (2017) State Climate Summaries. Maine. <https://statesummaries.ncics.org/chapter/me/>

Figure 1-1. Quick climate change stats for Maine



## Climate Change Impacts Across Planning Sectors



**Figure 1-2. Diagram of examples of climate change impacts across planning sectors**

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