An aerial photograph of a coastal town, likely Penobscot, Maine. The foreground shows a dark, sandy beach. The middle ground features a cluster of houses and buildings, some with blue roofs, surrounded by green lawns and trees. The background is dominated by a vast, dense forest of trees with varying shades of green and brown, extending to rolling hills in the distance under a clear blue sky.

Town of
Penobscot
Comprehensive Plan

2023

Prepared by the Penobscot Comprehensive Plan Committee

Jonathan Albrecht – Vice Chair

Jessie Conley Allen

Bundy Boit

Bailey Bowden – Chair

James Henry Jr.

Richard Hewitt

Barbara Dillon Hillas – Secretary

Elizabeth Leclerc – Co-Secretary

Arthur Washburn

Marguerite Williams

With Technical Assistance Provided by:

Hancock County Planning Commission

121 Bucksport Road, Ellsworth, ME 04605

A special thank you to James Fisher for his assistance with creating the public survey and guidance while drafting this document and to all the town residents and neighbors who helped with initial data gathering and drafting: Daksha Baumann, Hans Carlson, Margaret Chernosky, Carroll S. Connard, Ed DeVito, Royce Hardin, Robin Jettinghoff, David Jolly, Joel Katz, Sara Leighton, Virginia Liberatore, Phil Rapp, Leslie Ross, Joanna Rysnik, Sonia Turanski, Sylvia Tapley, Katherine Turok, Richard Washburn.

We would also like to express our appreciation to all who participated in the Public Survey and attended any of the public outreach sessions that were held. We hope that this plan reflects your comments and opinions.

Table of Contents

Vision Statement	A-8
Chapter A: Historic and Archaeological Resources.....	A-10
Chapter B: Water Resources.....	B-20
Chapter C: Natural Resources	C-37
Chapter D: Agriculture & Forestry	D-61
Chapter E: Marine Resources	E-79
Chapter F: Population & Demographics.....	F-98
Chapter G: Economy.....	G-105
Chapter H: Housing	H-117
Chapter I: Recreation.....	I-128
Chapter J: Transportation.....	J-139
Chapter K: Public Facilities & Services	K-157
Chapter L: Fiscal Capacity.....	L-172
Chapter M: Existing Land Use	M-177
Chapter N: Future Land Use.....	N-187
Implementation and Evaluation Program.....	N-199
Regional Coordination Program.....	N-210
Summary of Public Participation	N-214

List of Tables

Table A-1: Formally Documented Archaeological Sites.....A-14

Table B-1: Pond Characteristics.....B-22

Table B-2: Streams and Large, Named WetlandsB-24

Table C-1: Barriers to Stream PassageC-47

Table D-1: Acreages of Different Land Cover Types in PenobscotD-66

Table D-2: Time Harvests, 2009-2019D-70

Table E-1: License Sales, 2021E-81

Table E-2: Lengths of Registered VesselsE-81

Table E-3: Saltwater Access Points.....E-85

Table E-4: Scenic Shoreline ViewsE-92

Table F-1: Population by Age, 2021.....F-100

Table F-2: Estimated Educational Attainment for Population 25 Years and OverF-100

Table F-3: Average Household Size, 2021F-101

Table F-4: Median Household Income, 2021F-101

Table F-5: Families Below the Poverty Level, 2021F-101

Table F-6: Penobscot School Enrollment, 2012-2022.....F-102

Table G-1: Industry Sector for Wage and Salary Jobs, 2021G-108

Table G-2: Average Private Industry Employment and Wages, 2017-2022G-108

Table G-3: Monthly Earnings for Wage and Salary Jobs, 2019.....G-109

Table G-4: Industry Sector for Wage and Salary Jobs Held by Penobscot Residents, 2021....G-109

Table G-5: Travel Distance to Wage and Salary Jobs Held by Penobscot Residents, 2019.....G-109

<i>Penobscot Comprehensive Plan</i>	<i>2024</i>
Table G-6: Places Where Residents Worked, 2019.....	G-110
Table H-1: Housing Unit by Type	H-118
Table H-2: Affordability, 2022	H-119
Table H-3: Affordability, 2020-2022	H-119
Table H-4: Households Paying 30% or More of Household Income on Housing Costs by Household Income	H-121
Table H-5: Income Distribution for Owner- and Renter-Occupied Housing	H-121
Table H-6: Monthly Housing Costs by Housing Type	H-122
Table H-7: Owner-Occupied Housing by Home Value.....	H-122
Table H-8: Mortgage Status of Owner-Occupied Housing Units	H-123
Table H-9: Year Structures Were Built	H-123
Table H-10: Heating Fuel Used in Occupied Housing Units	H-123
Table I-1: Streams and Large, Named Wetlands.....	I-129
Table J-1: Classification and Mileage of Public Roads	J-143
Table J-2: Annual Average Daily Traffic, 2012-2017.....	J-143
Table J-3: MaineDOT Work Plan for 2022-2024.....	J-146
Table J-4: Locally Identified Traffic Hazard Areas	J-148
Table J-5: Bridges	J-149
Table K-1: Estimated Costs of Needed Capital Improvements to Public Facilities.....	K-161
Table K-2: Monthly MSW Tonnage, 2017-2019	K-163
Table L-1: History of Municipal Revenues, Current Assets, and School Costs per Year	L-173
Table L-2: History of Selected Municipal Expenditures by Year	L-173
Table L-3: History of Selected Municipal Expenditures by Year	L-174
Table L-4: Prioritized Capital Budget for the Next 10 Years	L-175
<i>Table of Contents</i>	<i>A-5</i>

Table M-1: Dimensional Standards Required by Town Ordinances, 2023..... M-179

Table M-2: Principal and Accessory Structure Setbacks M-183

List of Figures

Figure B-1: Water Resources of Penobscot..... B-23

Figure C-1: Water Resources and Riparian Habitat..... C-39

Figure C-2: Hydric Soils C-42

Figure C-3: Wetland Characterization..... C-44

Figure C-4: Stream Habitats and Barriers C-46

Figure C-5: Important Animal and Plant Habitat..... C-49

Figure C-6: Undeveloped Habitat Blocks and Connections..... C-54

Figure C-7: Co-Occurrence of Important Natural Resources..... C-55

Figure D-1: Penobscot Farms and Farmland D-64

Figure D-2: Annual Acres of Timber Harvest and Active Notifications to the Maine Forest Service D-71

Figure D-3: Forested Lands D-72

Figure E-1: Water Dependent Uses, Facilities, and Public Access E-86

Figure E-2: Storm Surge and Sea level Rise Scenarios..... E-91

Figure F-1: Historic and Projected Population, 1800-2040..... F-99

Figure G-1: Annual Average Unemployment Rate, 2008-2021 G-107

Figure G-2: Inflow/Outflow, 2019 G-111

Figure H-1: Penobscot Affordability, 2014-2022 H-120

Figure I-1: Recreational Facilities and Public Use Trails, Picnic Areas, and Camping I-131

Figure I-2: Regional Recreational Facilities I-135

<i>Penobscot Comprehensive Plan</i>	<i>2024</i>
Figure J-1: Road Network.....	J-142
Figure J-2: Road Condition	J-145
Figure J-3: Safety Ratings and High Crash Locations.....	J-147
Figure K-1: Public Facilities and Services	K-158
Figure M-1: Current Land Use	M-180
Figure M-2: Development Constraints.....	M-181
Figure M-3: Tax-Related Land Use Classifications.....	M-182
Figure N-1: Future Land Use Plan Designations	N-192

DRAFT

Vision Statement

Penobscot is a rural town, nestled within the Penobscot and Bagaduce Rivers, with 30,000 acres of lush forests, ponds, farmlands, and village areas, where residents have inherited, built, or purchased their homes. The Town is about a 15-minute drive from US Route 1, the main coastal arterial. Our Town takes pride in its scenic natural and rural character, which has been helped by land conservation, such as the recent purchase of Wallamatogus Mountain by Blue Hill Heritage Trust. Another treasured natural feature is the undeveloped Bagaduce River, which has been recognized by the State as a Focus Area of Statewide Ecological Significance. Our residents prize Penobscot's small-town feel and close-knit, supportive community, from community events sponsored by local organizations to our small farms that provide local produce and even food for the regional hospital in Blue Hill.

We envision a town that is prepared to meet the challenges it will face in the next decade and beyond, a town that will encourage development in a manner that maintains our rural and scenic qualities; that will prepare for the effects of a changing climate and adapt to meet them; that values its natural resources; that supports, promotes and provides local education that will prepare our students to pursue whatever path they choose; that develops the kinds of services and tax structures that will enable older residents to remain in town; and encourages young people to move here, start their businesses, raise their children, and grow old here.

With your help, we hope to succeed in making this vision a reality while keeping our Town the way everyone likes: that hometown feel with suitable growth and support from neighbors and town officials.

Data

The population and demographic data in this chapter come from two primary sources in the U.S. Census—the Decennial Census and the American Community Survey (ACS) 5-Year Estimates. More current data has been taken from the American Community Survey, the Census program’s current name for counts taken between decades. This is important to note because the margins of error are often quite large for rural towns. Nonetheless, it is still presented in this plan but should be analyzed and interpreted through the lens of other analytical sources of information.

DRAFT

Chapter A: Historic and Archaeological Resources

1. Purpose

Historic and archaeological resources are vital elements of a community's identity. A comprehensive plan must identify important historical and archaeological resources not only for the sake of the historical record, but also to preserve their present-day value to the Town's identity. Specifically, this chapter will:

- a. Present a brief history of Penobscot and the region;
- b. Describe historical and archaeological resources;
- c. Assess threats to these resources; and
- d. Assess the effectiveness of existing measures to protect and preserve these resources.

2. Key Findings & Issues

There have not been any comprehensive surveys of the Town's historic buildings or archaeological sites. Several known sites are on record with the Maine Historic Preservation Commission, but several more known locally have not been reported to the State. None of the Town's archaeological sites have been evaluated to determine if they are eligible for the National Register of Historic Places, which is the primary determining factor affording legal protection to sites. One historic building, the William, and Oatley Gray Farms (Horsepower Farm) is eligible for listing in the National Register of Historic Places.

The primary potential threats to Penobscot's historic and archaeological resources are development, erosion, and degradation. Some of the Town has already been affected by the cumulative loss of historical character through the demolition and renovation of older buildings. That said, some areas do retain a sense of the Town's historical character, such as the village area and the stretch of Southern Bay Road between the Methodist Church to the Baptist (Chocolate) Church. Deterioration and lack of care is a considerable threat to Penobscot's 74 cemeteries.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan found that the lack of identified historic resources made it difficult to assess potential threats. Although the former brickyard was a known site, none of the Town's historic buildings or sites were listed on the National Register of Historic Places at that time.

4. 2022 Public Opinion Survey Results

Survey respondents were overwhelmingly in favor of protecting historical and archaeological resources (88% in favor, 10% unsure, and 2% opposed).

5. Conditions and Trends

5.1. Outline of Community History

What we now call the Town of Penobscot was initially home to the Wabanaki people (the Penobscot, Passamaquoddy, Mi'kmaq, and Maliseet Nations) and their ancestors. The name "Penobscot" comes from the language and identity of the Penobscot people, who share their name with the major river system of their homeland (the Penobscot River). According to Wabanaki oral history, their ancestors were the first to arrive in Maine and the Canadian maritime provinces, a territory they call "Dawnland".¹ Archaeological evidence confirms that people have lived in Maine for at least 11,000 years.²

From these early times, Maine's inhabitants hunted game, gathered wild foods and materials, and fished inland and coastal waters. The Bagaduce River was a vital transportation route for people living and trading between Penobscot and Frenchman Bays. Pentagoet, now known as Castine, means "descending river place and was an important rendezvous area. The larger Bagaduce watershed, including the area that is now the Town of Penobscot, was also part of a traditional familial hunting ground¹.

Europeans began exploring, fishing, and trading along the Maine coast as early as 1498, when Sebastian Cabot sailed the coast. Conflicts between the French and English frequently occurred at a trading post maintained at Pentagoet (Castine) and often involved Wabanaki people who were allied with one side or the other. The Wabanaki were guaranteed title to lands along the Penobscot River under the Treaty of Paris in 1763. However, European, and later American officials continued to pressure the Wabanaki to cede these lands, and settlers began seizing or purchasing lands in the region even before a settlement was reached. The Penobscot eventually accepted a controversial settlement in 1796 that ceded all land but the islands within the Penobscot River above Old Town. Several Wabanaki

¹ Prins and McBride, 2007

² Sanger, 2005

families continued to live in the Blue Hill Peninsula region into the nineteenth century and Wabanaki people maintain connections to the region today.¹

It is unclear when the Wabanaki sold or ceded the area around the present-day town of Penobscot. The Massachusetts Provincial General Court granted the land to a group of proprietors in 1762 as Township Number 3, which was incorporated as the Town of Penobscot in 1787. The town initially included what are now the towns of Penobscot, Castine, and Brooksville. The Commonwealth of Massachusetts separated the towns of Castine and Penobscot in 1796 and again separated portions of each of these into the Town of Brooksville in 1817. A historic map surveyed by John Peters, and produced in 1794, shows early development in Penobscot, including two sawmills on Winslow Stream and a single road that overlaps portions of the modern Dunbar and Bayview Roads. Although “Houses for Public Worship” are noted in areas that would become Castine, none are mapped in Penobscot, perhaps indicating a low population density at that time.

From the time of its separation from Castine and Brooksville, residents of the Town were primarily engaged in farming, forestry, and maritime pursuits. Although most of the land was not suitable for farming, by clearing trees and rocks, families could produce enough to supply their own needs, with occasional surpluses providing a limited income. It appears that before the blight of 1845, potatoes were a cash crop and were shipped to Boston. Just the same, farming in Penobscot rarely rose above the subsistence level except in the higher regions of North Penobscot, which have traditionally been agriculturally productive.

Farming was not a year-round operation. Except for plowing and planting in the spring and harvesting in the fall, residents were free for other activities, most notably fishing and coasting in the summer, and woodcutting and boatbuilding in the winter. Indeed, maritime industries were the economic lifeblood of the region for at least 150 years, namely fishing, shipping, and boatbuilding. In *The History of Penobscot*, by Don Wight, Captain William Sellers describes that in his time (1853-1935), more than 100 men manned fishing vessels in the Grand Banks, and that many of these ships were captained by local residents. The local alewife fishery was also economically important until the mid-nineteenth century. Beyond fishing, Northern Bay provided a safe harbor for shipyards and wharves to load raw materials and goods produced in Penobscot. Captain Sellers also describes two shipyards that operated on Northern Bay, producing thirty-eight vessels, and “five big wharves” along the shore. From these wharves, nearly twenty ships carried kiln wood to Rockland, bricks as far as Boston, and stone to New York City. Hosea Wardwell’s diary similarly recounts that in 1876, Penobscot residents commanded nine schooners, one sloop, and one boat, which coasted from Northern Bay to Rockland and Boston carrying bricks, wood, barrels, staves,

and potatoes. The U.S. government began dredging and improving the Bagaduce River, Northern Bay, and Winslow's Cove in the 1890s, although this activity only occurred until the early twentieth century.

The intense level of shipping through the nineteenth century was sustained through equally intense exploitation of Penobscot's natural resources, including its forests (for lumber and cordwood), granite, clay for bricks, and precious metals. Approximately thirteen brick kilns operated in Penobscot at various times. Granite was quarried near Hardscrabble Hill and paving blocks were taken from John Littlefield's property and shipped to New York in the 1890s. Copper, silver, and gold were extracted from approximately nine mines across the town. Captain Sellers describes thousands of cords of wood shipped to lime kilns in Rockland, while two lumber mills operated in town. By the late 1800s, all but the most inaccessible trees in the forest had been cut, leaving only second-growth trees for future harvesting.

By the 1860's, economic opportunities in the area were beginning to decline, perhaps due to new developments in transportation, such as railroads that began accessing Maine's interior and a transition from wooden sailing vessels to more dependable iron-hulled steamboats. The development of the steamboat curtailed boatbuilding in the area, as neither coal nor iron needed for their production were readily available. The population statistics reflect this; a general out-migration began to occur after 1860, when Penobscot's population peaked at 1557 people. Although economic activity in Penobscot was presumably lower in the late eighteenth to early twentieth centuries, more is known about the town's industries at this time, such as the brickmaking, quarrying, and mining noted above. For example, the Penobscot Historical Society's *Book of Days* notes 250 million bricks were produced in the year 1880 alone. One of Penobscot's largest employers in its history was Abbey Condon's Knitting Factory, which began with hand knitters in 1864 and expanded with the purchase of knitting machines in 1882. The factory produced about 15,000 pairs of mittens a year, most of which were shipped to Boston. Another large employer of the early- to mid-twentieth century was the cannery, which operated from 1938 to about 1951 and employed up to 80 people. The business first canned creamed corn, then later expanded to other vegetables and eventually to blueberries.

Tourism and vacationing were increasingly important to the local economy in the late nineteenth and twentieth centuries, beginning with the transition to steamboats that made Maine's coast more accessible to summer vacationers. First boarding houses, then hotels and summer cottages were built to serve them. Wealthy families from Boston, New York, and other urban areas also maintained summer homes. The stock market crash of 1929 and

Great Depression curtailed tourism and vacationing in the region, although these activities recovered after World War II and remain important to the local economy today.

More recently, the town experienced a slight population boom in the 1980s, possibly associated with growth at the Bucksport paper mill and other industries outside of the Town. For the last part of the twentieth century to today, Penobscot could be considered a bedroom community to the larger towns of Bucksport, Ellsworth, Bangor, and even the smaller towns of Castine and Blue Hill, where people have found employment in healthcare, construction, academia, and other professions.

5.2. Historic and Archaeological Resources

In preparation for this comprehensive plan, the Town obtained data from the Maine Historic Preservation Commission (MHPC) regarding past professional surveys and known archaeological sites and historic architectural resources. The data suggests that no professional archaeological surveys have been conducted. Isolated architectural reviews have been completed, but there has not been a comprehensive survey of Penobscot’s historic buildings. Although there has been little historical and archaeological survey in the Town, seven sites have been formally recorded (Table A-1). These include four prehistoric sites, an artifact find known as the Castine Coin Hoard (associated with the Baron de Saint-Castin), a portage at Johnson Point, a historic brickyard, and a shipwreck. In addition, the remnants of several more brickyards, wharves, piers can be seen along the shore. There are several ships’ remains located in Northern Bay and the initials of Samuel Perkins, the hermit of the Bagaduce, can be found on a ledge on Hermit Island a.k.a. Sam’s Island.

Table A-1: Formally Documented Archaeological Sites

Site Name	Site Number	Site Type	Periods of Significance	National Register Status
Castine Coin Hoard	ME 343-001	Artifact find (coins)	17th century	Undetermined
Johnson Point Portage	ME 343-002	Portage	mid-17th century	Undetermined
Brickyard 19th and 20th	ME 343-003	Brickyard	19th and 20th centuries	Undetermined
Sky Rocket	ME 343-004	Shipwreck	18th century	Undetermined
N/A	041.003	Prehistoric site	Prehistoric	Undetermined
N/A	042.008	Prehistoric site	Prehistoric	Undetermined

N/A	042.013	Prehistoric site	Prehistoric	Undetermined
N/A	042.039	Prehistoric site	Prehistoric	Undetermined

Source: Maine Historic Preservation Commission

None of the archaeological sites have been evaluated to determine if they are eligible for listing in the National Register of Historic Places. In addition, the William, and Oatley Gray Farms (Horsepower Farm) at 56 Horsepower Farm Road is eligible for listing in the National Register of Historic Places.

MHPC recommended that archaeological surveys are needed to identify both prehistoric (prior to the arrival of Europeans) and historic resources. It recommended that prehistoric surveys focus on the shores of Penobscot Bay, Northern Bay, and the Bagaduce River, while surveys for historic archaeology should focus on the identification of potentially significant resources associated with the Town’s agricultural, residential, and industrial heritage, particularly those associated with the earliest Euro-American settlement of the town in the eighteenth and nineteenth centuries. The Committee adds that, given the importance of the Bagaduce and nearby Pentagoet, archaeological surveys should also attempt to identify seventeenth century sites related to European and Wabanaki habitation, trade, hunting, and other activities. Regarding above-ground (architectural) historic resources, MHPC recommended a comprehensive survey in order to identify other properties that may be eligible for nomination to the National Register of Historic Places.

5.3. Threats to Historic and Archaeological Resources of Local, State, or National Significance

At present, only one historic resource in Penobscot has been identified as having local, state, or national significance: William and Oatley Gray Farms in North Penobscot. However, the seven known archaeological sites have not been evaluated and it is possible they also have historic, cultural, or scientific significance. Given the lack of professional survey, it is also possible that there are other significant sites and buildings that have not yet been identified.

In general terms, the primary threats to Penobscot’s historic and archaeological resources are development, erosion, and degradation. Development has the potential of disturbing or destroying archaeological sites when it involves ground disturbance such as excavation for foundations or roads. Development can also harm historic buildings when it involves demolition and renovation, which can remove historic materials and unique architectural

details. Over time, changes to individual buildings can degrade the overall historic character of that building or a section of town, even if individual buildings are not historically significant. The cumulative loss of historic character has already affected much of the Town, but there may be some areas that retain that sense, such as the village area between the Methodist Church and Baptist Church on Southern Bay Road. This type of threat is difficult to address because it involves the decisions of individual property owners and can involve incremental changes over long periods of time.

Erosion is a considerable threat for archaeological sites and historic buildings along shorelines and is made worse by sea level rise, which raises the reach of coastal storm waves and associated erosion.³ Sea level rise and erosion are considerable threats to prehistoric sites in Penobscot, which are along the shore in Northern Bay and on the Penobscot River. Stabilization and other protections against erosion can be effective, though expensive, solutions to preserve significant shoreline sites. The University of Maine has also launched a citizen science project to monitor shoreline sites and record archaeological data as they erode, although none of the sites in Penobscot are part of the program. While these activities help mitigate the loss of scientific data, they do not address the loss of their cultural significance.

Degradation is the third threat to Penobscot's historic and archaeological resources and has several causes. Freeze-thaw cycles and frost heaves can affect archaeological sites by degrading artifacts, shifting soils, and causing erosion. Deterioration and lack of care is a considerable threat to Penobscot's 74 cemeteries. Many of the gravestones – particularly marble ones – are deteriorating due to acid rain and general weathering that tends to obscure engraving on the gravestones. All gravestones are subject to frost heaves which can topple and break the stones. Penobscot has formed a cemetery committee to address these concerns. Flooding, whether from storm surge or intense precipitation, can also cause damage and deterioration of historic buildings. Sea level rise, storm surge, freeze-thaw cycles, and intense storms are all predicted to worsen due to climate change. MHPC has assembled guidance for protecting and rehabilitating properties damaged by flooding and other types of hazards.⁴

³ Maine Midden Minders, 2022

⁴ <https://www.maine.gov/mhpc/programs/protection-and-community-resources/climate-change>

6. Analysis

6.1. Are historic patterns of settlement still evident in the community?

Settlement patterns in the Town of Penobscot largely echo those visible in the 1881 Colby Atlas map. Most of the current road network was in place by 1881, although some roads, like portions of Bayview, Dunbar, and Castine roads, reflect some of the earliest transportation routes as shown in the 1794 Peter's Plan of Penobscot. The Colby Atlas shows most settlement along roads that wrap around Northern Bay, as well as a village area in North Penobscot at the intersection of what are today North Penobscot Road (Rte. 199), Front Ridge Road (Rte. 15), and Back Ridge Road. Areas around Northern Bay remain the center of town activity, especially the village area between Mill Creek and Bridge's Point Road. North Penobscot has lost its village character, with only residences and small home-based businesses remaining. The Town also now has more development along the shores of Toddy Pond and Wight's Pond, most of which consists of seasonal homes and camps.

While some residential buildings in town are quite old, there are very few historic buildings associated with community or economic activities, such as halls, stores, and mills. Most of the oldest buildings in town were built in the mid-nineteenth century or later. For example, the Methodist Church at Carpenter Cove was built in 1858, the Baptist ("Chocolate") Church at Southern Bay Road and Western County Road was built in 1899, and another Methodist Church was built in 1844 at the corner of Southern Bay Road and Kingdom Road (now a private residence). Several historic buildings have been relocated to the Penobscot Historical Society grounds north of Penobscot Elementary School on North Penobscot Road. Only one property has been recommended eligible for listing in the National Register of Historic Places, the William, and Oatley Gray Farms (Horsepower Farm), at 56 Horsepower Farm Road. However, there have not been professional, systematic surveys for historic buildings or archaeological sites in Penobscot.

Regarding pre-European settlement, four Wabanaki sites have been recorded in Penobscot. Members of Wabanaki tribes retain connections to the Town of Penobscot, including participation in the eel fishery on Winslow Stream. The Bagaduce River has long been an important waterway, and it remains so today, mainly for small motorized and non-motorized craft, including small fishing/lobstering boats, sailboats, and canoes.

6.2. What protective measures currently exist for historic and archaeological resources and are they effective?

The Town has provisions in several of its land use regulations that recognize the importance of historical and archaeological resources. The Shoreland Zoning Ordinance requires that any proposed land use activity involving structural development or soil disturbance on sites listed on, or eligible to be listed on, the National Register of Historical Places be submitted to the Maine Historical Preservation Commission for review and comment. In the case of proposed subdivisions, the Town's Land Use Regulations require that the subdivision design shows the preservation of historic areas.

These measures have limited effectiveness because most parts of the Town have not been studied to determine if they contain structures or sites listed on or eligible for listing on the National Register, and the ordinance does not require archaeological or architectural evaluations prior to permitting.

6.3. Do local site plan and/or subdivision regulations require applicants proposing development in areas that may contain historic or archaeological resources to conduct a survey for such resources?

The Town has a Subdivision Ordinance and also relies on the State Statute, 30-A M.R.S.A. §4401 et seq. as the standards for subdivision review. This statute requires:

“The proposed subdivision will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or the municipality, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline” (§4401.8).

None of the other Town Ordinances require a survey of historical or archaeological resources to be done prior to site work.

6.4. Have significant historic resources fallen into disrepair, and are there ways the community can provide incentives to preserve their value as an historic resource?

There has been extremely limited work to date to identify or evaluate significant historic resources. Only one property has been identified as eligible for listing on the National Register of Historic Places, the William, and Oatley Gray Farms (Horsepower Farm). It is possible there are other properties that are historically significant but have not been evaluated. It is clear that historic residential buildings are being demolished and replaced

over time, causing incremental losses to the Town's historic character. The Town currently has no funds or other means to preserve the value of historical resources. It must rely on the efforts of private owners to maintain the character of historic buildings.

7. Goals, Policies, and Strategies

Goal: To preserve its historic and archaeological resources that are important to the Town's history or are otherwise determined to have historical or cultural significance.

Policies: Protect, to the greatest extent practicable, the significant historic and archaeological resources in the community.

Strategies:

- a. Retain provisions for protecting historical and archaeological sites already in the Town's Land Use Regulations, Subdivision Ordinance, and Shoreland Zoning Ordinance.
- b. Retain provisions in the Shoreland Zoning Ordinance and Subdivision ordinances that require the planning board to incorporate information provided by the Maine Historic Preservation Commission into their review process.
- c. Request the Penobscot Historical Society coordinate with the Maine Historic Preservation Commission to document known archaeological sites that are not already on file with the Commission and to record historic buildings in the Town.

Chapter B: Water Resources

1. Purpose

This section presents an overview of Penobscot’s water resources, which are essential to protecting the Town’s drinking water. Specifically, this chapter:

- a. Describes the characteristics, uses, and quality of Penobscot’s significant water resources;
- b. Predicts and considers potential negative impacts to water quality caused by future growth and development; and
- c. Assesses the effectiveness of existing measures to protect and preserve these resources.

2. Key Findings & Issues

Penobscot, like most of Maine, has abundant water resources—surface water and groundwater—that provide habitat for a variety of fish, wildlife and vegetation, areas for recreation, and drinking water for residents. The water is not only plentiful but is of good quality. There are, however, a number of threats to that water quality, both natural and manufactured, including climate change. There are gaps in the information available about the Town’s freshwater sources.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 plan noted that apart from the water quality problems discussed under Marine Resources, the key water resource issue facing Penobscot is protecting its lakes from increased phosphorus loading. Phosphorus, a naturally occurring element, causes algal blooms and can render a lake unsuitable for swimming and other recreational activities. Phosphorus loading increases if development occurs with little attention paid to minimizing erosion and sedimentation. To avoid excessive phosphorus loading, it is important to review development throughout a lake watershed to assure that drainage and other erosion control measures are adequate. That plan also noted that about 90% of respondents to the public opinion survey favored strengthening land use regulations to protect and preserve fragile areas, including shorelands, wetland, and drinking water sources.

4. 2022 Public Opinion Survey Results

Residents generally appreciate the water resources in town. While many survey respondents did not consider drinking water a major concern at this time, they did express concern about the future effects of a changing environment on water resources.

5. Conditions and Trends

5.1. Introduction

Like much of Maine, the Penobscot has multiple freshwater resources, including lakes, ponds, streams, marshes, wetlands, aquifers, and groundwater, that provide drinking water, fish, and wildlife habitat, and/or recreation opportunities for residents and visitors. They also enhance life in the region simply by being there.

The Town of Penobscot is located within the Penobscot River watershed. A watershed is all of the land area from which storm water runoff drains to a given surface water. Much of the Town drains into the Bagaduce River Watershed and a smaller, northern portion of the Town drains into the Orland River Watershed, both of which drain into the larger Penobscot River Watershed. The western part of town drains toward the Penobscot River and directly into the larger watershed. The three main watershed areas are divided into smaller watershed designations that drain into the various creeks, streams, wetlands, rivers, and ponds in town.

5.2. Surface Waters

5.2.1. Ponds and Streams

There are three great ponds that lie completely or partially in the Town: Pierce's Pond, Wight's Pond, and Toddy Pond, a portion of which is located in town and also extends into Orland, Surry, and Blue Hill (see Table B-1). A great pond is defined in State statute as "any inland body of water which in a natural state has a surface area in excess of 10 acres and any inland body of water artificially formed or increased which has a surface area in excess of 30 acres." Though not a great pond, Turtle Pond is also within the Town's boundary and is included in this review. Last, although no portion of Alamoosook Lake is located within the Penobscot, a portion of its watershed (within the larger Orland River Watershed) is. Figure B-1 shows Penobscot's water resources.

The Maine Department of Environmental Protection (DEP) has classified all streams in Penobscot as Class B:

“Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.”

Currently, as of 2023, no lakes or streams in Penobscot are on the DEP Non-Point Source Priority List. There are two marine waters that are: Hutchins Cove and Littlefield Cove (see Chapter E, Marine Resources). Characteristics of streams and large, named wetlands are summarized in Table B-2.

Table B-1: Pond Characteristics

Name	Area (acres)	Shoreline (ft)	Avg (Max) Depth (ft)	Fishery
Pierce’s Pond	110	9,901	9 (12)	Largemouth bass, white perch, yellow perch, hornpout, eel, white sucker, minnows, golden shiner, banded killifish, pumpkin-seed sunfish. Pickerel introduced illegally. Alewife spawning habitat.
Wight’s Pond	135	28,328	13 (21)	Eel, white sucker, minnows, golden shiner, blacknose dace, pumpkinseed sunfish, largemouth bass, pickerel. Occasional brook trout in winter. Alewife spawning habitat.
Toddy Pond	2,408	44,293 (in-town)	27 (122)	Landlocked salmon, brown trout, splake, rainbow smelt, smallmouth bass, white perch. Alewife spawning habitat.
Turtle Pond	6	2,003	Unknown	Pickerel

Figure B-1: Water Resources of Penobscot

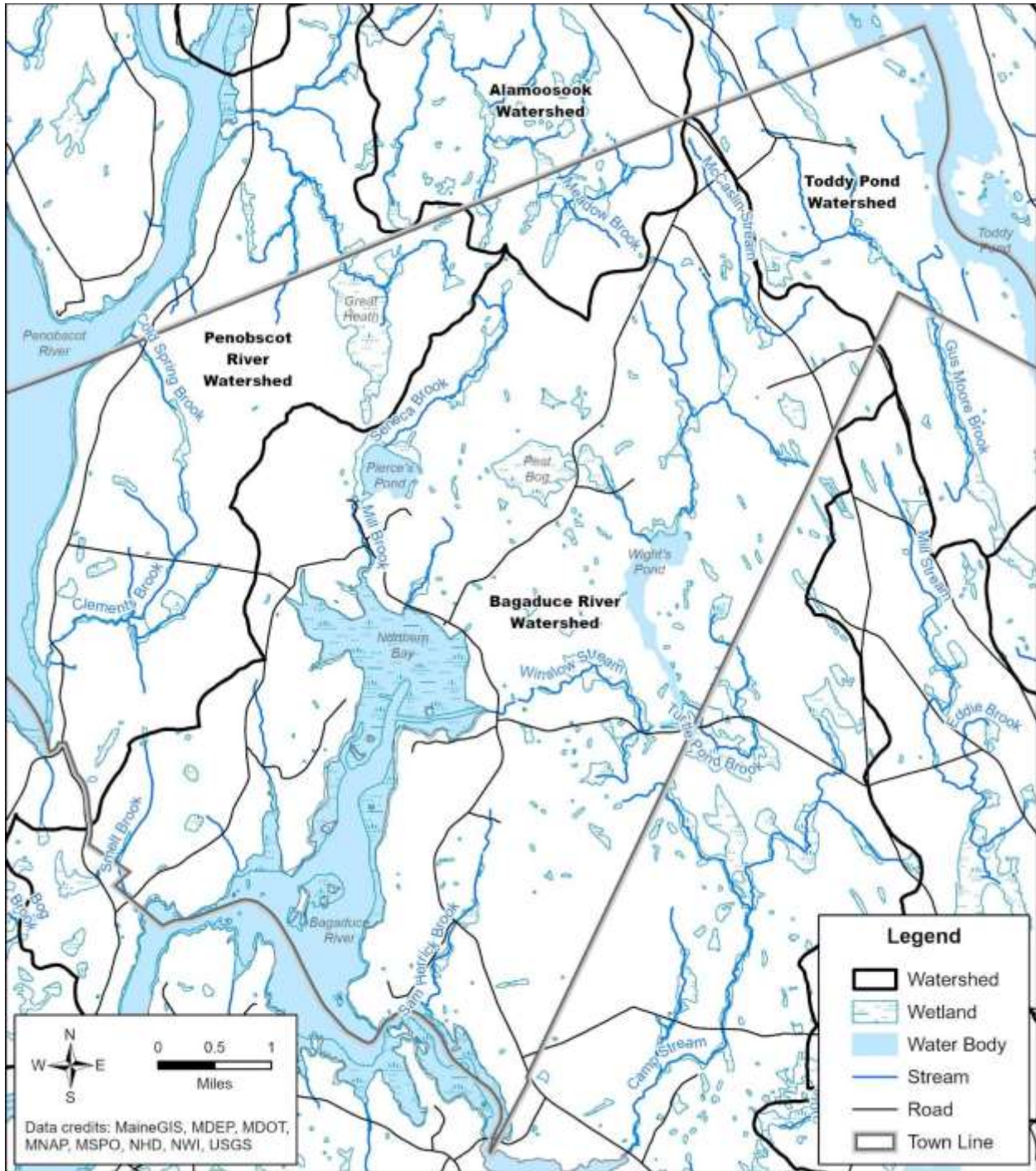


Table B-2: Streams and Large, Named Wetlands

Name	Length/ Size	Fish Species	Notes
Bagaduce River	(see Section E, Marine Resources)		
Camp Stream	5.8 mi	Baitfish, brook trout	Mostly marsh with inland wading bird and waterfowl habitat
Clement’s Brook	2.7 mi	Baitfish, brook trout (historically)	Current presence of brook trout unknown
Cold Spring Brook	0.8 mi	Unknown	
Gus Moore Brook	1.2 mi	Alewife, baitfish, brook trout	
McCaslin Stream	4.2 mi	Alewife, baitfish, bass, brook trout, pickerel	Tributary to Wight’s Pond; has a large swamp area/wading bird and waterfowl habitat.
Meadow Brook	1.5 mi	Baitfish, hornpout, brook trout (historically)	
Mill Creek	0.7 mi	Alewife, rainbow smelt	Outlet of Pierce’s Pond; stream becomes nearly dry during summer; productive rainbow smelt habitat.
Penobscot River	(see Section E, Marine Resources)		
Seneca Brook	2.0 mi	Baitfish, brook trout	Flows through large marsh with habitat for wading birds and waterfowl
Sam Herrick Brook	2.0 mi	Baitfish, brook trout	
Smelt (Cohen) Brook	0.6 mi	Baitfish, brook trout, rainbow smelt (historically)	According to local lore rainbow smelt stopped running after construction of a sawmill in 1800s
Unnamed	1.0 mi	Mummichog, rainbow smelt, brook trout (historically)	Located at head of Northern Bay, bordered by tax map 23 Lot 51 and 52-1
Winslow Stream	2.2 mi	Alewife, baitfish, bass, brook trout, pickerel, pumpkinseed	Outlet of Wight’s Pond; Flows into Winslow Cove on Northern Bay. Town owns 1.7 miles of stream frontage that has been conserved
Great Heath	273 acres	N/A	Owned by BHHT. Natural filter for water entering Pierce’s Pond
Peat Bog	100 acres	N/A	Privately owned. Commercially harvested until the 1980s

5.2.2. Culverts

Culverts and bridges serve two key purposes: they allow a stream to act like a stream by promoting “the natural movements of fish and wildlife and normal stream processes that

support healthy habitat in a diversity of flow conditions” and they divert surface water to reduce flooding on roadways minimizing safety risks to the road, surrounding areas and users.

According to state reports, early culverts were designed primarily to address the second function, often ignoring the natural flow of the stream, and thus blocking access to and from upstream sites for fish and other aquatic animals. Furthermore, independent studies indicate that current culvert designs often are based on outdated tidal and rainfall data and have not taken into consideration current and predicted impacts due to climate change. As a result, several culverts in town are compromised and anticipated changes in environmental conditions.

Some parts of Maine have seen a 30% increase in average precipitation for the period from 2005 to 2014 compared to previous decades, much of which is due to more frequent and more intense storms. Scientists predict this trend will continue. In Penobscot there have been multiple instances in recent years during heavy rainfall when streams have overwhelmed culverts and flooded roads. Flooding and the potential damage to culverts and roadways could affect travel for local residents in general and could prevent emergency vehicles from reaching some areas of town. Areas of concern include Mill Creek, Route 199 just south of New Road, New Road, and Smelt Brook. The state DOT work plan for 2023 includes work on the Route 199 culvert south of New Road as well as work on Route 166 near Gary’s Fuel.

The Town’s Road Commissioner does not maintain a map of the town-owned culverts but does regularly inspect the culverts and maintains them as needed. As of 2023 all are in good shape, according to the Road Commissioner. He expressed concerns over the increasing costs of maintaining/replacing culverts in town and about the effectiveness of using plastic culverts. Like many towns, Penobscot shifted away from metal culverts in recent years, hoping that plastic would have a longer life. Metal culverts rust, but the plastic ones are not holding up as well as hoped. They don’t rust, but they do break. The Road Commissioner is reviewing options.

5.3. Ground Water

According to the Maine Geological Survey (MGS), groundwater occurs in Maine in two primary kinds of aquifers, (1) sand and gravel, and (2) bedrock. Groundwater levels fluctuate systematically throughout the year as the resource is recharged in the spring from runoff and rain. Groundwater levels decline during the summer as available precipitation is

consumed by evapotranspiration processes (evaporation and transpiration through vegetation), and as groundwater in storage flows into surface water.

5.3.1. Sand and Gravel Aquifers

The Town has two identified sand/gravel aquifers (Figure B-1). The larger of the two is located near the Great Heath in North Penobscot and extends into Orland. The second, smaller sand/gravel aquifer is located near Mill Creek and the Town's salt/sand pile. Both of these are considered "significant" aquifers, yielding 1 - 50 gallons of water per minute. The aquifer adjacent to Mill Creek is located within an area of high risk due to land use and its boundaries are classified as impaired by DEP. The Town's former landfill [now closed] and the current solid waste transfer station are located near the Mill Creek aquifer. The boundaries of the Great Heath aquifer are classified as imperiled. Neither of these aquifers appear to be used currently as a source of drinking water.

5.3.2. Bedrock Aquifers

According to the Maine Geological Survey (MGS), the entire state of Maine is underlain with hard ledge (bedrock) composed of igneous (granite, etc.) and metamorphic (gneiss, etc.) rock that is highly fractured and contains groundwater. Fractured bedrock aquifers are recharged locally, and drawdowns from drilled wells also only affect the water table locally.

Statewide, about half of Maine's citizens use a private groundwater well for their household water supply, and in Hancock County, the percentage is about 73%. Most town residents in all sections of the Town get their water from drilled bedrock wells. The Maine Drinking Water program maintains a database of wells drilled in the state which pinpoints drilled wells in Penobscot. That database, however, appears to be missing some older drilled wells in areas around town.

5.3.3. Groundwater issues

The State identifies the following potential issues that can affect groundwater: low-yield bedrock wells, saltwater intrusion, withdrawal effects on surface water, and water quality. Low-yield bedrock and withdrawal effects are not current or anticipated concerns in Penobscot. Saltwater intrusion is not currently a concern but could become a concern with climate change. Water quality is a current and future concern and can be affected by both naturally occurring (e.g., arsenic, radon) and manufactured (e.g., hydrocarbons, pesticides) contaminants.

The Safe Drinking Water Act requires public water systems to monitor for 87 chemicals. Although the state requires regular testing for public systems, such as the elementary school system and the South Penobscot Water Association, there is no statewide program for testing private wells. The Maine Center for Disease Control recommends that private wells be tested annually for bacteria and every five years for arsenic, fluoride, uranium, radon, lead, and manganese. The Maine Environmental Public Health Testing Network reports that many of the wells in Penobscot that have been tested show levels higher than the State guidelines for naturally occurring arsenic, radon, and uranium. Manufactured threats to surface and groundwater are discussed further below.

5.4. Public Water Systems

The state Drinking Water Program lists two public water systems in town: the Penobscot Elementary School system, which has a 162-foot drilled well, and the South Penobscot Water Association, which has a 300-foot drilled well (Figure B-1). The state classifies them differently. The school system is considered a non-community, non-transient system; the association's system is listed as a community system.

The water association was created after gasoline from an underground tank at Northern Bay Market seeped into the ground in the early 1980's, initially contaminating four wells in 1983, but eventually spreading to contaminate four more wells by 1985. The South Penobscot Water Association formed in 1989 when a new well was drilled a half mile away from the contamination source to provide water to the homes whose wells were contaminated. The South Penobscot Water Association currently has 15 hook-ups and passed its last full inspection in August 2019. Some of the water lines from the SPWA well cross underneath Route 175.

The Town also maintains wells at the Fire Station and at the Town Hall. The Town Hall shares a well with map 23 lot 38. There does not appear to be any maintenance agreement. There has been no testing of this well according to the Select Board. Recent construction at the adjacent site may have affected the water flow to the Town Hall.

5.5. Potential Threats to Water Quality/Quantity

The 1997 Penobscot Comprehensive Plan listed timber harvesting and road and home construction as main threats to Penobscot's lakes, ponds, streams, and wetlands. Currently, the state identifies leaking underground fuel tanks, malfunctioning septic systems, development, and logging as key threats. It also identifies invasive species as the latest

threat to Maine's lakes and ponds. The effects of climate change also pose challenges for many communities and especially for coastal communities such as Penobscot.

5.5.1. Climate Change

The State has identified a number of threats from a changing climate, several of which could directly affect water resources. According to 'Municipal Climate Adaptation Guidance Series: Drinking Water,' sea level rise can threaten drinking water wells in coastal areas in two ways. First, it will expand flood zones which put more well heads at risk for saltwater intrusion from storm surge and coastal flooding. Second, as sea levels rise, naturally salty shoreline groundwater will move inland and, as a result, the depth of fresh water within an aquifer will shrink. The aquifer at Mill Creek sits near a tidal area and could experience such impacts in the event of significant sea level rise. The effects of sea level rise are discussed in other sections of this plan including Marine Resources (Section E) and Natural Resources (Section C).

Climate predictions also indicate an increase in precipitation and an increase in the intensity of storms that will result in predictable flooding in certain areas. Flooding causes several threats to water resources. Intense rainfall can result in significant runoff into streams, overwhelming culverts as has happened several times in recent years.

Flood waters also wash sediments, pathogens, pesticides, and salt into surface water bodies. Although the Town does not have a municipal water system and does not rely on surface water for either of the public systems in town, such contamination could migrate into bedrock fracture aquifers. Contamination would also affect other living creatures that depend on freshwater habitats and could change the nature of the surface water bodies themselves.

More extreme flooding can also impact groundwater resources with more rainwater running off as storm water, recharging surface water resources but reducing the recharge to groundwater. Predicted changes in the timing of precipitation - with wetter springs and longer dry spells in the summer - as well as decreased snowfall in winter, may also lead to decreases in groundwater recharging.

Penobscot has participated in the National Flood Insurance Program since 1975. The Town updated its flood Plain Management Ordinance on March 8, 2016, which became effective on July 20, 2016. The flood zone maps were created at the same time and, according to the Federal Emergency Management Agency website, they have not since been updated as of Summer 2023.

5.5.2. Future Development

The population in town is not expected to grow significantly in the next decade and what development is occurring is taking place mainly along existing roads. Some new homes, however, have been constructed on newly created roads in town. Although informal assessments of the Town's water supply indicate that there is plenty of water available, an increase in development could place more pressure on those resources. Future development is regulated by the Town's Land Use Regulations, Shoreland Zone Ordinance, and Subdivision Ordinance, which address water quality protection in their regulations for siting new structures.

5.5.3. Logging

Timber harvesting is a traditional Maine industry that is important to the State's economy and has moderate importance to the Town's economy. Over-logging, however, can have detrimental effects on the landscape and on water resources. Widespread overharvesting can interrupt the normal water cycle and affect the climate, along with carbon sequestration. Locally, harvesting too close to surface water can result in erosion, which can allow dirt and other materials to flow into local water bodies. The Maine Forest service oversees logging activities in Town. Logging in the shoreland zone is also regulated by setback requirements in the Town's Shoreland Zoning Ordinance.

5.5.4. Malfunctioning Septic Systems

The Town works with the Maine Department of Marine Resources (DMR) and the Department of Environmental Protection to monitor the waters of Northern Bay in the Bagaduce River. DMR and DEP conducted the 12-year Sanitary Survey on June 7, 2022, which was a review of septic systems that were identified as malfunctioning in the 2010 survey. The Town Plumbing Inspector performed dye tests on July 22, 2022, and found one complete system failure and one gray water issue. The Sanitary Survey only focused on the area around Northern Bay and did not include the entire town.

There is currently no process for monitoring septic systems in town outside of the work done with DMR and DEP. The Town has an effective way to deal with complaints through its Plumbing Inspector who investigates each complaint and determines a course of action. Town ordinances cite water quality and include regulations on siting and installation of new septic systems, but the Town has no program to monitor existing systems.

5.5.5. Invasive Species

Invasive species are the most recently identified threats to Maine lakes. There are no reports of invasive species in any of the Town's ponds, but watermilfoil has been identified at Alamoosook Lake in Orland. There is no informational signage at Pierce's Pond promoting preventive measures such as cleaning of boats or information about invasive species. The Toddy Pond Association has run an inspection program at the boat launch in Orland and there are informational signs at that boat launch.

5.6. Past and Present Management Activities

Multiple private septic systems were replaced in the 1980's under a state assistance program. The overboard discharge (OBD) from the Penobscot Community School was removed in 2010. The OBD located at the former Penobscot Nursing Home was permanently disabled in 2018.

As noted in the Marine Resources section of this plan, the Town works with DMR and the DEP to monitor and address issues arising in Northern Bay on the Bagaduce River. Other management activities have included the work done at Pierce's Pond and Wight's Pond to improve passage for alewife migration into those ponds.

5.7. Existing Water Protection and Preservation Measures

The Town's Shoreland Zoning Ordinance and its Subdivision Ordinance include development requirements to protect existing water resources, including, in the Shoreland Zoning Ordinance, the establishment of a Resource Protection District and a Stream Protection District. Other ordinances also include regulations to protect water resources when siting specific structures such as communications towers and wind turbines.

6. Analysis

6.1. Are there point sources (direct discharges) of pollution in the community? If so, is the community taking steps to eliminate them?

The Town has addressed point source pollution in the Northern Bay, identified in the 2010 Sanitary Survey (see also Section E, Marine Resources). The four previously identified sources have been eliminated.

Both the 2010 and 2022 surveys were focused on Northern Bay and did not address the rest of the Town, but there is currently no other known point source pollution in Penobscot.

6.2. Are there non-point sources of pollution? If so, is the community taking steps to eliminate them?

There are two areas that are included in the 2023 DEP Nonpoint Source Watershed Priority List – Marine Waters. These are Littlefield and Hutchins Coves located in Northern Bay. The local Shellfish Committee firmly believes that wildlife is the source of this fecal contamination due to the high concentration of deer, waterfowl, and turkeys that frequent this area. There are few houses in the area and these residences have been inspected multiple times with no sign of malfunctioning septic systems. There is a limited pool of grant funds available for DNA testing to determine if the source is animal or human based. The Shellfish Committee believes that the funds would be better utilized by towns where human contamination is possible, if not probable.

There is a gravel pit and the Town's salt/sand pile located in close proximity to Mill Creek, a tidal stream that drains Pierce's Pond. The Town's salt/sand pile also sits atop one of two sand/gravel aquifers in town, the boundaries of which are classified as impaired. The Select Board had no knowledge of any Town or State testing done at Mill Creek to monitor the salt/sand pile. There has been preliminary discussion regarding improvements around Mill Creek that would include construction of a salt/sand storage shed, either at that site or at a different location. The project would also include the possibility of upgrading a bridge and culvert. However, this would likely be a long-range project that will not immediately address the issues with the stream crossing or the salt issue. See also Section K, Public Facilities and Services.

The former Town landfill also is located near Mill Creek. The 2.5-acre landfill was closed in 1995 as required by DEPs Closure and Remediation Program. The site has been monitored by DEP since its closure.

The issue of malfunctioning septic systems remains a troubling one. The state identifies malfunctioning septic systems as one of the key threats to water resources, but the Town has no mechanism to monitor/inspect systems in town. Town ordinances include regulations on siting and installation of new septic systems, but the Town has no program to monitor existing systems. The current system relies on complaints of malfunctioning systems. Upon receiving a complaint, selectmen refer the issue to the appointed Town Plumbing Inspector who investigates and determines a course of action.

6.3. How are groundwater and surface water supplies and their recharge areas protected?

The Town does not operate a municipal water system and there does not appear to be a need or interest by Town officials or residents to develop one. The Town's Shoreland Zoning Ordinance and its Subdivision Ordinance contain specific regulations that set minimum distances for construction near the Town's water bodies including wetlands, streams, and ponds.

Each of the two state-identified public water systems in town has a drilled well, which is protected by a buffer zone. The system at the elementary school is adequate to accommodate any anticipated increase in demand during the next ten years.

The South Penobscot Water Association has the capacity in its system to expand but is working now to repair and upgrade the existing system.

The Town should be wary of permitting too many wells in one area. Although groundwater appears to be abundant in Penobscot, pressures from development, climate change and other activities could affect groundwater supplies locally.

There appear to be gaps in the information regarding the Town's water resources. While State maps clearly locate water resources, their characteristics, and boundaries, we found little current information on what is going on in those waters. Much of the information included in this report, particularly about the smaller streams in town, comes from local observations. Although local sources can be more accurate since they come from direct observation, they can also be incomplete.

There currently are no measures in place to monitor the Town's surface waters.

6.4. Do public work crews and contractors use best management practices to protect water resources in their daily operations (e.g., salt/sand pile maintenance, culvert replacement street sweeping, public works garage operations)?

The only public work crew in town is the road crew, which is up to date (2020) on all DEP training and certifications and adheres to Best Management Practice (BMP) practices when practical.

The Maine Department of Transportation (MaineDOT) flushes the storm drains on the bridge spanning Winslow Stream in the spring when water flows are high.

MaineDOT removes the salt/sand that has accumulated over the winter from roads, bridges, and catch basins. On the coast, this work is scheduled for the spring so that high water flows will help disperse the debris. The bulk of the material is removed by using a shovel, rake, and broom but the remainder is flushed into the waterway. Unfortunately, spring is the time for annual migration and spawning of many anadromous fish in Maine; rainbow smelts spawn and elvers and alewives migrate to Wight's Pond. The debris washed into the brook are superfine materials that can smother smelt egg beds. What other things are being washed into the stream is not known. Discussions are underway with MaineDOT and DMR regarding how to get this data into the DOT system.

6.5. Are there opportunities to partner with local or regional advocacy groups that promote water resource protection?

The Town is currently working with other area towns as part of a climate change resiliency group to develop plans to protect water resources in anticipation of the effects of climate change. In addition, the Town has worked and continues to work with a number of groups on water-related issues:

The Bagaduce Watershed Association - The mission of the Bagaduce Watershed Association is to protect and promote the diverse ecosystem and environmental health of the Bagaduce River through community awareness and involvement.

Downeast Salmon Federation provides marine biologists and staff to assist with the educational public outreach programs of the Alewife Committee.

The Toddy Pond Association - a 501(c)(3) nonprofit organization whose mission it is to protect Toddy Pond and its watershed through responsible stewardship and education so that we and future generations may enjoy its beauty.

Maine Coast Heritage Trust and **Blue Hill Heritage Trust** are actively purchasing waterfront parcels on our ponds, the Bagaduce River, the Penobscot River, and brooks or streams that are environmentally sensitive or important alewife habitat.

Maine Center for Coastal Fisheries provides marine biologists that assist with the educational public outreach programs of the Alewife Committee as well as conducting scientific research using plankton tows, purse, and beach seine tows to identify marine species, and monitoring the water temperature at pond outlets, within the stream, and at the head of tide.

Penobscot Shellfish Conservation Committee monitors the DMR water quality test results for salinity and fecal contamination levels of the Bagaduce and Penobscot Rivers.

Maine SeaGrant conducted plankton tows on the Bagaduce River in 2017.

7. Goals, Policies, and Strategies

Goal: To protect the quality and manage the quantity of the Town's water resources, including lakes, aquifers, great ponds, estuaries, rivers, and coastal areas.

Policy 1: Protect current and potential drinking water sources.

Strategies:

- a) Work with the State to quantify groundwater resources.
- b) Consider enacting protection mechanisms for public wellheads and aquifer recharge areas.
- c) Review and update existing ordinances as needed to ensure regulations are compliant with state requirements and sufficient to protect water resources, including potential sources of drinking water.
- d) Continue to work with State agencies and partner associations to assess the Town's water resources and develop accurate data regarding the quantity and quality of those resources, including groundwater resources.
- e) Monitor the Federal Flood Insurance Program for updates to the local flood zone maps and update information, as necessary.
- f) Develop and distribute information regarding testing of private dug and drilled wells.
- g) Determine the need for monitoring and/or regulation of water extraction for both commercial and individual use to ensure development does not exceed localized groundwater capacity.

Policy 2: Protect significant surface water resources from pollution and improve water quality where needed.

Strategies:

- a) Share information about threats to water resources from human activity, including invasive species, fertilizer use and malfunctioning septic tanks. This can be done by providing contact information, in places such as at the Town Office, for water quality

best management practices from resources including Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, and others.

- b) Review and consider amending local land use ordinances, as applicable, to incorporate low impact development standards.
- c) Review and consider amending ordinances to increase protection of surface water resources.
- d) Review municipal operations for their impact on water resources.
- e) Work with State agencies to verify actual current water resource conditions and to update State data.
- f) Encourage local volunteer monitoring for invasive species at Pierce's Pond.
- g) Consider the need for a Commercial Site Plan with provisions to protect surface waters as well as current and potential drinking water sources.

Policy 3: Minimize pollution discharge.

Strategies:

- a) Share information about the dangers of malfunctioning septic systems.
- b) Work with State agencies to monitor water quality in the Town's great ponds and streams to determine whether pollution is a concern.
- a) Consider adopting or amending local land use ordinances as applicable to incorporate stormwater runoff performance standards consistent with:
 - o Maine Stormwater Management Law and Maine Stormwater regulations (Title 38 M.R.S.A. §420-D and 06-096 CMR 500 and 502).
 - o Maine Department of Environmental Protection's allocations for allowable levels of phosphorus in lake/pond watersheds.
 - o Maine Pollution Discharge Elimination System Stormwater Program

Policy 4: Cooperate with neighboring communities to protect water resources.

Strategies:

- a) Continue to work with the Towns of Brooksville and Sedgwick on alewife restoration on the Bagaduce River.
- b) Develop relationships with other neighboring towns where there are shared water resources.

Policy 6: Improve water flow at stream crossings.

Strategies:

- a) Continue to work with the Maine Department of Transportation, other state agencies, and local associations to improve stream crossings.

Policy 7: Prepare for impacts from climate change that could affect water resources.

Strategies:

- a) Continue the Town's Climate Resilience Committee to assess the potential effects of changing environmental conditions and to develop plans to address those threats.
- b) Review all ordinances to ensure they address future impacts related to climate change.
- c) Tap state resources to help local communities address climate change.

Policy 8: Improve the accuracy and awareness of water resource data for the Town.

Strategies:

- a) Partner with HCPC to maintain a map of town-owned culverts.
- b) Coordinate with HCPC to update Maine Drinking Water Program database.
- c) Create informational signage at Pierce's Pond, and other necessary locations, that promotes preventive measures for invasive species.

Chapter C: Natural Resources

1. Purpose

This chapter provides analyses and a detailed overview of the town's vital natural resources, and addresses issues related to wildlife, fish habitats, and other important ecological systems. Development on or near these vital resources could imbalance the natural systems and negatively affect many quality-of-life issues such as: clean drinking water, protection from flooding, and clean air. Specifically, this chapter will:

- a. Describe Penobscot's critical natural and scenic resources.
- b. Assess the effectiveness of existing efforts to protect and preserve these resources.
- c. Predict future impacts to these resources by growth and development.

2. Key Findings & Issues

The Town of Penobscot supports a number of high-quality habitats for critical natural resources including wetlands, wildlife, and fisheries habitat, shoreland, riparian habitats, scenic vistas, and unique natural areas. The Town surrounds the Northern Bay of the Bagaduce River, a rich estuary identified by the state as having statewide ecological significance. The Town's natural areas contribute to its rural character and are valued for their open space and the wildlife they support. A steady rise in the water level of Northern Bay has already become apparent and is producing some erosion, affecting bird habitat, and impacting other ecosystems.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 plan highlighted the importance of the Bagaduce River as having state and national significance for its critical wildlife habitat that supports over 25 species of wildlife. The plan noted a nesting site for bald eagles, which were federally listed as endangered at that time and remain protected by federal law. The plan also highlighted the lack of a thorough inventory of Penobscot's natural areas. Natural resources were valued as an important part of the Town's rural character.

4. 2022 Public Opinion Survey Results

Survey respondents were overwhelmingly in favor of protecting coastal land, ponds, streams and rivers, wetlands, wildlife habitats, aquifers, and scenic views in Penobscot (84-94%). Some participants noted that current regulations are sufficient for protecting natural

resources for now. Others noted that residents need to be able to earn a living from the Town's natural resources, while still others stated the Town needs to balance development with resource protection.

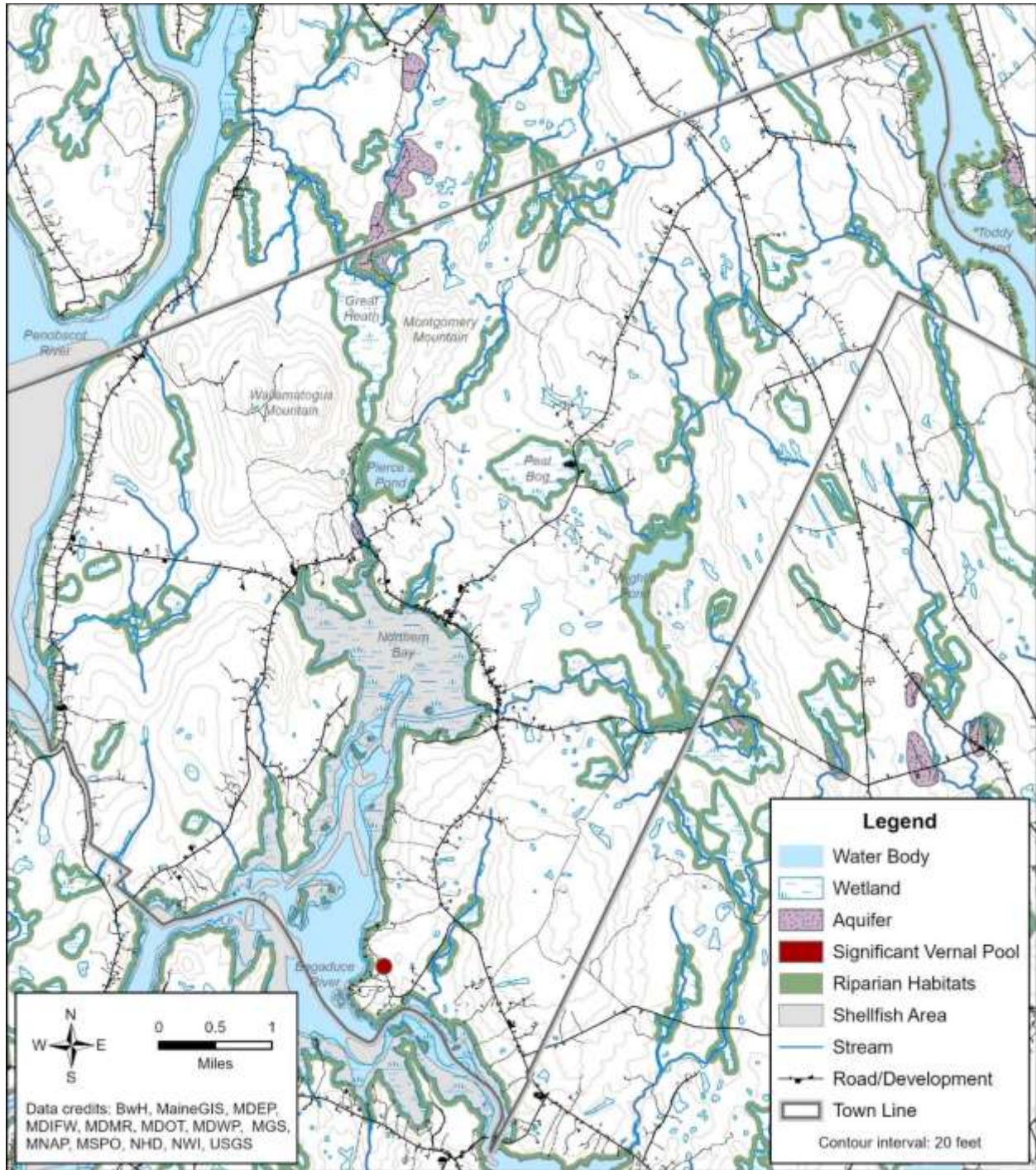
5. Conditions and Trends

5.1. Water Resources, Wetlands, and Riparian Areas

The Water Resources and Riparian Habitats map (Figure C-1) shows streams, lakes, riparian (shoreline) and coastal habitats, vernal pools, and aquifers. Riparian habitats are defined as 75-foot buffers along streams and 250-foot buffers along lake shores, wetlands, and the coast.

Wetlands are a critical natural resource that help control stormwater runoff and flooding, control and filter sedimentation into streams, recharge aquifers, and provide important wildlife habitat. Major wetlands include the Great Heath, Wight's Heath, and the Peat Bog. The tidal marsh of Northern Bay buffers stormy seas, slows shoreline erosion, and absorbs excess nutrients before they reach the ocean. The tidal bay also provides vital food and habitat for crab, clams, juvenile fish and offers shelter and nesting sites for several species of migratory waterfowl and a wide variety of other birds.

Figure C-1: Water Resources and Riparian Habitat



Most of the Town has not been professionally surveyed for wetlands. The National Wetland Inventory, based on analysis of aerial images, is incomplete but suggests there are at least

3,100 acres of wetland in the Town, including estuarine wetlands in Northern Bay and along the Penobscot River. These wetlands cover 7.2% of the Town's land area. Hydric soils are another indicator of wetlands, although not all hydric soils are in wetlands. An analysis of soil maps indicates there are approximately 9,986 acres of hydric soil in the Town, or about 39% of the Town's land area of the Town (Figure C-2). The Wetlands Characterization map in Figure C-3 shows wetlands that have been evaluated and prioritized based on six different ecological functions:

1. Runoff/flood-flow alteration
2. Erosion control/sediment retention
3. Finfish habitat
4. Shellfish habitat
5. Plant and animal habitat
6. Cultural/educational uses

Each wetland on the map is coded according to the total number of functions it provides. The map also differentiates wetlands that provide some sort of habitat and wetlands that provide flood flow or sediment control functions.

5.2. Stream Habitat and Barriers

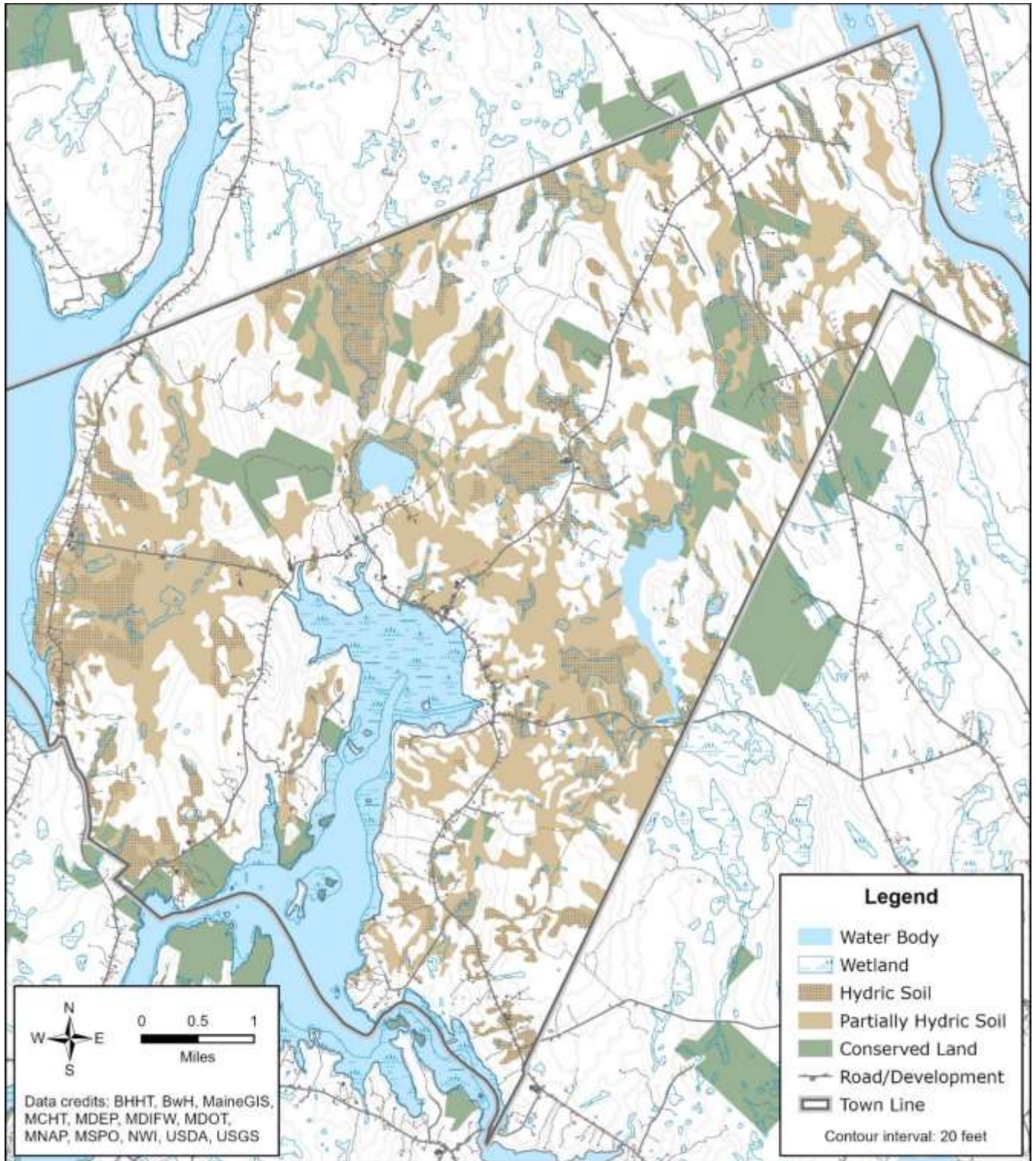
The Stream Habitats and Barriers map (Figure C-4) shows streams, priority streams and upland habitat for brook trout, streams currently and historically used by rainbow smelt, ponds with documented alewife habitat, and road-stream crossings. Several streams in Penobscot have been identified by the Maine Department of Inland Fisheries and Wildlife (MDIFW) as priority brook trout habitat, including Moore Brook, a tributary of Camp Stream (in Blue Hill), and Sam Herrick Brook. Smelt are also seasonally present at the outlets of Mill Creek and Winslow Stream into Northern Bay. Smelt historically ran at the outlet of Smelt Brook (mistakenly labeled Smell Brook on most maps) into Northern Bay. Although not shown on the map, alewife runs have been restored along Winslow Stream (to Wight's Pond) and Mill Creek (to Pierce's Pond). Rainbow smelt and alewife are federally listed "Species of Concern." Elvers are also an economically important fish found in lower streams.

Wherever a road crosses a stream, a culvert or bridge is used to allow the stream and the wildlife it supports to pass beneath the road. However, in some cases the culvert or bridge are undersized, poorly placed, or damaged in a way that prevents wildlife from using the culvert. For example, culverts may be perched on their downstream end due to poor

placement or erosion, preventing fish and other species from moving upstream. The Stream Barriers map (Figure C-4) shows stream crossings and dams in Penobscot and indicates whether they present a barrier to fish passage. These are also listed in Table C-1. These data are based on recent local assessments of crossings rather than State assessments, which are up to 15 years old in some cases. A culvert under Southern Bay Road near Johnson Point, a culvert at Mill Creek, and a culvert at Smelt Brook are all potential barriers to fish passage.

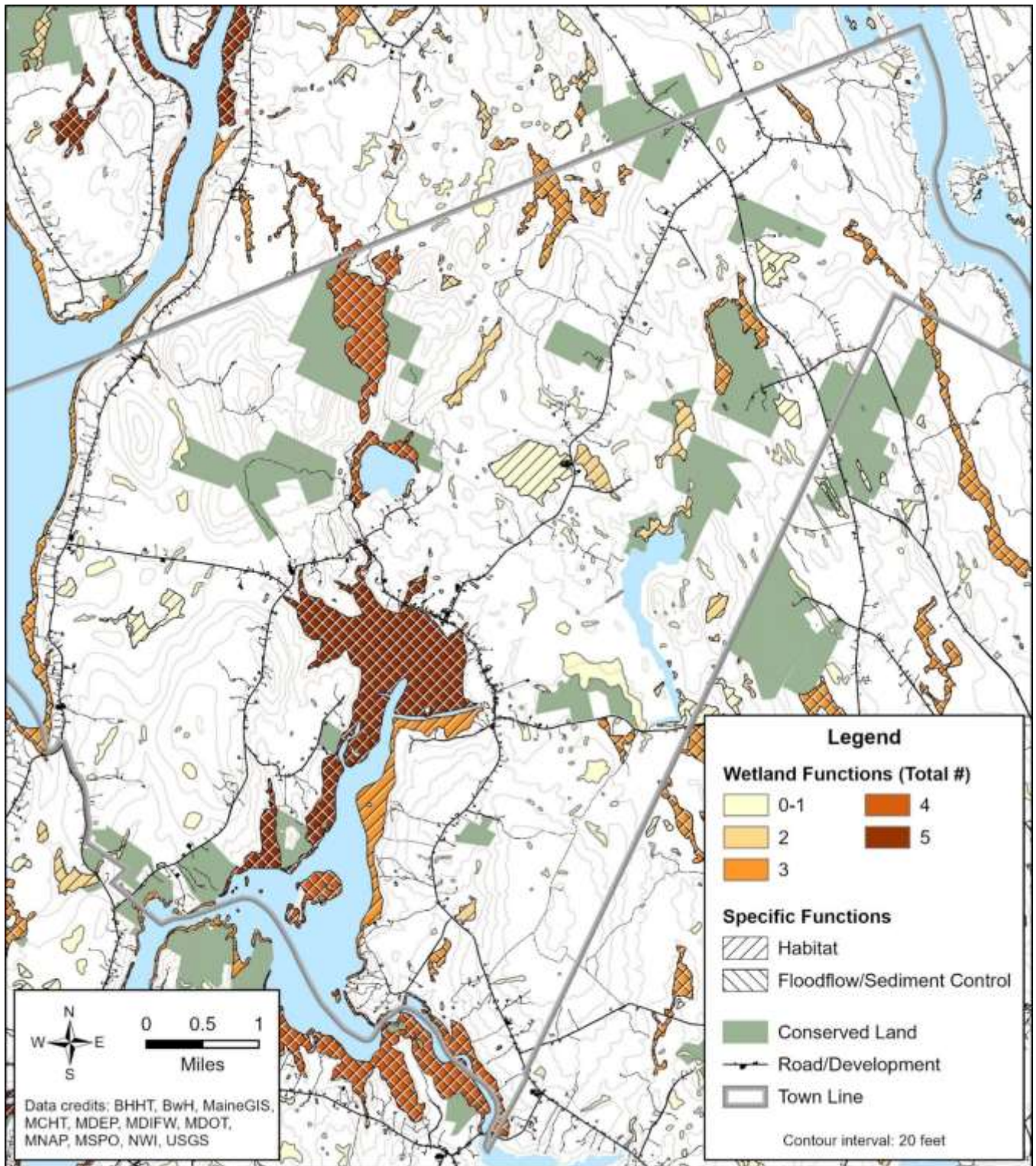
DRAFT

Figure C-2: Hydric Soils



DRAFT

Figure C-3: Wetland Characterization



DRAFT

Figure C-4: Stream Habitats and Barriers

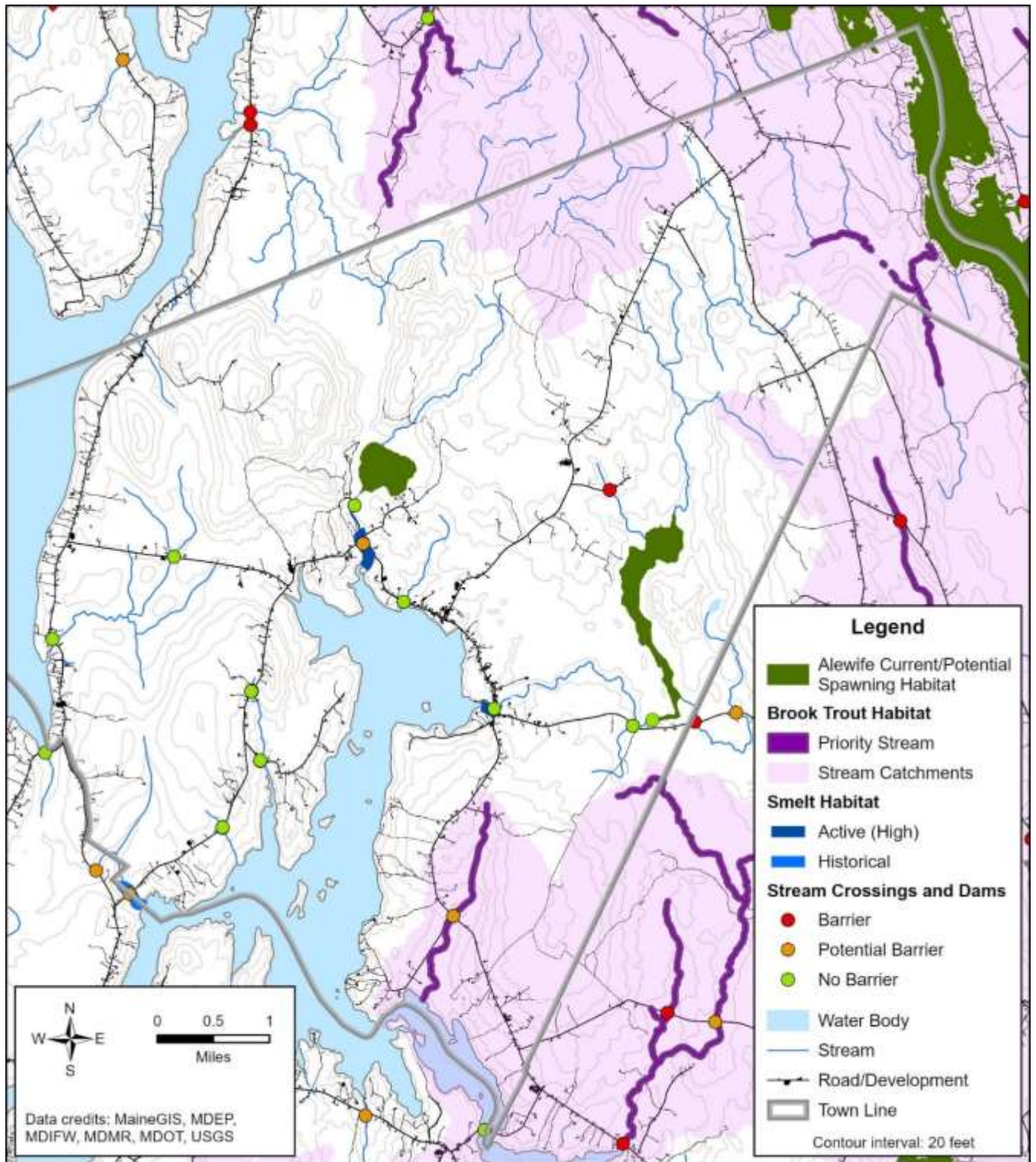


Table C-1: Barriers to Stream Passage

Stream	Road	Crossing Type	Barrier Status	MaineDOT Site ID
Smelt Brook	Dunbar Rd (Rte. 199)	Culvert	Potential Barrier	50643
Unknown	McCaslin Rd	Culvert	Barrier	50712
Mill Creek	Bayview Rd	Culvert	Potential Barrier	50161
Herrick Brook	Southern Bay Rd	Culvert	Potential Barrier	50000

Source: Maine Stream Habitat Viewer

5.3. Important Wildlife Habitat

Habitat refers to areas that provide the resources and conditions that plants and wildlife need to survive and reproduce, including food, water, shelter, proximity to mates, and protection. High value animal and plant habitats are shown in Figure C-5.

Penobscot’s wetlands provide habitat for finfish, shellfish, amphibians, inland wading birds, among other wildlife and plants. Wetlands sustain a diversity of plant and animal life disproportionate to their size. Vernal pools are especially important for amphibian reproduction. Only one significant vernal pool has been documented in Penobscot, off Johnson Point Road, although it is likely others are present. Penobscot’s upland areas are predominantly forested and support large animals such as white-tailed deer, black bear, bobcat, moose, coyote, river otter, fisher, wild turkey, ruffed grouse, woodcock, snowshoe hare, other small mammals, and numerous species of migratory birds. The Town has several deer wintering areas.

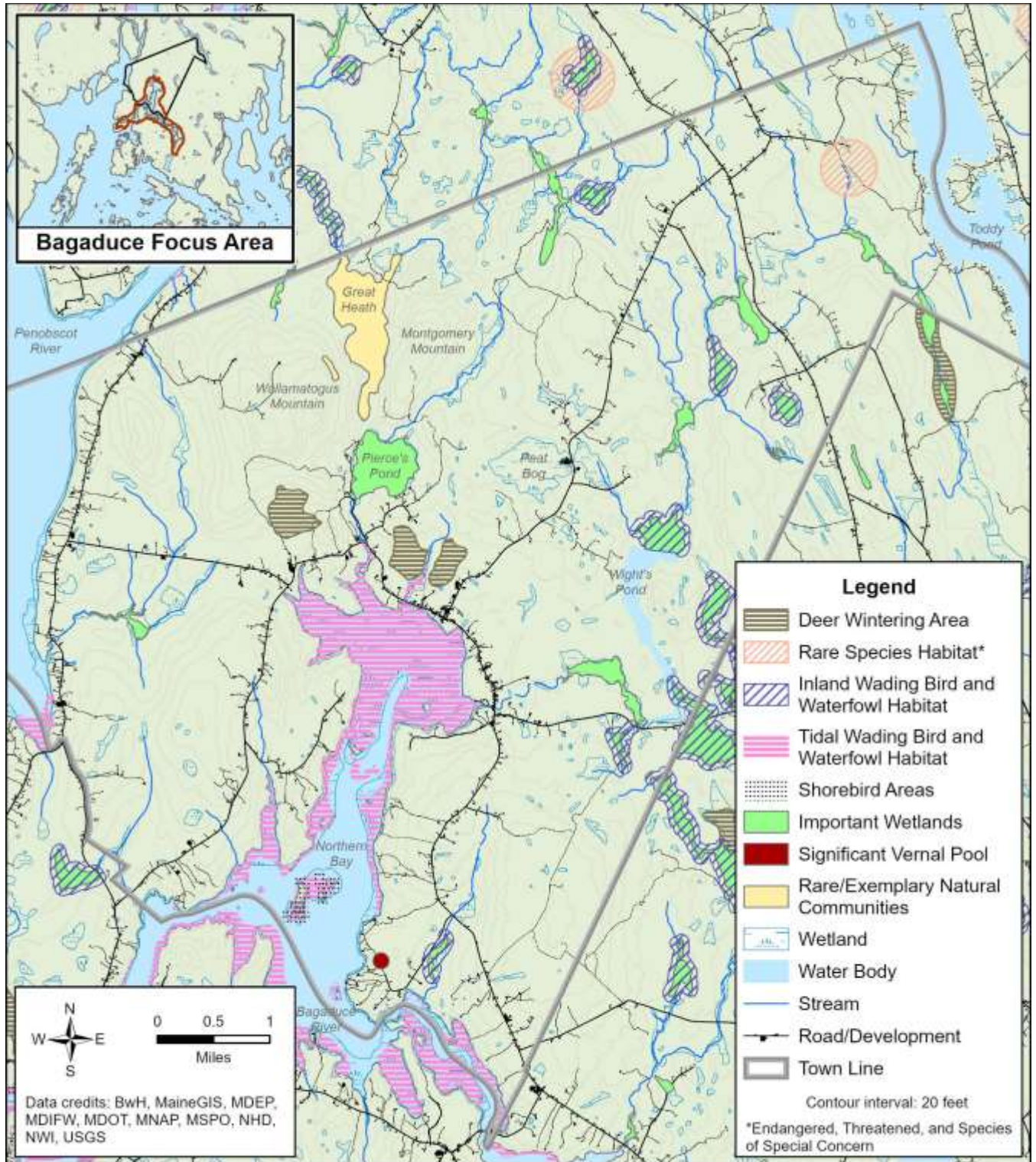
The tidal flats and shores of the Bagaduce and Penobscot Rivers provide significant habitat for tidal wading birds, waterfowl, shellfish, and plant life. The Bagaduce itself is a State Focus Area of special ecological concern. Several islands at the mouth of Northern Bay provide significant staging habitats for shorebirds, which are areas that can be used for shorebird feeding, roosting, and staging during migration. Bald eagles are also known to nest on islands of Northern Bay. The tidal shore of the Penobscot River is also part of a corridor for Atlantic salmon.

Penobscot also contains habitat for endangered, threatened, or special concern species. “Endangered species” are species in danger of extinction in all or a part of their range while “Threatened species” are likely to become endangered within the foreseeable future. ‘Species of Special Concern’ are species that are rare in Maine but are not considered

threatened or endangered. Other than federally listed smelt and alewife discussed above, Penobscot has been identified as having habitat for two species of special concern, the wood turtle, and the Rufa Red Knot. The Red Knot is also federally listed as Threatened.

DRAFT

Figure C-5: Important Animal and Plant Habitat



DRAFT

5.4. Important Plant Habitat

There is currently no official record or systematic inventory of Penobscot's plant life, although the Maine Natural Areas Program (MNAP) maintains data on locations where rare plants have been found in the state. In 2022, MNAP provided data to the Town stating "No plant species listed as endangered, threatened, or of special concern have been documented within this town yet." As the statement implies, this does not mean that rare plants are not present or will not be identified in the future.

Wetlands support a wide variety of native plants. There are emergent plants and forests in the tidal areas of Northern Bay as well as forested shrub and scrub areas on higher ground. There are also aquatic beds of floating or submerged plants in the open waters of the Bagaduce River and inland ponds. Other areas with potential for rare plants and ecosystems include the tidal marshes of the Northern Bay, the shores of the Bagaduce River, and large peat bogs (e.g., the Great Heath and former Acadia Peat bog), which also collect rain and storm water and feed the Town's aquifers.

5.5. Natural Communities

MNAP has classified different natural communities that collectively cover the state's landscape into 104 different types, which are ranked according to their rarity on a scale of one (rare) to five (common). Three areas containing rare or exemplary natural communities have been identified within the Town (Figure C-5), including White Cedar Woodland (S2) on Wallamatogus, a Raised Level Bog Ecosystem (S4) at the Great Heath, and Tall Grass Meadow at the north end of the Great Heath (S2). A rating of S2 indicates the community type is imperiled in Maine because of rarity (6-20 occurrences across the state) or because other factors make it vulnerable to further decline. A rating of S4 indicates the type is apparently secure in Maine, although the S4 communities identified in Penobscot are considered outstanding examples of these types.

5.6. Focus Areas

Focus Areas are natural areas of statewide ecological significance containing unusually rich concentrations of at-risk species and habitats. The Bagaduce River has been identified as a Focus Area (Figure C-5) because it is one of only a few places in Maine where horseshoe crabs are known to breed and because it is one of the most productive estuaries in Maine. The intertidal flats beyond the Narrows include more than 1,000 acres of habitat for soft-shell clams, marine worms, and other invertebrates. The river and Northern Bay also

provide more than 2,700 acres of breeding grounds, feeding areas, nesting areas, and migratory resting areas for tidal wading birds and waterfowl. The waters around Youngs Island and Battle Island in Northern Bay include some of the most valued foraging grounds on the Downeast coast.⁵ Northern Bay once had abundant eelgrass beds, but these have severely diminished due to invasive green crabs and warming waters.

As a significant ecological area, the Bagaduce provides critical ecological services, including filtering of sediment and nutrients from stormwater before it is discharged to the ocean, high quality habitat, supporting biodiversity, significant habitat for numerous bird species, a nursery for juvenile fish and shellfish, and nutrient export to marine food webs. The Bagaduce also provides economic contributions, acting as a protective buffer for storm surge, contributing to the recreational value of the region, providing scenic vistas that raise property values, and supporting marine resource industries. Penobscot resident Tate Yoder, with Maine Coast Heritage Trust (MCHT) and Maine Center for Coastal Fisheries, produced a short film titled *A Watershed Moment* (Maine Center for Coastal Fisheries,) about the Bagaduce River and recent alewife restoration efforts.

5.7. Undeveloped Habitat Blocks and Connections

While some animals spend their entire lives within a small area, others like deer, moose, and bear need large areas of unbroken habitat to find enough food, shelter, and mates. The Undeveloped Habitat Blocks & Connections map (Figure C-6) shows large areas of undeveloped land greater than 100 acres along with stretches of road that are likely to be used by wildlife crossing from one block to another. These crossings include roads in riparian areas that are likely to be used by wetland dependent species. The map also shows conserved lands. Maintaining a network of large rural open spaces and crossings protects not only valuable habitat, but also future opportunities for forestry, agriculture, and outdoor recreation. Intact forests and natural open spaces also improve water quality, reduce runoff, and sequester carbon. Most of the development in Penobscot is concentrated around Northern Bay, North Penobscot Rd (Rte. 199), and along the Town's boundaries. This has resulted in large blocks of undeveloped land, the largest over 11,000 acres, that give the Town its rural character and support the abundance and diversity of wildlife.

5.8. Co-Occurrence

The Natural Resource Co-occurrence map (Figure C-7) shows where high value natural resources are concentrated in Penobscot, including high value habitats and wetlands, buffer zones around water features, important natural communities, and areas of undeveloped land. The map is meant to show where these features overlap the most (or co-occur) and

⁵ Beginning with Habitat, 2022

provides a generalized view of conservation value. Some especially rare or important features were weighted higher in the calculation. The areas of high co-occurrence include: the Great Heath, Pierce's Pond, Clement's Brook, Meadow Brook, Winslow Stream, Seneca Brook, Wight Pond, Wight's Heath, the Peat Bog and Camp Stream Bog. The Bagaduce River in Penobscot is also a Focus Area of Statewide Ecological Significance, showing an unusually rich convergence of rare plant and animal occurrences, high value habitat, and relatively intact natural landscapes. These give the Town much of its rural character.

DRAFT

Figure C-6: Undeveloped Habitat Blocks and Connections

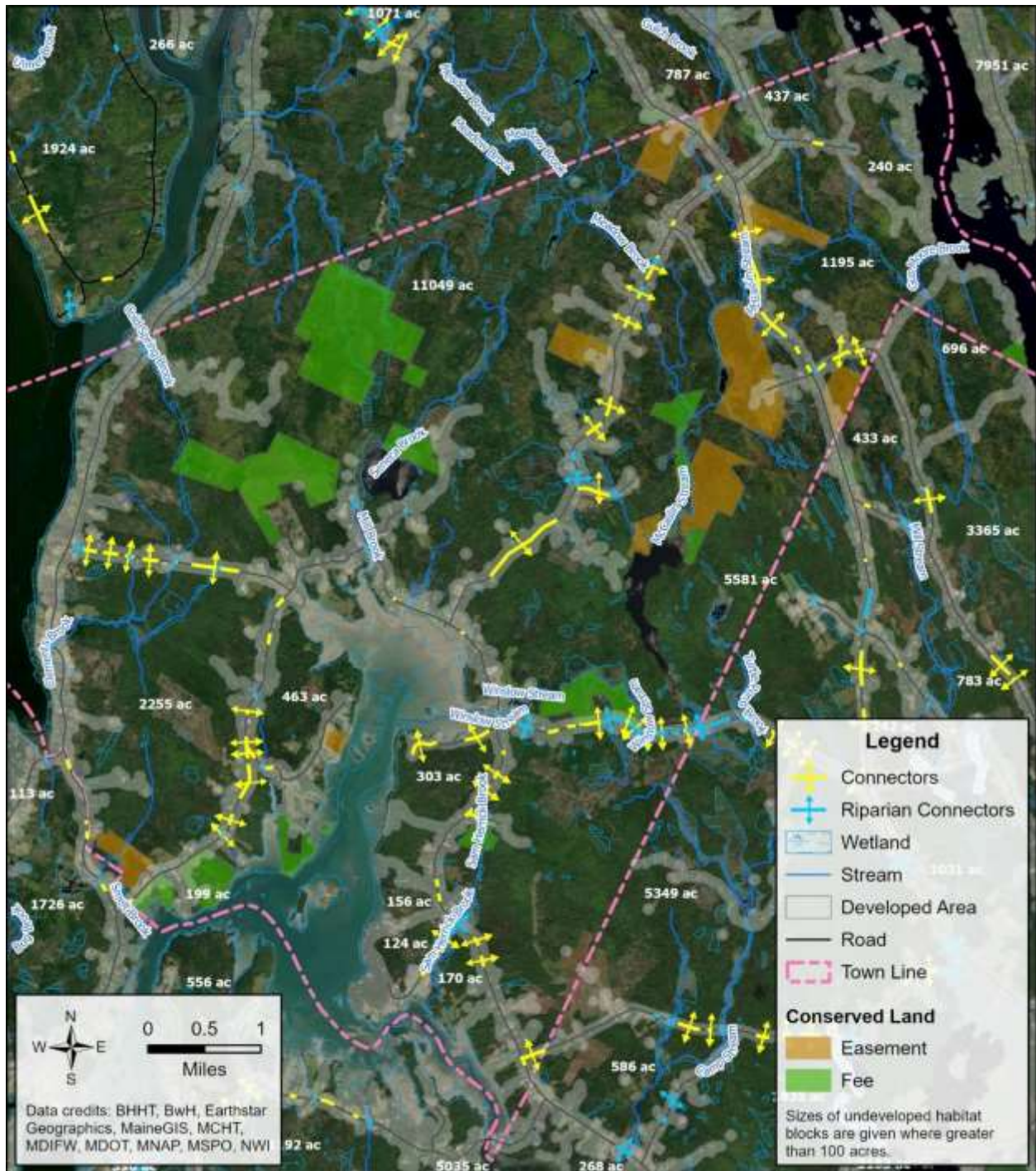
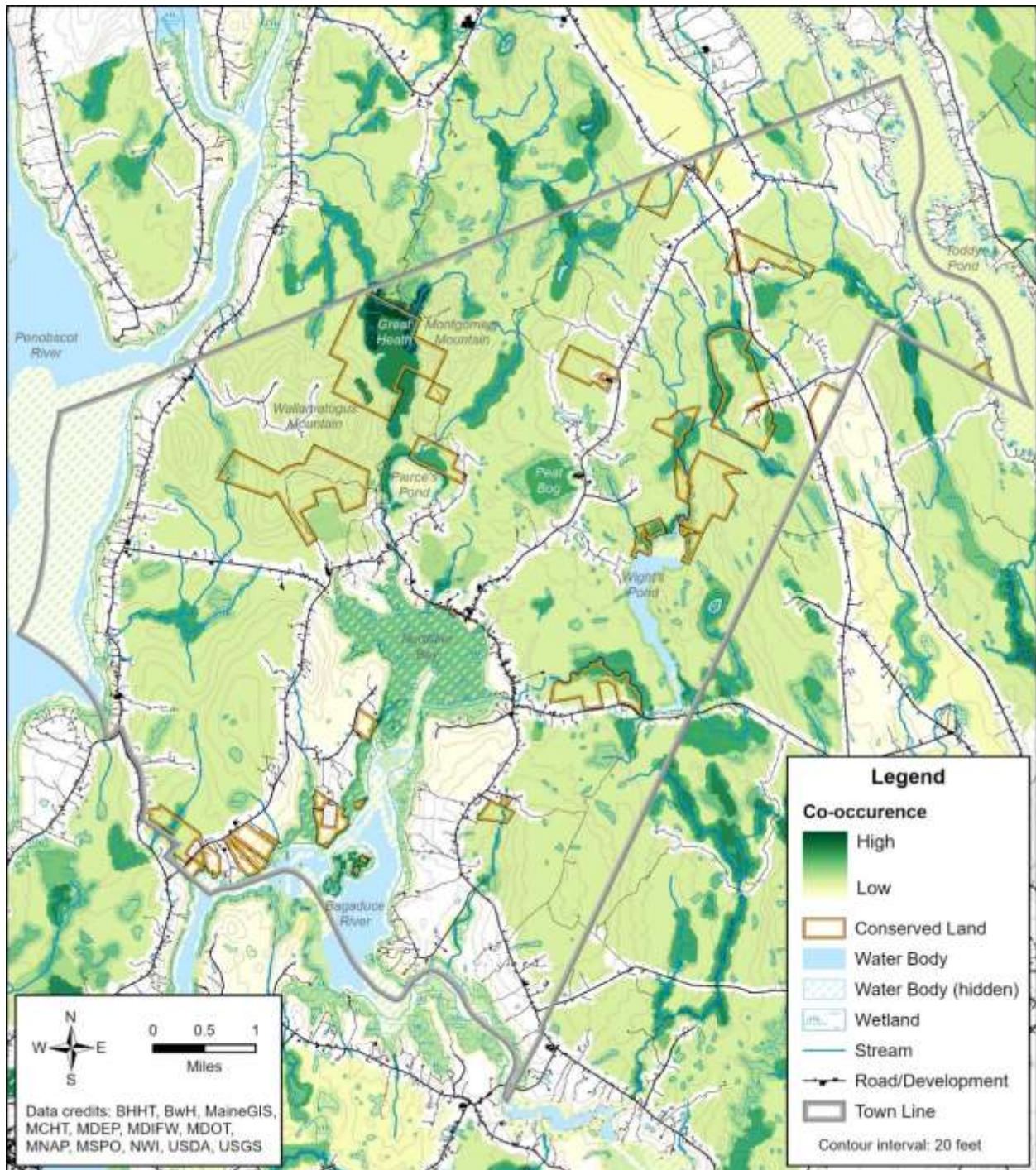


Figure C-7: Co-Occurrence of Important Natural Resources



5.9. Land Conservation

Currently Penobscot has approximately 2,200 acres of conserved land (Figure C-7). The most significant organizations conserving Town lands are Blue Hill Heritage Trust (BHHT) and MCHT, which have been actively acquiring land to protect critical natural resources. BHHT owns or holds conservation easements on nearly 2,000 acres while MCHT owns or holds conservation easements on about 250 acres. Many of BHHT's easements in town are agricultural easements to protect working farms. They have also conserved wildlife habitats and habitat connections.

5.10. Scenic Resources

Penobscot has many scenic views. The combination of coastal shoreline, upland farming areas, and blueberry fields overlooking open water, bays, and hills assures a rich variety of views and vistas. These views are an integral part of the Town's identity and rural character. Data on areas of high value view potential were taken from three sources: 1) the 1997 Town Comprehensive Plan in cases where the information is still valid; 2) a 1990 scenic inventory for the Critical Areas Program of the Maine State Planning Office⁶; and 3) a 2010 scenic inventory by Hancock County Planning Commission and Washington County Council of Governments.

The following is a list of high value views in the Town:

- Northern Bay, all along the head of the Bay in Penobscot on Rtes. 199/175, looking SW
- Pierce Pond, looking NE from boat landing
- South end of New Rd, looking S to Littlefield Cove
- Tills Point, looking S to Young's Island/Brooksville/Bagaduce River
- From atop Wallamatogus Mountain, looking W to Penobscot Bay, Ft. Point & Camden Hills, looking S views across Northern Bay and Penobscot, looking SE to Mount Desert Island
- Lampson Preserve, end of Dunbar Rd. at Castine line, views SE to Bagaduce River
- Rte. 175 pullout near Methodist Church, view SW at Northern Bay, Winslow, and Gravel Islands

⁶DeWan & Associates and Bristol Design, 1990

- Routes 199/175 at intersection with Pierce Pond Rd where Mill Creek feeds to Bay through marshy area-site for bald eagle feeding during alewife season (mid-May to mid-June)
- Back Ridge Rd. Junction with Rte. 15, looking S and E at MDI and Blue Hill
- Rt. 15 near junction with Rte. 199, looking SW to Camden Hills and Cape Rosier
- Wight Pond from Rt. 177, looking N across bluffs, also views from shore of Wight's Pond
- Johnson Point (end of Johnson Point Rd.), views in all directions
- Rte. 175 at Brooksville line, NW view of Bagaduce River and W view of "Reversing Falls"

6. Analysis

6.1. Are any of the community's critical natural resources threatened by development, overuse, or other activities?

The Bagaduce River is arguably the most significant natural resource in the Town of Penobscot due to its large area, the habitat it provides for many marine and avian species, its role in flood and sediment control, its scenic and recreation value, and also its potential economic value. Shoreline development is a threat to the river but is managed through the Shoreland Zoning Ordinance. Unrestricted aquaculture could disturb the ecosystems of Northern Bay by affecting water quality and disturbing wildlife. The Town is currently drafting an aquaculture ordinance that will regulate these activities in the Town of Penobscot. The impacts of climate change present a significant risk to the Bay, with sea level rise potentially contributing to erosion and loss of coastal wetlands and warming temperatures impacting native species and contributing to the invasion of green crabs. However, the potential impacts of sea level rise are poorly understood at present, as are possible mitigation strategies the Town may wish to consider. A study of climate change impacts on Northern Bay and possible mitigation strategies would help inform future decisions.

The Great Heath and adjacent areas are another significant natural resource in the Town with a high co-occurrence of valuable habitats, rare and exemplary natural communities, important ecosystem services like sediment control, and high recreation value including hunting and scenic views. The vast majority of the Great Heath is conserved by BHHT.

High value wetlands and habitats are also present along Pierce's Pond, the north end of Wight's Pond, McCaslin Stream, Winslow Stream, Moore Brook, and other areas of town (see Figure C-7). Development along ponds, streams, and wetlands are regulated by the Town's Shoreland Zoning Ordinance and State laws protecting wetlands and vernal pools. However, piecemeal development can fragment habitat and contribute to the loss of wetlands over time. Recent development has been concentrated along existing roadways, which helps to preserve natural areas within large habitat blocks. Development is likely to continue along these strips; however, creation of subdivisions and new roads is possible in the next ten years if population increases (see Chapter F, Population and Demographics).

6.2. Are local shoreland zone standards consistent with state guidelines and with the standards placed on adjacent shorelands in neighboring communities?

Penobscot adopted the State's guidelines for shoreland zoning in 2020, as did many adjacent towns. Therefore, shorelands are being managed consistently across the region.

6.3. What regulatory and non-regulatory measures has the community taken or can the community take to protect critical natural resources and important natural resources?

The Town issues building permits, which must meet the requirements of local ordinances, mainly the Shoreland Zoning Ordinance, Floodplain Ordinance, Land Use Regulations, and Subdivision Ordinance unless a variance is granted. The Town does not have a Commercial Site Plan Review. Such measures would provide additional tools to the Town for protecting critical natural resources.

The Town has a Shellfish Conservation Committee and a State-approved Shellfish Ordinance that is more restrictive than State law and is designed to protect and encourage sustainable harvests. The Town also has an Alewife Committee with a DMR-approved Harvest Plan. This committee has spearheaded recent projects to improve fish passage at Pierce's Pond and Wight's Pond. In 2022 the Town purchased 194 acres of land that has 1.8 miles of stream frontage supporting an alewife run, the majority of which is under conservation easement. The Town also has a Community Resilience Committee that is investigating the effects of climate change, sea level rise, and energy efficiency with an emphasis on moving the Town salt/sand pile and restoring the adjacent marine salt marsh.

In many cases, natural resources are degraded or lost through the cumulative effects of new development projects, any one of which may be small but when combined over time have a

considerable impact. While ordinances and site reviews can help guide development to be of minimal impact, advanced planning such as natural resource inventories, a Natural Resource Protection Plan, and targeted conservation are also helpful to ensure critical areas are protected.

6.4. Is there current regional cooperation or planning underway to protect shared critical natural resources? Are there opportunities to partner with local or regional groups?

Penobscot shares several critical natural resources with adjacent and nearby towns, including Castine, Blue Hill, Sedgwick, and Brooksville, which all have shoreline along the Bagaduce River. Current regional cooperation and planning efforts focus on this region, although Penobscot also shares significant natural resource areas with Orland and Surry (namely Toddy Pond and the Penobscot River). The Towns of Brooksville, Penobscot, and Sedgwick have agreed to cooperate with efforts to restore sea-run fish populations by improving fish passage into our local ponds. The actual restoration work has been led by MCHT. The science and policy work has been championed by the Downeast Salmon Federation and Maine Center for Coastal Fisheries. When completed, over \$2.5 million dollars will have been raised for fish passage improvement on the river.

Additionally, several conservation organizations active in Penobscot plan and organize their efforts in the context of the entire Blue Hill Peninsula region, including BHHT, MCHT, and the Bagaduce Watershed Association. The Bagaduce Watershed Association works specifically to promote the health of the river's ecosystem. The Maine Center for Coastal Fisheries and the Downeast Salmon Federation also monitor habitat in and along the Town's waterways. Maine Maritime Academy uses the Bagaduce River for teaching and research, including population studies on marine invertebrates and the capacity to use eDNA in water samples to identify species present in the river.

7. Goals, Policies, and Strategies

Goal: To protect the Town's critical natural resources, including wetlands, wildlife, and fisheries habitat, shorelands, scenic vistas, and unique natural areas.

Policy 1: Protect ecosystem services and functions of the Bagaduce River.

Strategies:

- a. Share information with shoreland property owners to inform their decisions about activities on their property such as vegetation management, shoreline stabilization, sources of pollution, etc.
- b. Review and consider the current Shoreland Zoning Ordinance and Land Use Regulations siting and setback requirements with regard to predicted sea level rise by 2050.
- c. Discourage riprap and other 'hard infrastructure' along important sources of sediment that maintain the marine shoreline.

Policy 2: Minimize development impacts on critical natural resources.

Strategies:

- a. Consider developing performance standards for development projects within priority resource areas.
- b. Develop a Natural Resources Protection Plan.
- c. Share information about long-term carbon storage with woodland owners.
- d. Review Land Use Regulations to ensure that Beginning with Habitat maps and information are included in the Planning Board review process. Participate with neighboring towns and regional efforts regarding efforts to protect shared natural resources. Continue working with land trusts and other private partners to protect critical and important natural resources.

Policy 3: Improve the accuracy of Natural Resource data for the Town.

Strategies

- a. Work with State agencies and HCPC to ground truth (verify in-person) actual current natural resource conditions and to update State Geographic Information System (GIS) layers.

Chapter D: Agriculture & Forestry

1. Purpose

This section presents an analysis overview of Penobscot’s Agricultural and Forest Resources, particularly land available for natural resource utilization and ecosystem services (the various benefits to humans from the natural environment, such as drinkable water, productive soils and farmlands, timber lands, etc.). Specifically, this section will:

- a. Describe the extent of Penobscot’s farming and forest land;
- b. Predict potential future threats to viability by growth and development;
- c. Assess the effectiveness of current protective measures to preserve important available lands for farming and forestry production.

2. Key Findings & Issues

Agriculture, and to a lesser extent, forestry, contribute to the Town, its economy, and its rural character. Farming and forestry have been stable in the community and the Town has ample land base for expansion of these activities. But while nearly one-fifth of the Town’s undeveloped land area is considered “prime farmland,” much of this is in areas of high clay content around Northern Bay and is likely best suited for hay/pasture. Prime cropland is located on the “Front Ridge” along Route 15, approximately half of which is already farmed. The Town does not currently have regulations protecting farm or forestry lands but could take steps to do so, such as modifying its Land Use Regulations. Approximately 26% of the Town’s land area is enrolled in Farmland, Open Space, or Tree Growth tax programs. Within this, farmland may be under-enrolled while Tree Growth may be over-enrolled compared to average levels of timber harvesting (an average of 515 acres annually since 2010).

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Plan identified about 90% of the Town as forested, compared to approximately 80% today. The Plan also noted the rich farmland along Route 15, reported as “some of the best farmland in Hancock County,” but also susceptible to development due to favorable soils for construction and many scenic views. Farmers were already seeking conservation easements to protect their land, a trend that has continued.

4. 2022 Public Opinion Survey Results

Survey respondents were overwhelmingly in favor of protecting agricultural and forested lands (84 to 90%) and most respondents favored allowing agricultural activities and forest management to occur anywhere in town (70 to 76%). In open-response questions, several participants shared their appreciation for the Town's small farms and large forests and expressed concern about the loss of farmland and forest lands to development.

5. Conditions and Trends

5.1. Agriculture

5.1.1. Penobscot Farms and Farmers

Penobscot has a vibrant agricultural sector with at least 32 farm operations, as reported in the 2017 U.S. Department of Agriculture's (USDA) Census of Agriculture. This number includes farms with parcels in multiple towns, such as commercial blueberry producers that lease blueberry barrens in Penobscot. At least seven named farms are owned by Penobscot residents, listed below, and shown in Figure D-1. Four of these are certified organic by the Maine Organic Farmers and Growers Association.

- Quill's End Farm
- Horsepower Farm
- King Hill Farm
- Blue Zee Farm
- Northern Bay Organics
- Blue Hill Berry Co.
- Little Farm on the Berries

It is unclear exactly how many residents are employed in local agriculture. However, the 2017 USDA Census lists at least 48 producers, which are people who are involved in the decision-making of a farm. The number does not include apprentices or hired workers. The numbers of farms and producers appear steady when comparing the 2007 and 2017 agricultural censuses, with 32 farms and at least 46 operators reported in 2007.

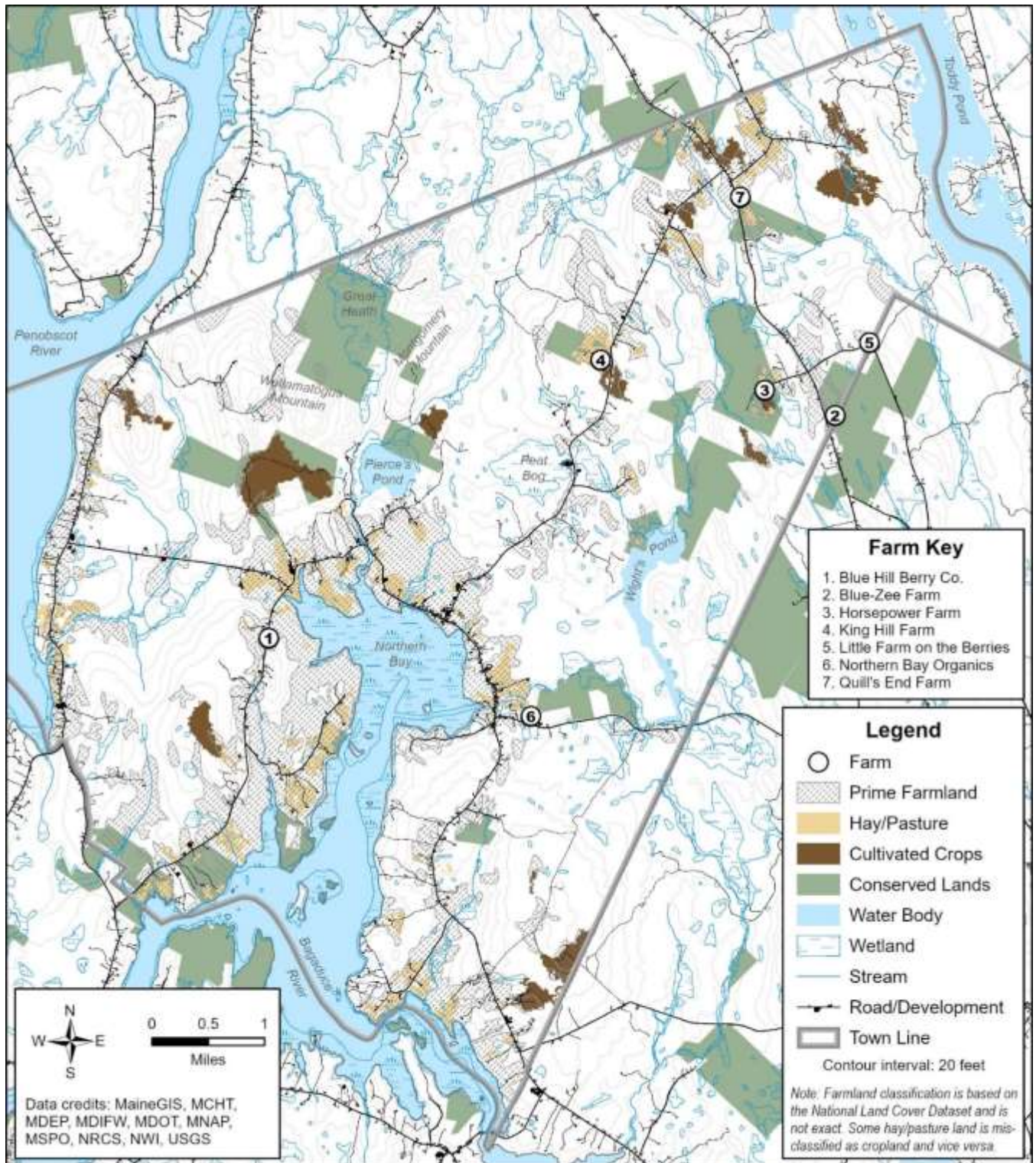
The amount of farmland in Penobscot is more difficult to determine. The 2017 USDA Census lists four farms between 1.0 and 49.9 acres and 28 farms between 50 and 999 acres, but this acreage may not all be in Penobscot. Farmers taking advantage of Maine's

Farmland Tax Program (discussed further below) have enrolled 290 acres in Penobscot, but this only represents 15 farms.

Land cover classifications provide another gauge of farmland in Penobscot. These are estimates of the types of land cover or land uses for a region based on satellite images. According to the National Land Cover Database, 636 acres of land in Penobscot are used for crops while another 892 acres are used for hay or pasture, for a total of 1,528 acres or 5.8% of the Town's total land area (Figure D-1). Another database of U.S. cropland cover, produced by the USDA and Natural Resources Conservation Service, shows 833 acres of cropland (virtually all blueberry land) and 943 acres of hay/pastureland for a total of 1,776 acres (6.8% of the Town). Although these numbers are based on computer-assisted classifications from satellite data rather than on-the-ground observations, they do account for major areas of fields and blueberry barrens in Town and may be fairly accurate.

According to the 1997 Penobscot Comprehensive Plan, 1,680 acres were in agricultural production in 1979, with 78% of this in blueberry production. This suggests the amount of farmland has been fairly consistent over the past 40 years, although there have been shifts in the types of crops grown with less blueberry production and more hay/pasture.

Figure D-1: Penobscot Farms and Farmland



DRAFT

An examination of prime farmland reveals that Penobscot could accommodate additional productive agriculture. “Prime farmland” includes soils that have been designated as agriculturally productive at the national, state, or local level. There are a total of 5,767 acres of prime farmland in Penobscot, 21.9% of the Town’s total area (Figure D-1). This includes 1,511 acres of nationally recognized prime farmland soils and 5,255 acres of soils of statewide importance. No soils of local significance have been identified.

Of the prime farmland in Penobscot, an estimated 1,000 acres are already farmed, based on comparison with the National Land Cover Dataset (Figure D-1). This means that about 525 acres of current farmland is on other soil types, some of which are similar to prime farmland soils but are too stony or steep to be considered prime farmland. It also means that over 4,700 acres of prime farmland are not currently being farmed. Approximately 605 acres (10.5%) of this has been lost to development, mainly in strips along Bayview Road, Southern Bay Road from the Town Office to the Baptist Church, and the Castine Road, and in clusters at the intersection of North Penobscot Road and Front Ridge Road (Lowell Hill), Wardwell Point, and the New Road at the intersection with Dunbar Road. Most of the remaining acreage of prime farmland (3,836 acres, or 66.8%) is forested or meadow (Table D-1).

Table D-1: Acreages of Different Land Cover Types in Penobscot

Land Cover Type	Acreage	% of Total Town Area
Developed, High Intensity	5	0.1%
Developed, Low Intensity	269	4.7%
Developed, Medium Intensity	67	1.2%
Developed, Open Space	264	4.6%
Cultivated Crops	211	3.7%
Hay/Pasture	788	13.7%
Herbaceous	147	2.6%
Shrub/Scrub	101	1.8%
Deciduous Forest	644	11.2%
Evergreen Forest	1,486	25.9%

Mixed Forest	1,459	25.4%
Emergent Herbaceous Wetlands	98	1.7%
Woody Wetlands	161	2.8%
Open Water	23	0.4%
Barren Land	20	0.3%

Source: National Land Cover Dataset

Most of the undeveloped, unfarmed areas of valuable farmland are around Northern Bay, and for the most part, are probably best suited for hay or pasture due to high clay content. These areas are known to be challenging for growing vegetables because of the dense clays. Prime farmland is also available along the Penobscot River and in North Penobscot. North Penobscot has numerous blueberry fields and is also where most vegetable crops are produced in town. Farms in North Penobscot currently occupy about 50% of available prime farmland in the area.

Another gauge of Penobscot’s land base is parcel size, as farms need an adequate land base in order to operate. Small farms are classified as farms less than 10 acres in size, and microfarms of less than five acres can also be highly productive. However, larger areas may be preferred. For example, 50 acres is suggested as the minimum needed to pasture a viable herd of cattle. Based on parcel data from 2010, approximately 60% of the Town is composed of parcels of 50 acres or more, or about 450 parcels total. Of these parcels, only nine contain 50 acres or more of prime farmland. In total, about 150 parcels in Penobscot have 10 acres or more of prime farmland. This indicates that Penobscot has the land to support much more farming. However, farmers may need to acquire large parcels to access enough productive farmland or else subdivide farmlands from larger parcels.

In addition to privately operated farms, the Penobscot Community School has a community garden and greenhouse on the school grounds. Penobscot farms also support other community initiatives. The Hancock County Gleaning Project gathers unharvested foods from farms in Penobscot, which is used to support organizations including the Magic Food Bus, the Simmering Pot, and the Tree of Life Food Pantry.

5.1.2. Economic Considerations

Markets for farm products in Penobscot are largely limited to farm stores and other direct sales such as farm shares (“Community Supported Agriculture”). Several farms have farm stores including Horsepower Farm and Blue Zee Farm. King Hill Farm offers farm shares. More market opportunities are available in surrounding towns, including farmers markets, grocery stores, and restaurants. However, there is no farmer’s market in Penobscot. Farmers also report supplying markets as far as Portland. These data only pertain to farmers producing consumable foods. However, a large proportion of Penobscot’s farmland consists of hay fields, which might be owned by individuals who are not full-time farmers. The economics for haying are more challenging with fewer markets and lower incomes. In some cases, it is challenging for owners to mow and sell hay at a profit.

One of the potential challenges facing farmers is property taxes, given the large land base often needed to support full-time farming. Maine tax law allows property owners to enroll farmland in the Farm and Open Space Tax Program, which reduces their tax burden so long as the land is used for farm-related activities. Penobscot currently has 16 parcels containing 267.11 acres enrolled as farmland and 16 parcels, totaling 1,203 acres, enrolled as open space. Past changes in enrollment were not available for this Plan.

5.1.3. Farmland Conservation and Community Support

Conservation organizations have obtained easements on several properties associated with farms in Penobscot, incorporating farmland, forestland, and natural areas. These easements, totaling 738 acres, are held by BHHT and MCHT. Maine Farmland Trust has also been active in conserving farmland in cooperation with these organizations. Another assessment of farmland conservation is the amount of prime farmland, as defined by soil type, that has been conserved; this value is 395 acres.

The Town supports agriculture in Penobscot through the Local Food and Community Governance Ordinance, passed in 2011. This ordinance affirms the right of Penobscot’s residents to “produce, process, sell, purchase and consume local foods” without interference from state and federal regulations. The ordinance also exempts local producers or processors from licensure and inspection for direct-to-consumer transactions and community social events, provided certain conditions are met.

5.1.4. Threats to Local Agriculture

There are no specific farms identified as under threat. However, there are several general threats to farming in Penobscot. While development has only impacted a small proportion of prime farmland in town, continued subdivision and development of farmland or potential farmland (including areas of prime farmland soils that are currently forested) remains a risk. Some farmlands, especially hay fields and pastures, are at risk of loss due to disuse, resulting in farmland reverting to forest. Farmers consulted during the Plan's development did not identify encroachment of non-compatible development as a concern.

Recent reports produced by the University of Maine⁷⁸ and Maine's Climate Council⁹ show that Maine's climate is becoming warmer, wetter, and more unpredictable, presenting both challenges and opportunities for farmers. Warming temperatures have lengthened Maine's growing season by two weeks compared to 1950 and plant hardiness zones have shifted northward⁸⁹. While these trends increase the variety and quantity of crops that can be grown, warmer summers present challenges for cold season crops, livestock, and farm workers. Winter temperatures are warming the most, especially along the coast, and more winter precipitation is falling as rain instead of snow. Despite warmer temperatures, less snow cover can actually increase winterkill of crops. Temperatures in the shoulder seasons are becoming more unpredictable, especially in the spring when mild temperatures may initiate crop development before the last freeze/frost. Changing temperature regimes are associated with increased pests, both in number and type.

Maine is receiving more precipitation per year, with more rain during individual events and more frequent storms. Annual precipitation averages for the state have increased by about 6.1 inches since 1895⁸. Most long-term weather records from around the state show the majority of extreme precipitation events (≥ 2 inches/day) have occurred in the past two decades⁷. Stronger storms and more frequent rainfall can lead to erosion, nutrient loss, waterlogging, and plant disease. Despite increased rainfall, Maine is also experiencing more frequent and longer dry spells. Warmer temperatures combined with longer growing seasons are increasing evapotranspiration and may lower average soil moisture, making fields more susceptible to dry weather.

⁷ Fernandez, 2015

⁸ Fernandez, 2020

⁹ MCC STS, 2020

5.2. Forestry

Penobscot has abundant forest lands covering approximately 80% of the Town, according to the National Land Cover Dataset (Figure D-2). Table D-1 above lists the acres of each forest type in town, which total nearly 22,000 acres. Of this, 1,510 acres are conserved lands, and the remainder is privately owned. It is unclear how much of Penobscot’s forest is managed for forestry. While several foresters may operate small woodlots and provide services to local landowners, there are no large commercial forests such as those found in northern Maine. Tax rolls identify 58 parcels enrolled in the State’s Tree Growth program for a total of 5,714.66 enrolled acres. The USDA Agricultural Census reports farms having woodlots, which can include timber tracts, pastured woodlots or sugarbushes. Twenty-six farms were reported as having woodlots in 2017, nearly equal to the 27 farms reported in 2007. Past enrollment data were not available for this Plan.

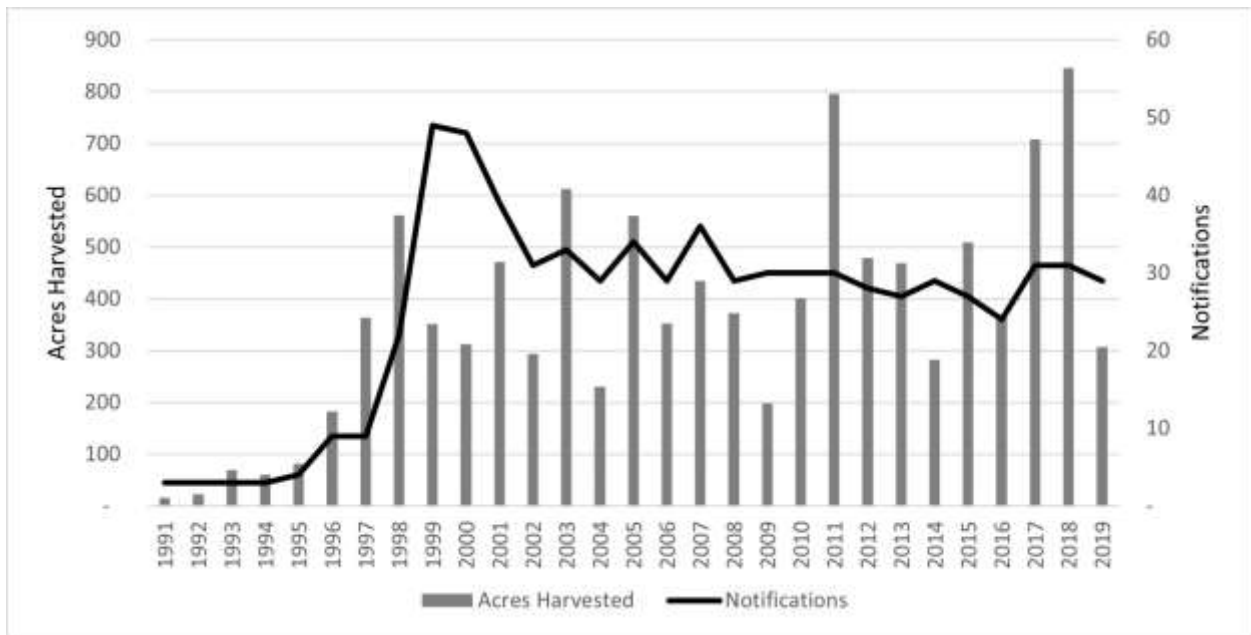
Harvest data collected by the State provides another indication of forestry activities. Table D-2 lists harvest data for 2009-2019. **Figure D-2** shows trends in harvested acres and the number of active notifications to the Maine Forest Service from 1991-2019.

Table D-2: Time Harvests, 2009-2019

Year	Acres of Selection Harvest	Acres of Shelterwood Harvest	Acres of Clearcut Harvest	Total Acres of Harvest	Acres of Change in Land Use	Number of Active Notifications
2009	163	35	-	198	-	30
2010	299	102	-	401	-	30
2011	766	29	-	795	6	30
2012	435	37	7	479	6	28
2013	461	8	-	469	-	27
2014	153	129	-	282	3	29
2015	221	288	-	509	-	27
2016	225	141	-	366	15	24
2017	661	42	5	708	8	31
2018	684	162	-	846	-	31
2019	307	-	-	307	20	29
Total	4,375	973	12	5,360	58	316
Average	398	97	6	487	10	29

Source: Maine Forest Service

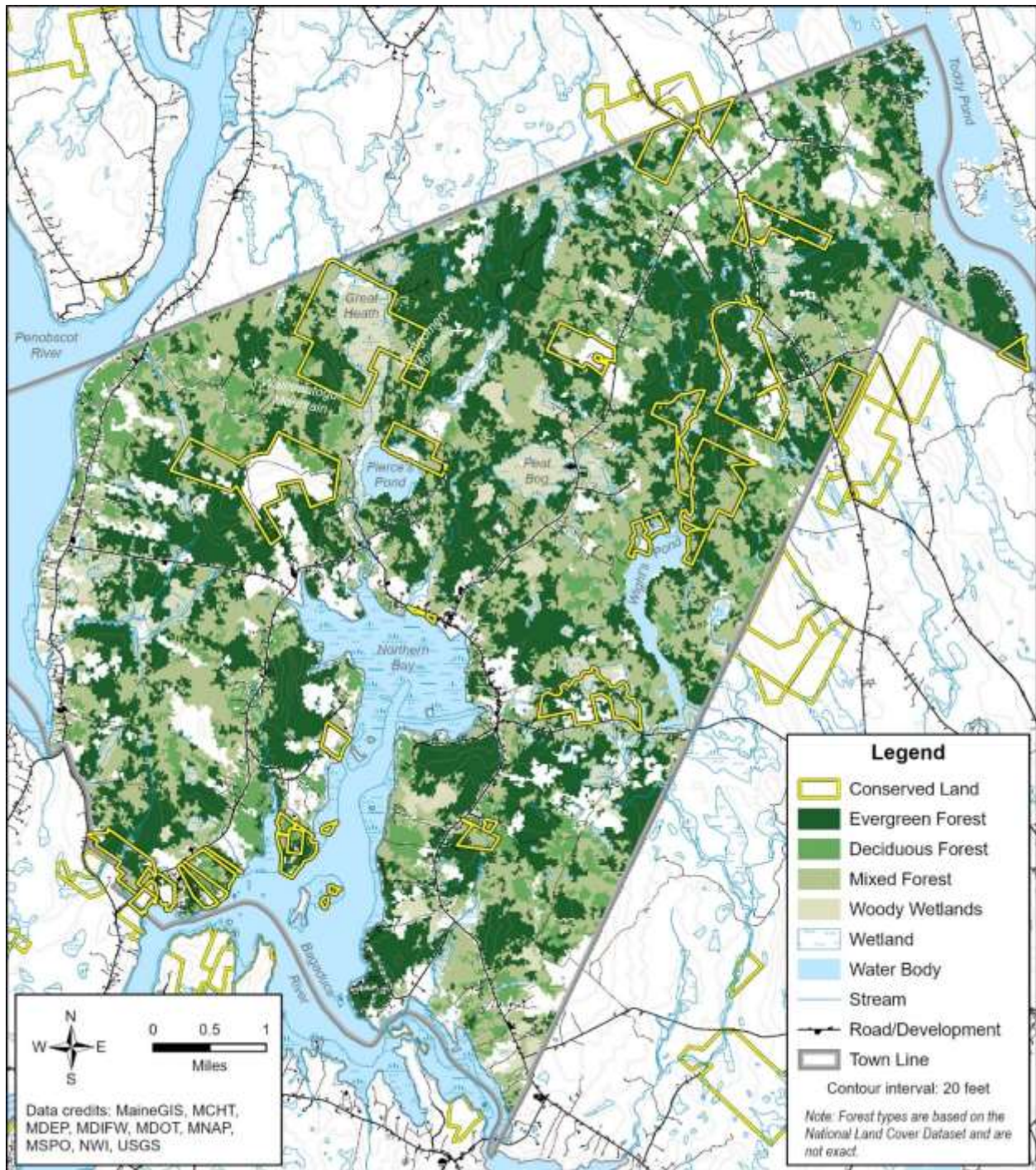
Figure D-2: Annual Acres of Timber Harvest and Active Notifications to the Maine Forest Service



Source: Maine Forest Service

DRAFT

Figure D-3: Forested Lands



As with agriculture, the number of large parcels containing forest cover provides a gauge for the Town's potential to support sustainable woodlot operations. About 200 acres is considered a good size for a small woodlot operation. The Town has only seven parcels containing 200 acres or more of forest, not including conserved lands. However, there are another 100 parcels containing 50-199 acres of forest each (for a total of about 11,300 acres of forest). Overall, the Town has large blocks of continuous forest and enough sizable parcels to support several small woodlot operations, especially if they operate across several parcels. However, the Town does not have the land base to support large-scale commercial forestry (nor have such outfits traditionally operated in town). Considering overall forest cover, tree growth rates, and reported harvest data, Penobscot has enough forest to sustainably support recent levels of harvesting.

In addition to privately managed woodlots, BHHT has designated about 350 acres of their recent acquisition at Wallamatogus Mountain as a community forest, including 180 acres of woodland and 170 acres of existing blueberry fields. BHHT is in the process of developing a plan for this area with priorities including keeping the blueberry field open, increasing plant diversity, maintaining community use of the blueberries, and maintaining open views.

Markets for pulpwood and biomass have declined both locally, with the Bucksport paper mill's closure in 2014, and regionally, which have constricted the markets for family woodland owners (Maine Forest Service 2021). Firewood remains an important market for local operators. Harvesting associated with development (mainly new single home construction) also helps to keep local harvesters employed. One local harvester observed that jobs are becoming scarcer due to increased competition from large companies that have not traditionally operated in this area. These companies are able to complete jobs within a matter of weeks or months that would have kept local, small/independent harvesters employed for much of the year.

The Town has adopted State standards for timber harvesting and the State oversees these activities. Town ordinances therefore have little influence on timber harvesting except in the Shoreland Zone, which is regulated by the Shoreland Zoning Ordinance (Section 15 Part P) and Land Use Regulations (Section 6 Part M). The Subdivision Ordinance allows the board to require a landscape plan showing the preservation or replacement of trees and other vegetation. However, in general, the clearing of vegetation within construction areas is not considered a timber harvest.

Climate change and other broad-scale environmental impacts pose a threat to Penobscot's forests and forestry. Maine is experiencing more frequent severe weather events, such as

wind, rainstorms, and ice storms that can damage trees and even swaths of forest. Winters are becoming warmer, on average, with less snow cover. Aside from affecting tree health, these conditions present challenges for logging in wet areas. Although Maine’s average annual precipitation has gone up, this is mainly due to larger rain events rather than more frequent rainfall, and drought is becoming more common with impacts on tree health and greater risk of forest fires. Hancock County has experienced “Moderate” to “Severe” drought lasting at least one month in six of the past seven years, with severe droughts lasting several months in 2016 and 2020.

Invasive insect pests also pose a threat to local forests, including the emerald ash borer, browntail moth, spongy moth, and spruce budworm. Damage associated with browntail moth was documented in West Penobscot along the Penobscot River in 2022, with similar outbreaks occurring on Verona Island and in Bucksport (Maine Forest Service 2022). Emerald ash borers have not yet been identified in Hancock County but are having considerable impacts on ash populations in southern Maine. Spongy moth, spruce budworm, and other insect pests have not recently been a problem in Penobscot or in nearby areas.

6. Analysis

6.1. How important is agriculture and/or forestry and are these activities growing, stable, or declining?

Agriculture is of moderate to high importance to the Town of Penobscot, with nearly 50 farm operators in the Town and likely others employed as apprentices or farm labor. An estimated 5.8 to 6.8% of the Town’s land area is active farmland. In addition, many residents have gardens, backyard poultry, or engage in other home-based food production. Agricultural activities appear to be stable based on comparisons of statistics from the 2007 and 2017 USDA Censuses of Agriculture. The Town may have also experienced light to moderate growth in agriculture in recent years as a result of food supply chain issues and price increases.

Forestry is of low to moderate importance to the Town with several small-scale operators based in town and several larger, out-of-town outfits owning forested acreage here. A total of 58 parcels are enrolled in the Tree Growth tax exemption program. Annual harvests ranged from about 300 to 850 acres between 2010 and 2019, the most recent data available. Forestry appears to have grown slightly in the past decade (average annual harvest of 512 acres) compared to the prior decade (average annual harvest of 385 acres).

6.2. Is the community currently taking regulatory and/or non-regulatory steps to protect productive farming and forestry lands? Are there local or regional land trusts actively working to protect farms or forest lands in the community?

The Town does not have specific ordinances that protect productive farming and forestry lands, nor has the Town taken non-regulatory steps to protect such areas. However, the Town's Local Food and Community Governance Ordinance does support the rights of farmers and residents to produce, process, sell, purchase, and consume local foods.

Local and regional land trusts are actively working to protect farms and open space in the Town, including BHHT, MCHT, and Maine Farmland Trust. The Small Woodland Owners Association of Maine (SWOAM) also owns one parcel of forested land in Penobscot. Much of the open space, including some associated with farms, is forested. BHHT has plans for a community forest in their recent acquisition on Wallamatogus Mountain. However, none of these organizations other than SWOAM have prioritized conservation of forested lands with the intent of supporting commercial forestry operations.

6.3. Are farm and forest landowners taking advantage of the state's current use tax laws?

Enrollment in the State's current use tax laws indicates that farm and forest landowners are using these programs. However, less than half of the estimated number of farmers appear to have enrolled farmland, as only 20 parcels are enrolled in this program compared to an estimated 48 producers in the Town and some farms comprise multiple parcels.

6.4. Has proximity of new homes or other incompatible uses affected the normal farming and logging operations?

Local farmers and foresters did not identify new home construction or incompatible uses as affecting their operations at present.

6.5. Are there large tracts of agricultural or industrial forest land that have been or may be sold for development in the foreseeable future? If so, what impact would this have on the community?

Penobscot has a robust agricultural community with farmers of a relatively young average age compared to other communities and no indications of planned changes in use. However, economic factors outside the Town's control could change this. About half of the Town's estimated farmland is conserved with easements, including that of most of the Town's

largest farms (see Figure D-1). Changes of use are not expected within the planning period for large tracts of agricultural land.

There have been several recent timber harvests, including clear cutting, of large parcels in town, some of which are owned by commercial, industrial forestry owners. There are no known plans to develop these parcels, but such a development could occur in the foreseeable future where land is suitable, especially on the ridge along Rte. 199. There are multiple other factors that could influence changes in the use of forestry lands, including economic trends and migration to coastal areas of Maine. It is important that the Town monitors these trends and takes steps to support the economic viability of farming and forestry.

If large parcels of existing forest lands are developed, that development would likely follow existing patterns: subdivision resulting in residential areas with some small-scale, non-industrial commercial uses. Conversion of forested lands would increase housing stocks, perhaps increasing population and tax revenue. Population increases would subsequently have implications for public infrastructure and services (see Chapter F, Population and Demographics). Development would also reduce the size of habitat blocks and forested land with associated impacts on natural resources. See also chapters on Water Resources (Chapter B) and Natural Resources (Chapter C).

6.6. Does the community support community forestry or agriculture (i.e., small woodlots, community forests, tree farms, community gardens, farmers' markets, or community-supported agriculture)? If so, how?

The Town does not directly support community forestry or agriculture except to the extent that Penobscot Community School operates a community garden. However, the community as a whole supports local agriculture through farm shares, where offered, and patronage at farm stores. The Blue Hill Peninsula region has several farmers markets attended by local farmers and residents. BHHT is planning to establish community blueberry harvesting on their recent acquisition at Wallamatogus.

6.7. Does the community have town or public woodlands under management, or that would benefit from forest management?

The Town recently acquired property near Wight's Pond with forested areas, much of which is under conservation easement. It is unknown at present if or how forest management will

be applied. BHHT also has designated a portion of Wallamatogus conserved land as a community forest, although planning for the forest is still in progress.

7. Goals, Policies, and Strategies

Goal: To safeguard important agricultural and forest resources and support the ability of farmers and foresters to continue to engage in these traditional occupations.

Policy 1: Safeguard lands identified as prime farmland.

Strategies:

- a. Consult with farmers to identify whether there are locally significant soils not currently designated prime farmland and/or to identify a Farmland Protection Area land use classification, especially in North Penobscot.
- b. Consult with Soil and Water Conservation District staff when developing any land use regulations pertaining to agricultural management practices.
- c. Review and consider amending the Subdivision Ordinance and Land Use Regulations to require subdivision developments maintain areas with prime farmland as open space to the greatest extent practicable.
- d. Consider the need for a Commercial Site Plan Review with provisions that require commercial developments to maintain areas with prime farmland as open space to the greatest extent practicable.
- e. Limit non-residential development in resource protection areas to natural resource-based businesses and services.

Policy 2: Safeguard lands capable of supporting commercial forestry.

Strategies:

- a. Share information about working forest conservation easements with woodland owners.
- b. Consult with the Maine Forest Service district forester when developing any land use regulations pertaining to forest management practices as required by 12 M.R.S.A. §8869.

Policy 3: Support farming and forestry and encourage their economic viability.

Strategies:

- a. Review and consider amending the Subdivision Ordinance, Land Use Regulations, and/or creating a Commercial Site Plan Review prevent/minimize incompatible development near active farms.
- b. Continue to permit land use activities that support productive agriculture and forestry operations, such as roadside stands, greenhouses, firewood operations, sawmills, and pick-your-own operations.
- c. Encourage owners of productive farm and forest land to enroll in the current use taxation programs.
- d. Include agriculture, commercial forestry operations, and land conservation that supports them in local or regional economic development plans.

DRAFT

Chapter E: Marine Resources

1. Purpose

An understanding of marine resources is an essential element of a comprehensive plan for any coastal community in Maine. This section will:

- a. Describe Penobscot's marine resource areas, coastal water dependent uses in terms of access, uses and importance to the economy of Penobscot and the region;
- b. Assess the adequacy of existing facilities and public access points to handle current use demands;
- c. Assess the effectiveness of existing measures to protect and preserve marine resource areas and important coastal water-dependent uses;
- d. Predict whether improvements will be needed to accommodate adequately the use demands of the projected population; and
- e. Predict whether the viability or productivity of marine resource areas, commercial fishing and other important water-dependent uses will be threatened by the impacts of growth and development.

2. Key Findings & Issues

The Penobscot and Bagaduce Rivers are the centerpieces of our community and commercial fisheries continue to play a role in the local economy as well as the social connection to these rivers that are a part of the Town's heritage. These rivers provide habitat for many important species including alewives, American eel, Atlantic salmon, horseshoe crabs, rainbow smelt, and sturgeon. The Bagaduce River has been designated as a Focus Area of Statewide Ecological Significance.

Penobscot lacks public all-tide access to both rivers, and there is a lack of parking at the boat landing at Winslow Cove. The boat landing also lacks a life ring, which presents a safety issue.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 plan identified the lack of public access to the shoreline and the closure of shellfish beds due to fecal contamination as the two major issues.

4. 2022 Public Opinion Survey Results

The survey results indicate an interest in preserving and protecting coastal lands, a lack of parking at the Town owned boat launch, a lack of access to the shoreline for commercial and recreational uses, and concerns about shoreline erosion.

5. Conditions and Trends

5.1. Existing Commercial Resources

Commercial fishing still plays a small but important economic, ecological, and social role in our community. Most commercial fisheries are considered “limited entry” due to DMR policy. Harvesters are aging faster than new entrants are allowed in, leading to a loss of institutional knowledge. Table E-1 lists fishing license sales in 2021 and Table E-2 lists the boat lengths of registered fishing vessels in the Town. A total of 59 fishing licenses were sold to Penobscot residents, of which nearly half (27) were lobster licenses. The marine waters within Penobscot’s municipal boundary are also utilized by properly licensed commercial fishermen that do not reside in Penobscot, resulting in a statewide economic impact.

Table E-1: License Sales, 2021

License Type	Quantity
Aquaculture	1
Commercial fishing	4
Commercial pelagic and anadromous	2
Commercial shellfish	3
Elver fyke net (single and crew)	2
Lobster/crab (all categories)	27
Menhaden, non-commercial	1
Recreational saltwater operator	1
Recreational saltwater registry	1
Scallop dragger	1
Scallop, non-commercial	8
Sea urchin diver and diver with tender	2
Total	59

Table E-2: Lengths of Registered Vessels

Length (feet)	Number of Vessels
0-10	4
11-20	13
21-30	7
31-40	12
41-50	1
Length not specified	22
Total	59

The following species have been identified as current or past important commercial resources: American lobster, rock crab, soft shell clam, hen or surf clam, razor clam, blue mussel, scallops, oysters, sea urchins, marine worms, periwinkles, American eel, alewife, rainbow smelt, and waterfowl. Habitats for marine species are discussed in Chapter C.

5.1.1. Lobster and Crab

Compared to other license types the lobster/crab fishery has the largest number of license holders in Penobscot, but the fishery is limited by lack of all-tide access and supporting facilities like a fuel dock, bait sales, buying stations, etc. The Penobscot River lobster/crab harvesting closure due to concerns about mercury contamination had a huge negative impact on older lobstermen with smaller vessels who did not want to travel further to fish. Warming water temperatures have reduced the length of the lobster/crab fishery season.

There is a huge resource of the non-native and invasive European green crab in the Bagaduce River, but commercial markets are few at this time. This fishery could provide an economic boost if a profitable market can be found.

5.1.2. Shellfish and Sea Urchins

Penobscot formed a Shellfish Conservation Committee and adopted a Shellfish Ordinance in 2008, which allows the municipality to manage their shellfish resources within the intertidal zone. The intertidal zone of the Bagaduce has historically been an extremely productive habitat for shellfish, although prior to the creation of the Shellfish Conservation Committee, most of the 800 acre Northern Bay was closed to shellfish harvesting due to fecal contamination. The Shellfish Conservation Committee has been key to improving the water quality of the Bagaduce. Water quality has improved by removing two overboard discharge septic systems and remediating failing residential subsurface wastewater systems. Currently there are approximately 40 acres closed to harvesting due to non-point source pollution in Winslow Cove.

In 2012 the Bagaduce River became infested with invasive European green crabs that devastated shellfish beds, destroyed acres of eelgrass, and caused shoreline erosion by burrowing into the salt marsh peat lands. Prior to the green crab invasion, the annual average value of the soft-shell clam resource was \$200,000. Recent research indicates that the green crab population has declined since 2012 but soft-shell clam harvesters are still having difficulty finding clams in quantities worth harvesting. Some soft-shell clams can be found in the harder substrate areas (gravel/cobble) found in Southern Bay or along the

Penobscot River. Returning the shellfish beds to a productive state would have a positive economic impact for the town. Marine species populations seem to be cyclical by nature, so continued monitoring of the crab and clam populations is essential for the future.

The scallop drag fishery is productive once again, most likely due to the current rotational closure system. Sea urchin numbers are huge, but the roe is of poor quality and not marketable.

5.1.3. Pelagic/Anadromous Fish

Penobscot residents commercially fish for both pelagic and anadromous fish. The alewife fishery can be traced back to legislation passed in 1828 allowing this harvest (see *Laws Relating to the Sea and Shore Fisheries of the State of Maine* Chapter 530). This fishery is closed until sustainability metrics are met. The Town is working to restore this fishery by seating an Alewife Committee and improving fishways into the ponds. The regulatory body governing the commercial alewife harvest is the Atlantic States Marine Fisheries Commission, which recently approved a pilot program that allows a limited commercial harvest of alewives from Wight's Pond.

Rainbow smelt once provided a valuable fishery. In 1880 over 61,000 pounds of smelt were harvested from the river. Today the State possession limit makes a commercial fishery impractical.

5.2. Aquaculture

The expansion of the aquaculture industry into the Town waters has raised questions and concerns from residents and elected officials, such as density, navigation, biosecurity, negative environmental impacts, siting, microplastics, and impacts on wildlife. As a result of these concerns, the Town adopted an Aquaculture Moratorium Ordinance on December 6, 2022, and is in the process of drafting an Aquaculture Ordinance.

Residents have expressed concern about the size or scale of aquaculture development that is allowed by DMR. State rules allow an entity to lease a tract of marine waters and submerged lands that is up to 100 acres in area and to possess up to 10 tracts for a maximum total area of 1000 acres. These leases may be contiguous. Residents are also concerned that aquaculture leases are being granted to foreign-owned companies that may not operate in the best interest of the Town, residents, or environment. The owner/operator model used in the lobster fishery has been successful in ensuring

sustainability, increased economic activity, and less user conflicts arising from the shared use of a public resource – the ocean.

A 19.01-acre oyster aquaculture lease was granted for Northern Bay but was ultimately rejected by the applicant. This lease was opposed by most people that attended the Public Hearing. Major objections were size, location, negative ecological impact on existing resources that have been officially identified and mapped, and proximity to Gravel Island at low tide (six feet).

5.3. Existing Resources of Ecological Importance

The Bagaduce River itself is of ecological importance and has been listed as a Focus Area of Statewide Ecological Significance. The river and adjacent areas contain Significant Wading Bird Habitat, Tidal Wading Bird and Waterfowl Habitat, and significant staging habitat for shorebirds (see Chapter C, Natural Resources). The river is an incredible nursery for multiple species of juvenile fish and the importance of these forage species has not yet been realized by fishery managers. The following have been identified as important to the ecological health of the Bagaduce River: eelgrass, sugar kelp, rockweed, shellfish beds, horseshoe crab, mummichog, Atlantic silversides, alewives, salt marsh habitat, wildflowers, eagle nests, and seal haul outs. Alewives, rainbow smelt, and bald eagle are all species of concern that live on the Bagaduce River. The Red Knot is federally listed as Threatened.

Littoral zone vegetation communities prevent nutrients and pollution from entering the ocean. These sensitive plants, which include sea lavender, wild rose, beach peas, spartina (cordgrass), and plantain, also prevent erosion by dampening wave action and hold the shore in place with their root systems. Rising sea level will endanger these plants.

5.4. Water Dependent Uses

All subtidal areas and intertidal areas of the Bagaduce River and Penobscot River, that are within the municipal boundary of the Town of Penobscot, are utilized for commercial fishing or recreational activities as allowed by Maine state law. Commercial water dependent uses include Seal Ledge Marina, Morse Cove Marine, a wharf at the Bagaduce Lunch, and guided tours and hunts; all of these are private ventures.

Recreational water dependent uses include boating, sailing, swimming, water skiing, tubing, hunting, bird, and wildlife watching, fishing, and kayaking. However, these activities also have commercial components when licensed guides are hired. Specific areas and resources with recreational value include duck hunting areas, striped bass habitat areas,

seal haul outs, and the reversing falls at Grindle’s Eddy and the Davis Narrows bridge. People travel long distances to harvest rainbow smelt for personal use during the spring spawning season. Recreational uses of the river continue until the waters freeze over which can be as late as mid-January. The greatest use occurs during the summer months.

5.5. Facilities and Public Access

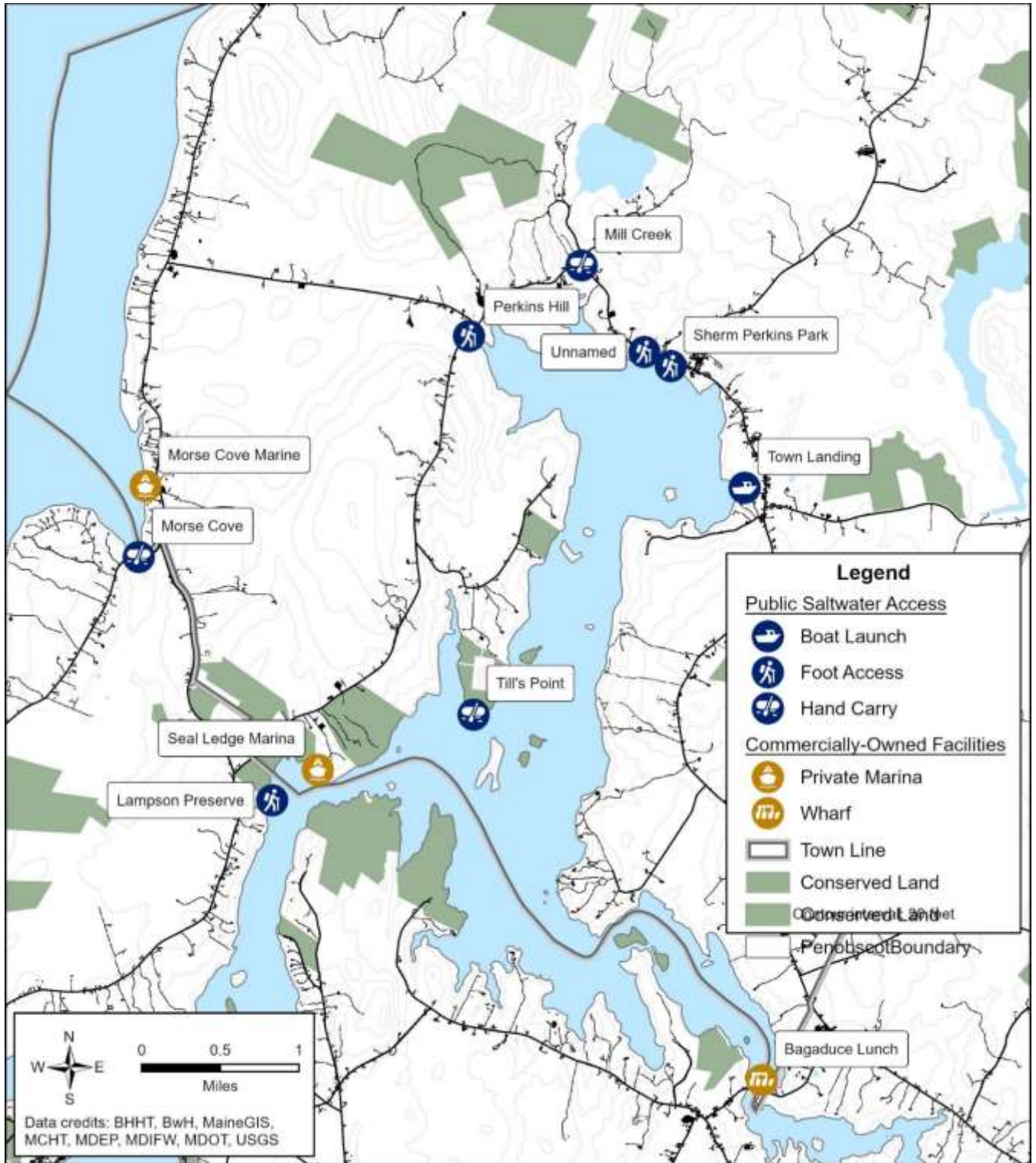
Marine-related facilities supporting water dependent uses consist of a town-owned boat ramp and several private facilities. The town boat ramp at Winslow Cove provides access to Northern Bay at high tide. The boat ramp has a float and small parking area with room for up to 8 vehicles. There is no life ring at the float, presenting a safety concern. The channel into this cove was last dredged in 1906. There are no plans to expand or improve this facility or construct new public facilities. Two privately owned marinas (Seal Ledge Marina and Morse Cove Marine) have ramps and floats. Morse Cove Marine also has a boat lift. A commercially owned wharf is also present at the Bagaduce Lunch.

Public access to marine waters is limited to the Bagaduce River, although private and commercial access is also available to the Penobscot River. Access points are listed in Table E-3 and shown in Figure E-1.

Table E-3: Saltwater Access Points

Location	Owner	Type of Access	Parking Capacity
Winslow Cove	Town	Boat ramp	6 spaces
Mill Creek	MaineDOT	Hand carry	4 spaces
Perkin’s Hill	MaineDOT	Foot	2 spaces
Morse Cove	MaineDOT	Hand carry	None
Till’s Point	MCHT	Hand carry	3 spaces
Lampson Preserve	MCHT	Foot	5 spaces
Sherm Perkins Park	BHHT	Foot	4 spaces
Parcel adjacent to Sherm Perkins Park	MCHT	Foot	20 spaces

Figure E-1: Water Dependent Uses, Facilities, and Public Access



DRAFT

5.6. Land Use Regulations

Shoreline development is regulated by the Town Shoreland Zoning Ordinance, State Shoreland Zoning Ordinance, and the Natural Resources Protection Act. Enforcement is carried out by the Town Code Enforcement Officer, DEP, EPA, and the U.S. Army Corps of Engineers. Any item placed below the high-water mark requires permitting from the U.S. Army Corps of Engineers at a minimum.

The purposes of the Shoreland Zoning Ordinance are “to further the maintenance of safe and healthful conditions; to prevent and control water pollution; to protect fish spawning grounds aquatic life, bird and other wildlife habitat; to protect buildings and lands from flooding and accelerated erosion; to protect archeological and historic resources; to protect commercial fishing and maritime industries; to protect freshwater and coastal wetlands; to control building sites, placement of structures and land uses; to conserve shore cover, and visual as well as actual points of access to inland and coastal waters; to conserve natural beauty and open space; and to anticipate and respond to the impacts of development in shoreland areas.”

The Shoreland Zoning Ordinance also “identifies the Commercial Fisheries/Maritime Activities District as areas where the existing predominant pattern of development is consistent with the allowed uses for this district as indicated in the Table of Land Uses, Section 14, and other areas which are suitable for functionally water-dependent uses, taking into consideration such factors as: (1) Shelter from prevailing winds and waves; (2) Slope of the land within 250 feet, horizontal distance, of the shoreline; (3) Depth of the water within 150 feet, horizontal distance, of the shoreline; (4) Available support facilities including utilities and transportation facilities; (5) Compatibility with adjacent upland uses.”

There is a tax relief program for those that register their land as Working Waterfront. At this time, no one has enrolled in this program.

5.7. Harbor/Bay Management and Regional Cooperation

As noted above, the Town has a Shellfish Committee and Alewife Committee to manage these resources. The Town has adopted a Shellfish Ordinance and is in the process of writing an Aquaculture Ordinance. The adjacent towns of Brooksville and Castine, which share borders on the Bagaduce River, do not have shellfish ordinances so municipal collaboration has not occurred. The Select Board has discussed the need for a harbor

ordinance with several residents. It was decided that due to a lack of traffic, limited tidal access, lack of existing issues, lack of funding, and the inability of the panel to identify any potential issues that a harbor ordinance was not needed at this time.

The Towns of Brooksville, Penobscot, and Sedgwick have agreed to support all efforts to restore the historic alewife population of the Bagaduce River. Over \$300,000 was raised to improve anadromous fish passage into Wight's and Pierce's Pond in 2017. A total of approximately three million dollars were raised to improve and restore anadromous fish passage at all five ponds in the Bagaduce River watershed. This is the first restoration project to restore fish passage within an entire watershed in Maine.

5.8. Areas of Possible Erosion

The shoreline of the Penobscot River is composed of gravel, cobble, and boulders. Erosion along this shore is influenced by tidal height, wave action, and river flow. Rising ocean levels will increase the rate of erosion as well as more severe storms.

The shoreline of the Bagaduce River varies by soil type and the slope of the adjacent upland. Areas that are extremely steep are considered bluffs by Maine state agencies. Traditionally, these bluffs were the major concern for erosion, but the damage done by European green crabs has turned the flat salt marshes into high erosion areas. Erosion along Northern Bay is an important source of sediment needed to replenish its mudflats.

5.9. Climate Change

Climate change is apparent to those who work or live on the river. High tides are definitely higher than years ago. The increase in water temperature has led to more southern species moving north. The European green crab is suspected to have benefitted from several consecutive warm winters. The waters of the Bagaduce are warming faster in the summer leading to a shorter lobster season. Green crab burrows in the salt marsh peat have led to a lot of shoreline erosion. According to Dan Belknap, a scientist working at the Wells National Estuarine Research Reserve, the few years of burrowing has led to erosion that would have taken 500 years to occur naturally. SeaGrant has undertaken a study of several rivers including the Bagaduce and the results have not yet been published.

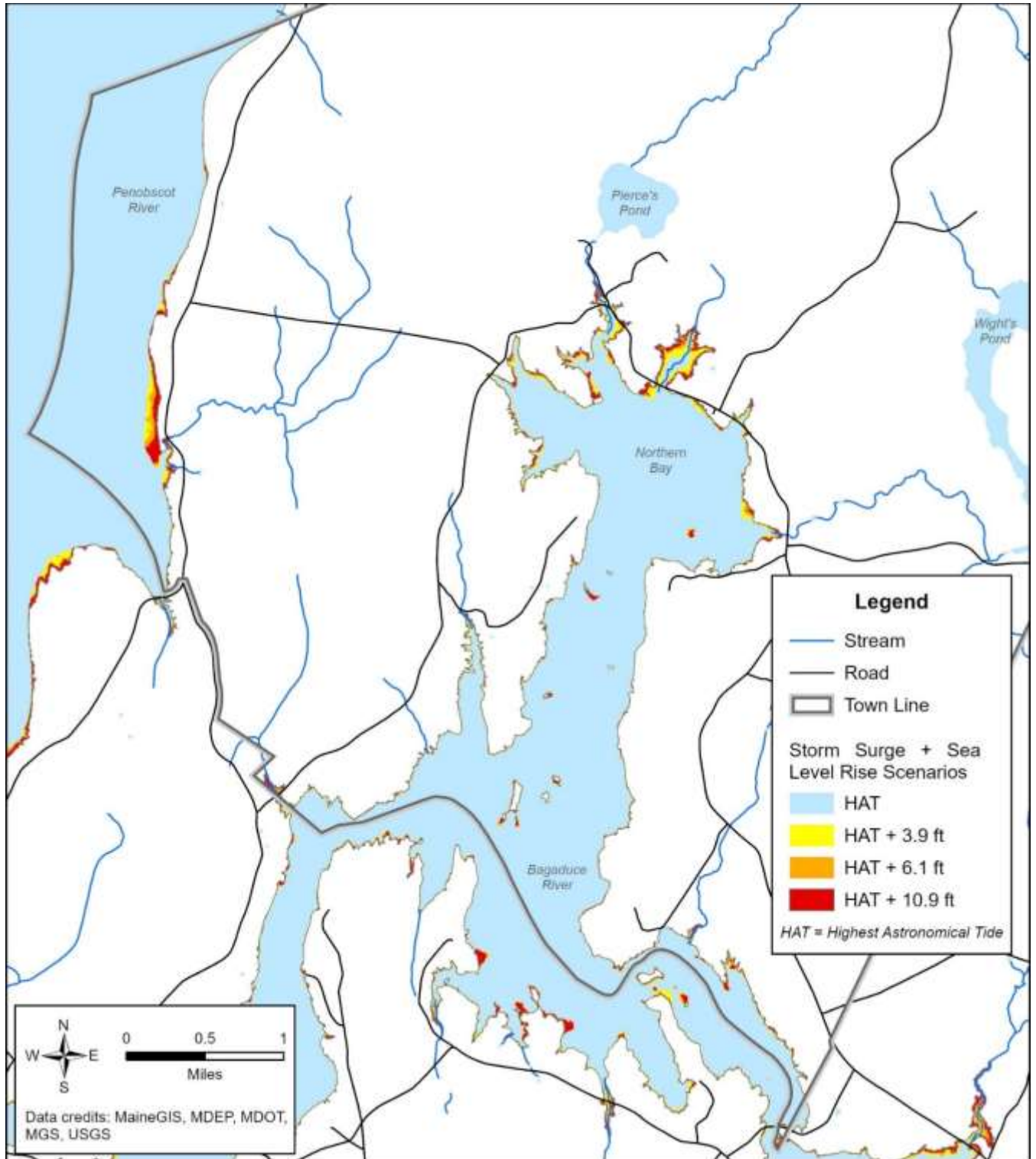
Observations made by the Shellfish Committee indicate that the composition of the flats in Northern Bay has changed over the past ten years. The wind blows more during the entire year. Warmer winters have reduced the ice cover on Northern Bay, exposing the flats to intense wave action during the winter resulting in the soft clay substrate being placed in

suspension and then carried out with the tide. The soft mud is what made Northern Bay a highly productive softshell clam habitat.

The Shellfish Committee is concerned that sea level rise will move the low water mark closer to the shoreline, thus reducing the acreage of flats that can be harvested. The resource will be fine as shellfish can live in the subtidal zone, but harvesters will be displaced. Penobscot is one of three towns in Maine that were selected to join in a field study led by Manomet that will utilize drones to map the topography of Northern Bay to predict where the low water mark will be under multiple sea level rise heights.

The effects of sea level rise can be seen where the highway passes over culverts at Carpenter Cove and Mill Creek. The ocean water occasionally overtops the road during astronomical high tides or during storms. This will occur more frequently as the sea level continues to rise. Figure E-2 shows the areas that would flood under several scenarios of higher sea levels, whether from storm surge, sea level rise, or a combination of both.

Figure E-2: Storm Surge and Sea level Rise Scenarios



Storm surge and sea level rise could lead to increased mortality of rainbow smelt and American eel due to being stranded in areas that are currently salt marsh when the tide recedes.

The timing of anadromous fish migrations has changed. The alewife run used to start within a few days of May 10. The run has started earlier every year for the past eight years. The latest run started on April 17, 2023. The timing and length of the rainbow smelt migration has changed too. The run is starting earlier and now overlaps with the start of the alewife migration. As recently as the year 2000 these runs did not overlap.

5.10. Scenic Resources

Residential and commercial development negatively impacts the scenic value of the shoreline. There are still large undeveloped parcels of land bordering the Bagaduce River that sustain the beauty of the river. The sandy shoreline of the Penobscot River differs greatly from the more estuarine environment of the Bagaduce, but it is just as picturesque. Almost the entire shoreline of the Bagaduce River is visible from a public access point like the highway, town owned land, or Land Trust parcels. Small portions of Wardwell, Littlefield, and Till’s Cove are hidden from public view as well as a small portion of the upper estuary from Johnson Point to the Penobscot/North Brooksville bridge. The views of the Bagaduce River from the highway have been noted in John Gibson’s *Maine’s Most Scenic Roads*. Views across the Penobscot River are limited due to a lack of public lands. There are views available from the highway at Morse Cove, Clement’s Farm (Tax map 6 lot 73) and near James Austin (Tax map 9 lot 63). The shoreline itself is a scenic view from Islesboro, Bayside, Belfast, and Searsport. Specific views have been identified as more notable than most areas (Table E-4).

Table E-4: Scenic Shoreline Views

Location	Owner	Description
Various	Private	Remains of former brickyard near the outlet of Mill Creek
Various	Private	Salt marsh habitat
Till’s Point/Battle Island	MCHT	Conserved land
Lampson Preserve	MCHT	Conserved land
Sherm Perkin’s Park	BHHT	Conserved land
Seal haul outs	State	-

Location	Owner	Description
All islands	Various	-
Carpenter Cove	Private	-
Reversing Falls bridge	Private/MaineDOT	Reversing falls
Grindle’s Eddy	MCHT	Reversing falls

6. Analysis

6.1. Is coastal water quality being monitored on a regular basis?

Yes, DMR monitors the water quality of the Bagaduce and Penobscot River through the Bureau of Public Health (BPH), as required by the National Shellfish Sanitation Program and the Interstate Shellfish Sanitation Conference. BPH analyzes water samples determining the fecal coliform level and biotoxin levels commonly referred to as “red tide.”

Currently there are 13 water quality test sites on the Bagaduce River that are in Penobscot. The current DMR website indicates that there are no test sites on the Penobscot River in the Town of Penobscot’s waters. Water samples are collected at least six times annually. In order to harvest shellfish for human consumption, the fecal contamination score must be below 31 parts per thousand (ppt) and the score is based on a statistical average of the last 30 test scores. When an elevated score is detected, the statistical average can remain above the 31 ppt threshold until 30 more test scores are taken – thus rotating the high score out of the calculation. It takes five years to collect 30 samples.

BPH is required to analyze the water quality of a shellfish growing area under a process known as the Sanitary Survey. Certain criteria are analyzed annually while a more detailed review is mandated every three years. Every twelve years a complete analysis of the water quality and investigation into pollution sources is revisited. The most recent 12-year Sanitary Survey was completed in 2022.

6.2. Is there a local or regional plan in place to identify and eliminate pollution sources?

No, state only. In 2023, the Town of Penobscot received a ninety-thousand-dollar small community grant to address noncompliant wastewater systems in Penobscot through the Small Community Grant Program.

6.3. Has closing of clam or worm flats threatened the shellfish industry, and are sources of contamination known? If so, are sources point (direct discharge) or nonpoint sources?

Yes, closures limit access to the resource. Yes, several possible failing septic systems have been identified as point source pollution during the 2022 DEP and DMR Sanitary Survey.

Currently, there is an approximate 40-acre closure in Winslow Cove due to non-point source pollution as all malfunctioning subsurface wastewater disposal systems have been remediated. Historically there have been water quality issues at Hutchins and Littlefield Cove. Due to the sparse housing, lack of identified failing systems after two Sanitary Surveys, and a huge animal population, the Shellfish Committee believes the occasional elevated fecal contamination scores are due to the wildlife population, not human development.

6.4. Are traditional water-dependent uses thriving or in decline? What are the factors affecting these uses? If current trends continue, what will the waterfront look like in 10 years?

Commercial fisheries have bottomed out. The lack of available State licenses, access to the water, no facilities or infrastructure, and lack of all-tide access hamper expansion of our commercial fisheries. Climate change has led to the waters warming earlier and staying warm longer, displacing typical cold-water species and supporting non-native and invasive species like oysters and European green crabs.

Commercial tourism and guide services are active and could increase over time.

Recreational uses are thriving, especially kayak use. Recreational striped bass fishing has increased in recent years.

With a lack of new commercial licenses being sold by DMR, more people will be turning to aquaculture if they want to work on the ocean. Aquaculture has the potential to re-shape the use, identity, and desirability of living on the Bagaduce River. The current state approved leasing process needs to be amended to allow the Town more input during the siting process and in determining the size and number of leases granted on the Bagaduce. An ordinance may need to be drafted to address future industrialization of the estuary.

The most likely changes to the waterfront in the next ten years will be increased residential development and the possibility of expanded aquaculture operations.

6.5. Is there reasonable balance between water-dependent and other uses, and between commercial and recreational uses? If there have been recent conversions of uses, have they improved or worsened the balance?

Yes, currently there is a good balance between user groups.

6.6. How does local zoning treat land around working harbors?

The Town boat landing currently functions as a working harbor for multiple commercial fisheries. The Town Shoreland Zoning Ordinance does recognize Commercial Fisheries/Maritime Activities Districts. The Ordinance prohibits multi-unit residential dwelling units, conversion of seasonal residences to full time residences, and campgrounds in the Shoreland Zone. The Town Shoreland Zoning Ordinance was last amended at the March 2022 Annual Town Meeting. Amendments are made to keep the document current with state law.

Given the amount of residential development that has taken place in Penobscot, it is important that any future development ensures that there is minimal conflict between user groups. This may involve amending the Town Shoreland Zoning Ordinance to consider topics such as increasing minimum setback requirements between residential and marine related uses.

6.7. Is there a local or regional harbor or bay management plan? If not is one needed?

In 2017 the Town Select Board convened a panel to investigate the need for a Harbor Ordinance. It was decided that due to a lack of boat traffic, limited tidal access, lack of existing issues and inability of the panel to identify any meaningful potential issues, a Harbor Ordinance was not needed at this time.

6.8. Are there local dredging needs? If so, how will they be addressed?

In order to support industrial scale aquaculture development or an increase in the number of fishery license holders, Winslow Cove would likely need to be dredged to accommodate delivery of product to the shore regardless of tidal stage. State and Federal funding would need to be obtained. The last dredge operation at Winslow Cove was in 1906.

6.9. Is there adequate access, including parking, for commercial fisherman and members of the public? Are there opportunities for improved access?

No, current access is inadequate, and parking can become an issue. Any improvement to access would require more land. Funding will be needed to purchase land or make major improvements. The boat ramp lot is not large enough to facilitate commercial fishermen or provide all tide access to Northern Bay. More property would be needed to re-align the boat ramp to provide all tide access and increased parking.

6.10. Are important points of visual access identified and protected?

The Bagaduce River is designated as an area of ecological significance, which has given local land trusts the incentive to conserve, preserve, and protect many parcels of land around the Bagaduce. Funding may be needed to purchase specific parcels of land that have unique vistas. BHHT has raised nearly 1.2 million dollars to purchase and conserve 336 acres on the summit of Wallamatogus Mountain which overlooks the Bagaduce River, Penobscot River, Penobscot Bay, and the Camden Hills region.

7. Goals, Policies, and Strategies

Goal: To protect the Town's marine resources, industries, and uses from incompatible development and ecological impact, and to promote access to the shore for commercial fishermen and the public.

Policy 1: Protect, maintain, and where warranted, improve marine habitat and water quality.

Strategies:

- a. Review and consider the current Shoreland Zoning Ordinance and Land Use Regulations siting and setback requirements consider the predicted sea level rise by 2050.
- b. Develop an Aquaculture Ordinance to protect commercial fishing grounds.
- c. Consider including an owner/operator requirement and maximum lease acreage limits in any aquaculture ordinance.
- d. Continue to collaborate on studies of the Bagaduce River with processes for resident input.
- e. Support local and regional harbor and bay management plans.
- f. Encourage owners of marine businesses and industries to participate in clean marina/boatyard programs.

- g. Continue to collaborate with adjacent towns on the alewife fishery.

Policy 2: Foster water-dependent land uses and balance them with other complementary land uses.

Strategies:

- a. Maintain the Commercial Fisheries/Maritime Activities District zone in the Shoreland Zoning Ordinance.
- b. Provide information about the current use taxation program in the event waterfront land becomes used to provide access to or support the conduct of commercial fishing activities.

Policy 3: Maintain and, where warranted, improve harbor management and facilities.

Strategies:

- a. Improve the town boat landing at Winslow Cove by adding a life ring.
- b. Monitor for and consider opportunities to increase access to marine waters, especially areas providing low-tide access for commercial and recreational uses.

Policy 4: Protect, maintain, and where warranted, improve physical and visual public access to the community's marine resources for all appropriate uses including fishing, recreation, and tourism.

Strategies:

- a. Continue to enforce the Shoreland Zoning Ordinance as it regards visual and physical points of access to coastal waters, the conservation of natural beauty and open space in the Shoreland Zone, and the anticipation of/response to impacts of development in shoreland areas.
- b. Continue to work with local property owners, land trusts, and others to protect major points of physical and visual access to coastal waters

Chapter F: Population & Demographics

1. Purpose

Population is a foundational data set to guide all aspects of a comprehensive plan. The understanding of the town's past, current, and future population trends support many other aspects of the plan, such as housing, land use, and transportation, and will help the Penobscot prepare for future municipal expenditures and investments. This section will:

- a. Describe Penobscot's population trends;
- b. Discuss how these recent trends relate to and contrast with Hancock County, the State; and
- c. Review probable future population trends.

2. Key Findings & Issues

Penobscot has a small, rural population of approximately 1,128 residents. The Town's population is aging: the estimated average age of residents is 52 years, and an estimated 33% of residents are over the age of 65. School enrollment has not changed significantly over the past five years. The State predicts Penobscot's population will decrease over the next ten years. However, the Town experienced a measurable increase in population during the Covid-19 pandemic. Continued urban migration and other factors, such as climate change, could continue to lead to population increases.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan reported the Town's population at 1,162 in 1992, and that rapid growth in the 1970s had slowed in the 1980s and 1990s. The plan noted that the summer peak population was probably somewhat lower than might be expected based on the number of second homes because some of these were owned by local residents. The plan also noted that the Town's elderly population was higher than Hancock County due to the presence of the nursing home.

4. 2022 Public Opinion Survey Results

The respondents to the survey want the Town's population to either stay the same (39%) or increase somewhat (37%). Only 2% want the Town's population to increase substantially and less than 5% would like to see the Town's population decrease. In open

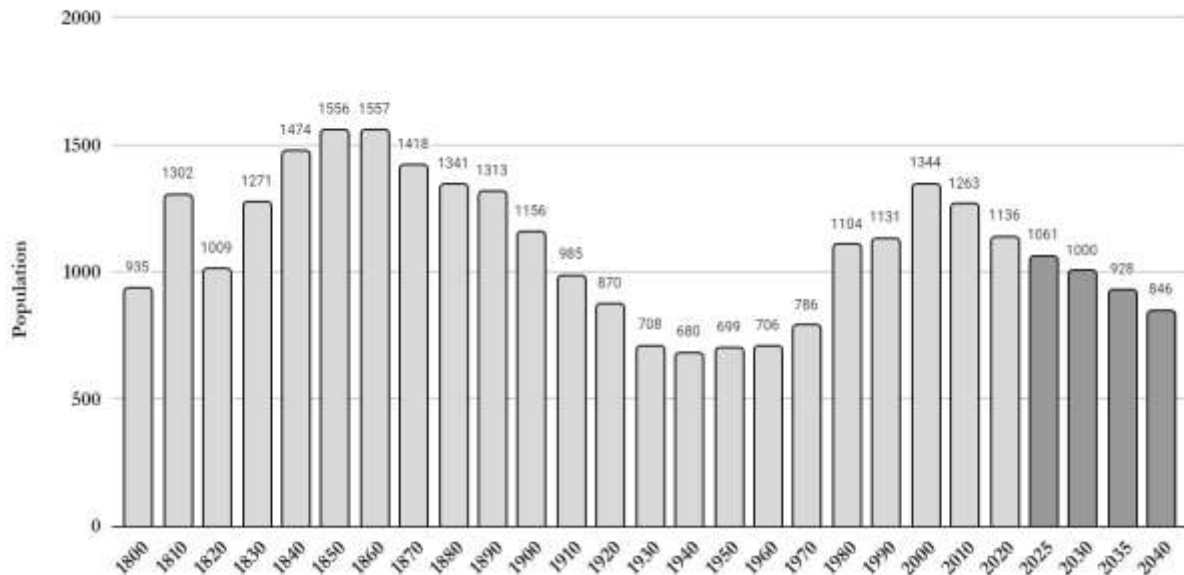
comments on the survey, several respondents noted they would like to see an increase in families and young people.

5. Conditions and Trends

From 1840 to 1940 Penobscot’s population decreased more than 50%. In the 30 years from 1940 to 1970 it increased slowly. It then jumped 40% in the next decade and another 22% from 1980 to 2000. Population then declined from 2000 to 2020, with a major loss to population with the closure of the Penobscot Nursing Home in 2017. The Maine State Economist projects a continuing decline of over 25% between 2020 to 2040 (Table F-1). However, the Covid-19 pandemic and shifts to remote work have changed demographic outlooks for rural areas as urban professionals and retirees are seeking to move to these areas. In addition, broadband internet service was recently installed throughout the Town, which may draw professionals and younger families to move to the area.

Figure F-1: Historic and Projected Population, 1800-2040

Penobscot Historic and Projected Population, 1800-2040



Source: Maine State Economist

Table F-1 compares populations by age for Penobscot, Hancock County, and the State. The age distribution of Hancock County is older than that of Maine, and the age distribution of Penobscot is older than those of both Maine and Hancock County. Looking at the young end of the distribution, only 16% of Penobscot’s population was under the age 18 in 2021. The

figure was 18% for Hancock County and 20% for Maine as a whole. The reverse is true for older residents. In 2021, 32% of Penobscot’s population was age 65 or older, compared to 24% of Hancock County’s population, and 21% of the State’s population.

Table F-1: Population by Age, 2021

	Penobscot		Hancock County		Maine	
	Population	%	Population	%	Population	%
Under 18	187	16.3%	10,499	18.8%	279,585	20.4%
18-34	95	8.3%	8,563	15.4%	243,250	17.7%
35-64	486	42.5%	22,838	40.9%	552,311	40.2%
Over 65	376	32.9%	13,882	24.9%	297,101	21.7%
Total	1,144	100%	55,782	100%	1,372,247	100%

Source: 2021 ACS 5-Year Estimates

The 2020 estimated educational attainment for Penobscot, Hancock County, and the State is presented in Table F-2. The percentage of Penobscot residents who have at least a high school diploma is higher (99.1%) than either Hancock County (94.7%) or Maine as a whole (93.2%). Furthermore, the percentage of Penobscot residents with a bachelor’s degree or higher is higher (38.2%) than either Hancock County (35.2%) or Maine (32.5%). This is due to the much higher proportion of Penobscot residents with graduate professional degrees – 20.5% compared to 13.9% for Hancock County residents and 12.2% for Maine residents. The recent influx of people with advanced degrees who have moved to Penobscot for retirement suggests that the estimate may be reasonably accurate.

Table F-2: Estimated Educational Attainment for Population 25 Years and Over

	Penobscot		Hancock County		Maine	
	Population	%	Population	%	Population	%
Less than 9th grade	4	0.4%	605	1.4%	19,053	1.9%
9th to 12th grade, no diploma	3	0.3%	1,420	3.4%	36,492	3.6%
High school graduate	243	26.7%	13,222	31.2%	300,595	29.6%
Some college, no degree	224	24.6%	8,067	19.0%	186,486	18.4%
Associate’s degree	88	9.7%	4,018	9.5%	107,147	10.6%
Bachelor’s degree	193	21.2%	9,333	22.0%	224,987	22.2%
Graduate or professional degree	154	16.9%	5,713	13.5%	140,318	13.8%
Total	909		42,378		1,015,078	

Source: 2021 ACS 5-Year Estimates

Table F-3 compares the average household size for Penobscot, Hancock County, and Maine. The table shows that the average household size in Penobscot is slightly lower than that in Hancock County and in Maine as a whole. This may be related to the fact that the age distribution in Penobscot is older than that in the county and the state.

Table F-3: Average Household Size, 2021

	Average Household Size
Penobscot	2.18
Hancock County	2.23
Maine	2.25

Source: 2021 ACS 5-Year Estimates

The median household income (MHI) in Penobscot appears to be considerably lower than that at the State and County (Table F-4) and the percentage of Penobscot families living below the poverty line (Table F-5) appears to be greater than that for Hancock County and Maine.

Table F-4: Median Household Income, 2021

	Median Household Income
Penobscot	\$47,000
Hancock County	\$60,354
Maine	\$64,767

Source: 2021 ACS 5-Year Estimates

Table F-5: Families Below the Poverty Level, 2021

	Number	%
Penobscot	302	8.3%
Hancock County	14,308	6.3%
Maine	365,226	7.2%

Source: 2021 ACS 5-Year Estimates

The school census for the past 25 years is presented in Table F-6. It indicates a substantial decrease in enrollment at the Penobscot Community School (grades pre-K-8) between the late 1990's and 2011. From 2012 to 2018 the census rose a bit and was generally in the 70s. Since then, enrollment has been in the 60s, except for 2020-21, the first full year of the Covid-19 pandemic when it dropped to 54.

Table F-6: Penobscot School Enrollment, 2012-2022

Date of Enrollment	Penobscot Community School (PreK-8)	Public High School (9-12)	Home Schooled	Private School
October 2012	73	49.5	11	>10
October 2013	73	49.5	13	>10
October 2014	70	42	12	>4
October 2015	63	47.5	11	>5
October 2016	71	36	6.5	>5
October 2017	72	36	5.5	>5
October 2018	76	34	6.5	>5
October 2019	69	40.5	5	>11
October 2020	54	43	6	>6
October 2021	60	43	9	>8
October 2022	69	49	5	>8

Source: Superintendent's Office, School Union 93

6. Analysis

6.1. Is the rate of population change expected to continue as in the past, or to slow down or speed up? What are the implications of this change?

As noted in Table F-1, the State projects a slow decline in population through 2040. This projection may be based in part on major losses to Penobscot’s population in the 2010s resulting from closure of the Penobscot Nursing Home and assisted living center (2017) and Bucksport Paper Mill (2014). Several additional factors suggest that the Town’s population will not continue to decline. For instance, the recent economic resurgence in the larger neighboring town of Bucksport could draw new people seeking employment opportunities to the region. The Penobscot Community School has an excellent reputation, which could lead young families moving to the area to decide to locate in Penobscot. Broadband is being installed in Penobscot and other towns on the Blue Hill Peninsula, which will make remote work more feasible and could attract residents currently living in urban/suburban areas. During the Covid-19 pandemic, people in urban areas began moving to rural communities, a shift partially made possible by the transition to remote work. This included a small influx of newcomers to Penobscot, a trend that could continue. Finally, over the past 15 years a number of people have moved to Penobscot to retire; over the next 15 years climate change could further increase the popularity of Penobscot (and all of Maine) as a retirement destination.

6.2. What will be the likely demand for housing and municipal and school services to accommodate the change in population?

If the State’s projected population decrease is incorrect and the population grows, this could increase the demand for housing. The Penobscot School, which currently has 69 students, could easily accommodate an increase in enrollment, as the school was built to accommodate up to 160 students. The transfer station can also accommodate growth.

If the projection of a population decline is correct, there would be little change in the demand for housing and municipal and school services. Decreased enrollment at the school could make it difficult to keep the school open and could necessitate consolidation. Continued decline in the Town’s tax base could also necessitate decreases in Town services.

6.3. Does your community have a significant seasonal population, is the nature of that population changing? What is the community’s dependence on seasonal visitors?

Penobscot has a seasonal population, though not as large as that of other towns on the Blue Hill Peninsula. This population consists mainly of summer (generally May to September) visitors and part-time residents. Neither the size nor the nature of the seasonal population seems to be changing significantly. There are only a few retail businesses in Penobscot (e.g., a general store and two seasonal take-out seafood stands), but they do rely heavily on summer visitors. There is also a substantial number of tradespeople who provide services to owners of summer homes (e.g., landscaping, carpentry, painting, plumbing, electrical work, security, and plowing).

6.4. If your community is a service center or has a major employer, are additional efforts required to serve a daytime population that is larger than its resident population?

Penobscot is not a service center and has no major employer; therefore, the daytime population is not larger than its resident population.

7. Goals, Policies, and Strategies

Goal: To maintain its rural character through gradual population changes that includes people of diverse ages and wealth.

Policy 1: Support the ability of residents to remain in town.

Strategies:

- a. Investigate the possibility of affordable housing to encourage young families to come to Penobscot and for older residents to remain, including possible grant sources, (e.g., HUD).
- b. Support age-in-place policies and investments that allow facilities and services to support this need.
- c. Support educational and training in trades and other economic sectors offering local employment.
- d. Monitor property tax rates and affordability.
- e. Maintain the Town's social assistance program.

DRAFT

Chapter G: Economy

1. Purpose

An understanding of past, current, and future potential economic trends in the local and regional economy is essential for assessing Penobscot's future economic development needs. As employment patterns change, such as increasing numbers of at-home workers and telecommuters, regional changes to major sources of employment, and/or changes in retail, transportation, telecommunication, and energy infrastructure will all be impacted and require adequate planning. This section aims to:

- a. Describe employment trends in Penobscot;
- b. Describe the local and regional economy; and
- c. Discuss likely future economic activity and market changes that may impact Penobscot.

2. Key Findings & Issues

There are relatively few employers in Penobscot, with most residents commuting to nearby towns and cities. The Town's largest employers, the Penobscot Nursing Home, and Northern Bay Residential Center, both closed in the last decade, as did the largest regional employer, the Verso paper mill in Bucksport. However, recent unemployment rates in Penobscot have trended lower than County and State averages. Wages decreased dramatically from 2013 to 2015 but have since increased for all industries, especially in construction. Local job potential has and will likely continue to be in home-based occupations and telecommuting, especially with recent increases in broadband access. Economic growth in neighboring communities, such as Bucksport, could provide additional sources of jobs for Penobscot's residents.

3. 1997 Comprehensive Plan Key Findings & Issues

Key findings of Penobscot's 1997 Comprehensive Plan echo those of today, indicating little change in the Town's economy over the past 26 years. The Plan noted few sources of jobs in Penobscot with most employed residents commuting to neighboring communities. At that time Penobscot's unemployment rate had been increasing. As today, the greatest job potential was expected in home-based occupations and telecommuting.

4. 2022 Public Opinion Survey Results

Most survey respondents did not want to see industrial development anywhere in town (69%). Most survey respondents favored restricting the following activities to designated areas in town: commercial development, boat building and maintenance, gas stations, hospitality services, and medical facilities. In open-response questions, some respondents noted that part of the Town's character is defined by the lack of large industry and development while others expressed that the Town might need more businesses to create economic opportunities, especially for young families. Others were concerned that the cost of living, energy costs, and taxes will increase in coming years, along with income inequality.

5. Conditions and Trends

5.1. Historical Trends

The following information is drawn from the 1997 Penobscot Comprehensive Plan and *Penobscot, Maine: 1761-2011* by Mark Honey.¹⁰ For much of the Town's history, agriculture, forestry, fishing, and other maritime-oriented activities were the economic backbone of the community. Shipbuilding was a major industry in the nineteenth century and sailing was an important occupation for Penobscot residents. Forestry declined in importance by the end of the nineteenth century, when brick manufacturing became important with millions of bricks produced until the mid-twentieth century. Other extractive industries including quarrying and mining, though neither factored significantly in the local economy. Another major employer in the late nineteenth century was Abbie Condon's Knitting Factory, which employed some 250 people at its peak in the 1870s. Mechanization reduced this to only about 15 employees until the factory closed in 1935.

Food production and extractive industries remained important sources of jobs and income in the twentieth century. Farming continued and the Penobscot Canning Company operated from the late 1930s to the early 1970s, employing 40-50 people at its peak. The Richland Peat Mines operated over the same period, employing up to several dozen men. Tourism and seasonal vacationing started to become important in the early twentieth century, then subsidized during the Great Depression before once again becoming important in the late twentieth century to the present. Another major local employer was Berzinis Nursing

¹⁰ Snowman Printing, 2011

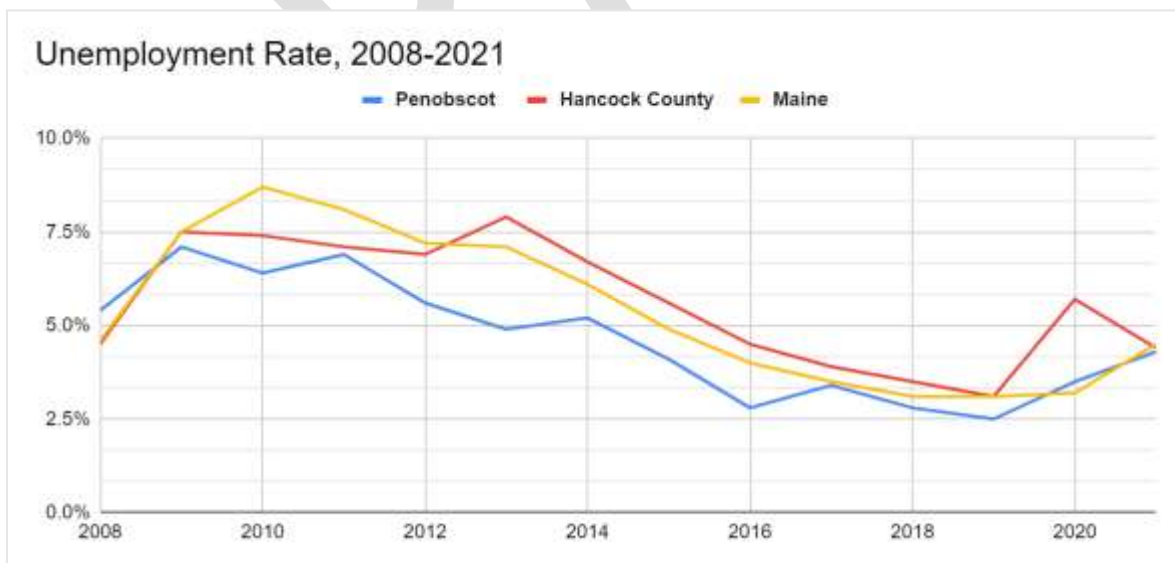
Home, which opened in 1960 and became the Town’s largest employer. However, the nursing home closed in 2014 and an associated assisted living facility closed in 2017. Since about the mid-twentieth century, Penobscot residents have increasingly traveled out of town for employment. The paper mill in Bucksport was a source of employment for a number of Penobscot residents until the mill closed in 2014.

5.2. Present Trends

The remainder of this section discusses present economic conditions in Penobscot. Economic development efforts have been limited; no development plans have been written for Penobscot or Hancock County in the past 5 years. The Eastern Maine Development Corporation prepared a “2016 Comprehensive Economic Development Strategy,” which does include Hancock County but is not specific to Penobscot. There are no economic development incentive districts in Penobscot.

Figure G-1 presents the annual average unemployment rates for Penobscot, Hancock County, and Maine for the previous 10 years. With the exception of 2017, when Maine and Penobscot unemployment rates were about the same, Penobscot’s rates have been consistently lower than the state’s rates, which, in turn, have been consistently lower than the rates for Hancock County.

Figure G-1: Annual Average Unemployment Rate, 2008-2021



Source: MDOL Center for Workforce, Research, and Information

As indicated in Table G-1, there are 297 jobs in Penobscot across nine industry sectors. These are jobs for wage and salary workers. They do not include self-employment and some other non-covered work, e.g., stern men working for self-employed lobstermen. The largest occupation is health care and social services, accounting for nearly 20% of jobs.

Table G-1: Industry Sector for Wage and Salary Jobs, 2021

Industry Sector	Number of Jobs	%
Construction	46	15%
Manufacturing	17	6%
Retail Trade	44	15%
Transportation and Warehousing	3	1%
Finance and Insurance	18	6%
Administration and Support, Waste Management, and Remediation	38	13%
Educational Services	39	13%
Health Care and Social Assistance	59	20%
Other Services (excluding Public Administration)	33	11%
Total:	297	

Source: 2021 ACS 5-Year Estimates

Total wages for privately owned Penobscot businesses in all industries are presented for the past six years in Table G-2. Total wages have increased significantly (59%) since 2017, while the number of establishments and average number of employees have also steadily risen. 2020 shows a small decline in these categories before rebounding the following year, a likely consequence of the Covid-19 Pandemic.

Table G-2: Average Private Industry Employment and Wages, 2017-2022

Year	# of Establishments	Avg # of Employees	Total Wages
2022	35	130	\$4,727,165
2021	32	117	\$3,870,701
2020	29	113	\$3,395,305
2019	30	117	\$3,454,158
2018	25	89	\$3,323,271
2017	25	86	\$2,970,486

Source: MDOL Center for Workforce, Research, and Information

Table G-3 shows the monthly earnings for wage and salary workers from the 101 jobs in Penobscot in 2019. Earnings for approximately 37% of those jobs were \$1,250 or less (the equivalent of an annual income of no more than \$15,000). About 20% of jobs produced earnings exceeding \$3,333 per month (\$40,000 per year). It should be noted, however, that some of these jobs may have been part-time.

Table G-3: Monthly Earnings for Wage and Salary Jobs, 2019

Monthly Earnings	Number of Jobs	%
\$1,250 or less	38	37.6%
\$1,251 to \$3,333	42	41.6%
More than \$3,333	21	20.8%
Total	101	

Source: US Census OnTheMap

In 2021, Penobscot residents held 522 wage and salary jobs, most of them outside of Penobscot. The most common occupational category is management, business, science, and arts occupations (27%). Natural resources, construction, and maintenance occupations (21%) and sales and office occupations (18%) are the next largest categories.

Table G-4: Industry Sector for Wage and Salary Jobs Held by Penobscot Residents, 2021

Occupation	Number	Percent
Management, business, science, and arts occupations	142	27.2%
Computer, engineering, and science occupations	17	3.3%
Education, legal, community service, arts, and media occupations	76	14.6%
Healthcare practitioners and technical occupations	43	8.2%
Service occupations	29	5.6%
Sales and office occupations	92	17.6%
Natural resources, construction, and maintenance occupations	109	20.9%
Production, transportation, and material moving occupations	85	16.3%
Total Persons 16 Year and Older Employed	522	

Source: 2021 ACS 5-Year Estimates

Table G-5 presents the commuting distances for Penobscot residents in these 101 jobs. For nearly half of workers in these jobs, the distance from home from home to work census is less than 10 miles.

Table G-5: Travel Distance to Wage and Salary Jobs Held by Penobscot Residents, 2019

One-way Distance	Number of Jobs	Percent
Less than 10 miles	52	51.5%
10 to 24 miles	26	25.7%
25 to 50 miles	12	11.9%

One-way Distance	Number of Jobs	Percent
Greater than 50 miles	11	10.9%
Total	101	

Source: US Census OnTheMap

Table G-6 indicates which places residents commute to. Castine is the most common place of work, accounting for 25% of these jobs, followed by Bucksport, Penobscot, and Orland.

Table G-6: Places Where Residents Worked, 2019

	Count	%
Castine	24	25%
Bucksport	10	10.4%
Penobscot	10	10.4%
Orland	9	9.4%
Blue Hill	4	4.2%
Surry	4	4.2%
Verona Island	3	3.1%
Skowhegan	3	3.1%
Deer Isle	2	2.1%
Franklin	2	2.1%
All Other Locations	25	26%

Source: US Census OnTheMap

Figure G-2 presents the inflow and outflow to and from Penobscot for employment. The map highlights that only 10 jobs in Penobscot are held by persons living in Penobscot, making clear that most residents commute outside of Penobscot to work.

Figure G-2: Inflow/Outflow, 2019



Source: US Census OnTheMap

6. Analysis

6.1. Is the economy experiencing significant change, and how does this, or might this, affect the local population, employment, and municipal tax base?

Over the past 10 years the unemployment rate in Penobscot has always been lower than that in Hancock County and, except for 2017, lower than the state rate as well. Even so, the closing of two worksites during that time period has impacted Penobscot. One worksite was the largest employer in Penobscot and the other the largest employer in Bucksport. In 2014, the 97-bed Penobscot Nursing Home closed; in 2017, the 54-bed Northern Bay Residential Center (an assisted living facility housed in the same building) followed suit. These closings affected both employment in and around Penobscot and the Town's tax base. In 2012, the two facilities generated more than \$2.5 million annually in payroll, paid Penobscot more than \$20,000 in property taxes, and had 85 employees. How many employees were Penobscot residents is unclear. In 2014, the Verso paper mill in nearby Bucksport shut its doors, leaving 570 employees out of work. The number of Penobscot residents working at the mill at that time is not known, though former employees residing in Penobscot report there were likely between 10 to 20.

The nearby town of Bucksport is currently experiencing considerable economic growth. Whole Oceans is expected to open an on-land salmon farm and a fish processing plant in the near future. These facilities are expected to provide 140 to 150 well-paying jobs (starting salaries at the lowest level between \$15 and \$18 per hour), and the number of jobs could grow to 250 with additional phases of the project. Some of those jobs will likely go to Penobscot residents. In addition, Maine Maritime Academy has opened a professional training center in Bucksport, though it generated fewer new jobs.

Sales of residential real estate in Bucksport have increased recently, with a concurrent rise in home prices. It is possible that economic development in Bucksport will lead people to look for less expensive real estate in Penobscot and perhaps to build here, increasing our population and providing more work to Penobscot construction companies.

As noted below, access to broadband internet service could increase the number of residents operating home businesses and telecommuting. Another potential area of economic growth could be in aquaculture.

6.2. Does the community have defined priorities for economic development? Are these priorities reflected in regional economic development plans?

Penobscot has not recently defined any priorities for economic development. However, Penobscot's 1997 comprehensive plan outlined three economic development policies:

- 1 Participating in regional efforts to protect and, if necessary, restore marine resources such as shell fishing and worming areas that create local jobs.
- 2 Participating in regional efforts to plan for the "information superhighway" and other technological developments that increase "telecommuting" job opportunities for Penobscot residents.
- 3 Assuring that any revisions to the town-wide zoning ordinance and other land use regulations:
 - a. Make adequate provision for home-based businesses... (with standards to protect surrounding residential properties)
 - b. Set reasonable performance standards for small-scale industrial and commercial operations in terms of noise, dust, glare, odors, and related nuisances so that operations have minimal impact on adjoining residential properties; and
 - c. Require that industrial operations meet lot set-back standards and be buffered from adjoining uses through vegetation or similar means.

In 2008 Penobscot adopted a Shellfish Ordinance as recommended by the 1997 plan. In addition, the Penobscot Alewife Committee is working with the Brooksville Fish Committee, Sedgwick Marine Resources Committee, MCHT, and Maine Center for Coastal Fisheries to regain the right to harvest alewives from the Bagaduce River.

Penobscot partnered with nearby towns to extend high speed internet services across the Blue Hill Peninsula, which is now nearly complete. More information on these is provided in the section on Public Facilities and Services.

These priorities related to zoning ordinances or other land use regulations have not yet been incorporated into any of the Town's land use regulations or related ordinances (Subdivision Ordinance, Shoreland Zoning Ordinance), except that industrial operations are prohibited in the shoreland zone.

With exception of broadband access, the above policy priorities do not seem to be reflected in the regional "2016 Comprehensive Economic Development Strategy" developed by the Eastern Maine Development Corporation, but neither do they contradict them.

6.3. Is there a traditional downtown or village center(s) in the community? If so, are they deteriorating or thriving?

Historically Penobscot had several village centers distributed across the Town; however, these individual areas declined as government services became more centralized and businesses closed. The Town no longer has a downtown or village area as seen in larger neighboring communities like Blue Hill and Bucksport. Services are clustered near the intersection of Routes 199 and 175. They include the Town Hall, post office, fire department, the Town's elementary and middle school, a church, and the Penobscot Historical Society. Also in this area is the Town's largest structure that once housed the nursing home and assisted living facility, which closed in 2014 and 2017, respectively. The nursing home property was sold in 2021 with plans for development, though none has occurred to date. A general store, Northern Bay Market, is about a mile south on Route 175; it has traditionally served as a gathering spot for townspeople. Near the store the Cannery, a local arts and culture center, opened in a repurposed canning factory about 5 years ago. Otherwise, there has been no development in the village center in recent years.

6.4. Is tourism an important part of the local economy? If so, what steps has the community taken to support this industry?

Penobscot is not as well-known among tourists as some other towns on the Blue Hill peninsula. It seems more travelers pass through Penobscot on their way to Castine or Blue Hill, better-known tourist destinations, than stop here. Still, tourism is an important part of the local economy, although calculating its economic value is difficult. According to the former owner of Northern Bay Market, summer residents and tourists increased its business by about 30%, though it was difficult to determine how much of that increase can be attributed to tourists.

There are no hotels, motels, inns, or bed and breakfasts in Penobscot. However, there are an estimated 25-40 short-term vacation rentals in town. There are two seasonal take-out seafood restaurants with outdoor seating in town, Bagaduce Lunch and Bayview Take-out, although Bayview did not open in 2022 or 2023 and its future is uncertain. The road along the Bagaduce River passes through parts of town. It was listed as one of the 25 most scenic roads in Maine in a 2016 travel guide and has the potential to draw more visitors to Penobscot.

Penobscot is located on scenic Northern Bay and has several attractive ponds, which are sites for summer homes and rental units. Building, improving, and maintaining these properties provide employment for many tradespeople from Penobscot and the surrounding area.

The Town has not taken any steps to directly support tourism, but the Town's Shoreland Zoning Ordinance to protect natural resources along the coast may have the unintended effect of supporting tourism as well.

6.5. Do/should home occupations play a role in this community?

Home-based businesses are a critical component of Penobscot's economy. There are over 30 known home businesses in Penobscot. Extension of high-speed internet throughout the Town is anticipated to increase the number of home-based businesses. Home-based telecommuting is also an important source of employment for working-age residents and is anticipated to increase.

6.6. Are there appropriate areas within the community for industrial or commercial development? If so, are performance standards necessary to assure that industrial and

commercial development is compatible with the surrounding land uses and landscapes?

Penobscot's Shoreland Zoning Ordinance designates a Commercial Fisheries/Maritime Activities District in the Shoreland Zone. No other areas have been designated for industrial or commercial development, and the Subdivision Ordinance prohibits commercial businesses (excluding home-based businesses) in new subdivisions. There are no other regulations regarding industrial or commercial development and a new ordinance specific to these activities, such as a Commercial Site Plan Review, will be necessary to ensure new development is compatible with existing land uses and landscapes.

6.7. Are public facilities, including sewer, water, broadband access, or three-phase power, needed to support the projected location, type, and amount of economic activity, and what are the issues involved in providing them?

In 2023, Penobscot was connected to high-speed internet via fiber optic cable provided by Fidium Fiber. It is not clear if such businesses might require sewer and water services. Whether Penobscot will develop the kinds of industry that would require three-phase power is uncertain.

6.8. If there are local or regional economic development incentives such as TIF districting, do they encourage development in growth areas?

There are no local or regional economic development incentives that we are aware of.

6.9. How can/does the community use its unique assets such as recreational opportunities, historic architecture, civic events, etc. for economic growth?

The community protects its natural resources, which are critical to recreational opportunities that support tourism. The annual Penobscot Day, held in July, is a spirited civic event that showcases many of the benefits of living in a small town like Penobscot and may serve to attract new residents. The Alewife Committee and several partner organizations host the annual Bagaduce River Alewife Celebration at Pierce's Pond that typically draws over 300 people to the area.

The Town's excellent elementary/middle school has a very positive culture and impressive standardized test scores. School staff and parents have made efforts recently to promote the school more effectively, and this could draw more young families to Penobscot.

7. Goals, Policies, and Strategies

Goal: To promote an economic climate that increases job opportunities and overall economic well-being.

Policy 1: Support the type of economic development activity the community desires, reflecting the community's role in the region.

Strategies:

- a. Consider amending local ordinances to protect residents' ability to operate home-based businesses.
- b. Consider developing a Commercial Site Plan Review to help economic growth conform to the Town's vision in terms of scale, design, intensity, and location.

Policy 2: Make a financial commitment, if necessary, to support desired economic development, including needed public improvements.

Strategies:

- a. Provide financial support to regional economic development planning and initiatives, as appropriate.

Policy 3: Coordinate with regional development corporations and surrounding towns as necessary to support desired economic development.

Strategies:

- a. Participate in regional economic development planning and activities.

Chapter H: Housing

1. Purpose

A comprehensive plan needs to address several key housing issues. These include changes in conditions and needs as well as projecting future demand for housing. This section aims to:

- a. Describe recent trends in Penobscot's housing stock in terms of types and number of units created;
- b. Discuss housing affordability (cost to rent or own);
- c. Project future housing needs;
- d. Describe the benefits that will accrue to Penobscot from a supply of available and affordable housing; and
- e. Recommend ways to increase the supply of housing that is safe, energy-efficient, and affordable for a multi-occupational and multi-generational community.

2. Key Findings & Issues

Penobscot has about 524 occupied homes, most of which are owner-occupied, single-family homes. There are only about 45 long-term rental properties. There are an estimated 18 vacant homes in town. The median price of homes in Penobscot is out of reach for residents making the median income, and housing in Penobscot is less affordable than Hancock County or the State as a whole. Home prices have increased dramatically in the last few years.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan found that nearly 90% of homes were single-family houses and most of the rest were mobile homes. Housing prices were then slightly below the county average. Penobscot also had a greater incidence of substandard housing than the county. Housing stock rapidly increased in the 1970s and then slowed in the 1980s.

4. 2022 Public Opinion Survey Results

About 20% of survey takers were part-time residents who expect to increase the amount of time they stay in Penobscot, to include permanent residence, while 8% expect to spend less time or move away from town. Almost 5% plan to sell their homes, 2% plan to rent them long-term, and another 7% of respondents plan to rent their home part-time as a short-

term or vacation rental. Nearly 10% of respondents expect to provide land to a family member to build a home sometime in the next 5 years.

45% of respondents thought apartment buildings should not be allowed in Penobscot while a similar amount thought they should be built only in certain areas, with most of those preferring them close to the village. For other types of multifamily housing, 37% thought it should be allowed anywhere and 32% wanted it only in designated areas. Over half of respondents thought mobile home parks should not be allowed anywhere in town (56%). On the other hand, 44% of respondents thought mobile homes (not in a park) should be allowed anywhere and 17% thought they should only be allowed in designated areas.

Most people thought single family homes other than mobile homes (78%), seasonal rentals (60%), short-term rentals (56%), and tiny homes (72%) should be allowed anywhere.

5. Conditions and Trends

5.1. Housing Stock

As indicated in Table H-1, of approximately 524 occupied, detached, single-family housing units in Penobscot, approximately 91% are owner occupied and approximately 9% are rentals. Barring any major economic or physical events, these proportions are likely to continue into the foreseeable future.

Table H-1: Housing Unit by Type

	Estimate
Occupied Housing Units	524
Owner-Occupied Units	479
Renter-Occupied Units	45
Vacant Units	327*
Total Housing Units	851

Source: 2021 ACS 5-Year Estimates

5.2. Affordability

Homeownership in Penobscot is not affordable for persons earning the median income and is less affordable than the County and State.

Table H-2: Affordability, 2022

	Penobscot	Hancock County	Maine
Affordability Index	.48	.62	.64
Median home price	\$349,000	\$359,000	\$334,00
Annual income needed to afford median home price	\$106,168	\$109,005	\$106,225
Hourly income needed to afford median home price	\$51.04	\$52.41	\$51.07
Median income	\$51,374	\$68,056	\$68,316
Home price affordable to median income	\$168,878	\$224,701	\$214,805
% of households unable to afford median price home	78.2%	73.5%	71.9%
% of homes sold unattainable to median income households	75.0%	79.5%	76.5%

Source: Maine Housing

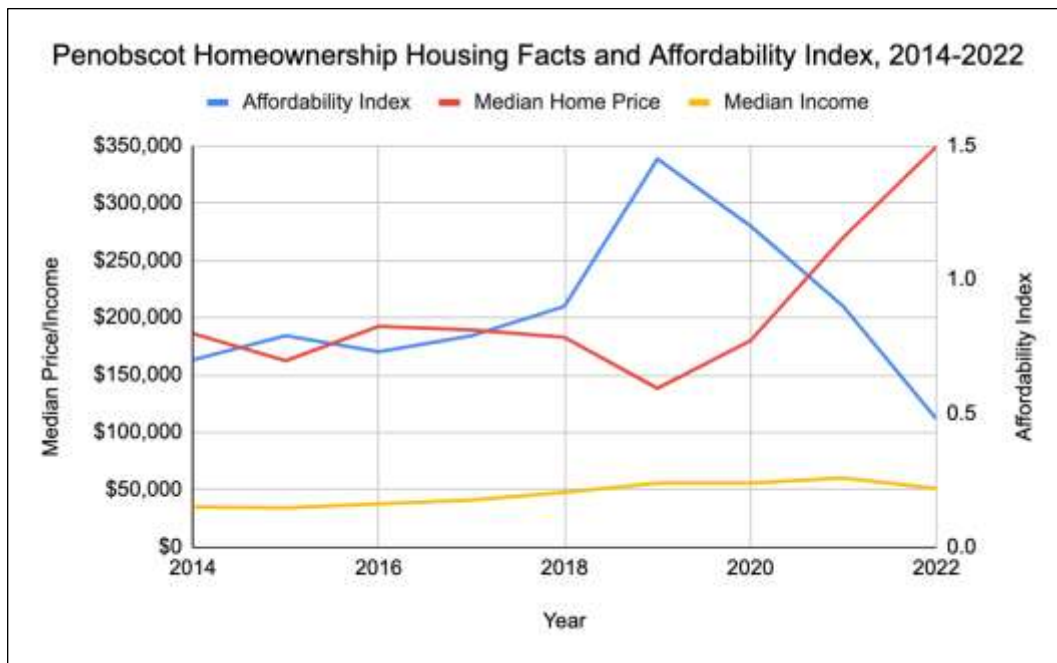
Over the last three years the affordability of homeownership has dropped in Penobscot, the County, and the State. This is due to a more dramatic increase in the median home price and an 8% decrease in median income from 2020 to 2022. Figure H-1 illustrates these trends for Penobscot over the past decade.

Table H-3: Affordability, 2020-2022

	Penobscot	Hancock County	Maine
Affordability Index			
2020	1.20	0.85	0.91
2021	0.90	0.76	0.80
2022	0.48	0.62	0.64
Median Home Price			
2020	\$180,000	\$274,000	\$255,000
2021	\$270,000	\$324,900	\$295,000
2022	\$349,000	\$359,000	\$334,000
Median Income			
2020	\$56,061	\$59,959	\$63,335
2021	\$60,476	\$61,944	\$63,421
2022	\$51,374	\$68,056	\$68,316

Source: Maine Housing

Figure H-1: Penobscot Affordability, 2014-2022



Source: Maine Housing

There are no existing local or regional affordable/workforce housing coalitions that could help the Town provide additional housing. There is, however, the National Program for First-Time Home Buyers, the Maine Housing’s First Home Loan Program, and the 2019 Maine Affordable Housing Subdivision Program. Penobscot does not have any local regulations or ordinances affecting the development of affordable/workforce housing, except where the Shoreland Zoning Ordinance regulates what can and cannot be built on coastal property.

5.3. Occupancy and Housing Costs by Tenure

Table H-4 provides data by household income on Penobscot homeowners and renters who are paying at least 30% of their income on housing. Close to half of homeowners and all renters earning under \$50,000 a year pay 30% or more of that income on housing costs.

Table H-4: Households Paying 30% or More of Household Income on Housing Costs by Household Income

Household Income in Past 12 Months	Owner-Occupied Housing Units		Renter-Occupied Housing Units	
	Number of Owners	Estimated % Paying 30% or More of Household Income on Housing Costs	Number of Renters	Estimated % Paying 30% or More of Household Income on Housing Costs
Less than \$20,000	99	72	14	100%
\$20,000 - \$34,999	52	17	0	0%
\$35,000 - \$49,999	93	27	4	100%
\$50,000 - \$74,999	81	5	8	0%
\$75,000 or more	154	3	3	0%
No cash rent	-	-	16	-
Total	479	-	45	-

Source: 2021 ACS 5-Year Estimates

Tables H-5 and H-6 present additional information comparing Penobscot homeowners and renters. Table H-5 displays their income distributions and indicates that 22% of those in owner-occupied housing have incomes under \$25,000, whereas the figure is 53% for those in renter-occupied housing. Table H-6 displays monthly housing costs by housing type. While costs of owner-occupied units range from less than \$300 to between \$2,500 and \$2,999, costs for close to 60% of those units are less than \$800/month. By contrast, where there is cash rent, the costs for nearly all renter-occupied units fall between \$800 and \$1,999. No cash rent is paid in 16 (36%) of the 45 renter-occupied housing units.

Table H-5: Income Distribution for Owner- and Renter-Occupied Housing

Household Income in Past 12 Months (in 2021 inflation-adjusted dollars)	Owner-Occupied Housing Units		Renter-Occupied Housing Units	
	Estimated Number of Owners	%	Estimated Number of Renters	%
Less than \$5,000	23	4.8%	0	0%
\$5,000 - \$9,999	8	1.7%	0	0%
\$10,000 - \$14,999	5	1.0%	22	48.9%
\$15,000 - \$19,999	63	13.2%	0	0%
\$20,000 - \$24,999	5	1.0%	2	4.4%
\$25,000 - \$34,999	47	9.8%	0	0%
\$35,000 - \$49,999	93	19.4%	4	8.9%
\$50,000 - \$74,999	81	16.9%	14	31.1%
\$75,000 - \$99,999	56	11.7%	2	4.4%
\$100,000 - \$149,999	65	13.6%	1	2.2%
\$150,000 or more	33	6.9%	0	0%
Total	479		45	
Median Household Income	\$48,594	-	Unknown	-

Source: 2021 ACS 5-Year Estimates

Table H-6: Monthly Housing Costs by Housing Type

Monthly Housing Costs	Owner-Occupied Housing Units		Renter-Occupied Housing Units	
	Estimated Number of Owners	%	Estimated Number of Renters	%
Less than \$300	13	2.7%	0	0.0%
\$300 to \$499	156	32.6%	0	0.0%
\$500 to \$799	115	24.0%	1	2.2%
\$800 to \$999	43	9.0%	18	40.0%
\$1,000 to \$1,499	55	11.5%	6	13.3%
\$1,500 to \$1,999	57	11.9%	4	8.9%
\$2,000 to \$2,499	15	3.1%	0	0.0%
\$2,500 to \$2,999	25	5.2%	0	0.0%
\$3,000 or more	0	0.0%	0	0.0%
No cash rent	-	-	16	35.6%
Total	479		45	
Median cost	\$690	-	\$944	

Source: 2021 ACS 5-Year Estimates

5.4. Owner-Occupied Housing Characteristics

Tables H-7 and H-8 present further data on owner-occupied housing. Table H-7 shows less than a quarter (24%) of owner-occupied housing has a value of less than \$150,000. Table H-8 indicates less than half of owner-occupied housing units have mortgages.

Table H-7: Owner-Occupied Housing by Home Value

Value	Estimate	%
Less than \$50,000	7	1.5%
\$50,000 - \$99,999	71	14.8%
\$100,000 - \$149,999	37	7.7%
\$150,000 - \$199,999	89	18.6%
\$200,000 - \$299,999	140	29.2%
\$300,000 - \$499,999	78	16.3%
\$500,000 - \$999,999	53	11.1%
\$1,000,000 or more	4	0.8%
Total	479	
Median value	\$225,700	-

Source: 2021 ACS 5-Year Estimates

Table H-8: Mortgage Status of Owner-Occupied Housing Units

Mortgage Status	Estimate	%
Housing units with a mortgage	200	41%
Housing units without a mortgage	279	58.2%
Total	479	

Source: 2021 ACS 5-Year Estimates

Table H-9 indicates that 17% of owner-occupied homes in Penobscot were constructed before 1940, more than half (58%) were built between 1980 and 2009, and the remainder were built after 2009. Table H-10 reveals that about half (49%) of homes in Penobscot are heated with fuel oil, kerosene, etc. and only 8% by electricity.

Table H-9: Year Structures Were Built

Years	Estimate	%
Built 2020 or later	0	0%
Built 2010 to 2019	1	0.1%
Built 2000 to 2009	199	23.4%
Built 1980 to 1999	278	32.7%
Built 1960 to 1979	142	16.7%
Built 1940 to 1959	82	9.6%
Built 1939 or earlier	149	17.5%
Total	851	

Source: 2021 ACS 5-Year Estimates

Table H-10: Heating Fuel Used in Occupied Housing Units

	Estimate	%
Utility gas	10	1.9%
Bottled, tank or LP gas	41	7.8%
Electricity	41	7.8%
Fuel oil, kerosene, etc.	259	49.4%
Coal or coke	0	0%
Wood	167	31.9%
Solar energy	0	0%
Other fuel	6	1.1%
No fuel used	0	0%
Total	524	

Source: 2021 ACS 5-Year Estimates

6. Analysis

6.1. How many additional housing units (if any), including rental units, will be necessary to accommodate projected population and demographic changes during the planning period?

Official population projections indicate a slow decline in Penobscot's population through 2040, suggesting a need for few, if any additional housing units over the next 15 years. However, as noted in Section F (Population and Demographics), several factors might prove those projections incorrect, and the population might be stable or increase over the planning period. In this case the need for single-family housing would increase, but the amount of additional housing that would be needed is unknown. As indicated in Table H-1, there are an estimated 524 occupied housing units, 475 owner-occupied and 45 renter-occupied.

6.2. Is housing, including rental housing, affordable to those earning the median income in the region? Is housing affordable to those earning 80% of the median income? If not, review local and regional efforts to address the issue.

According to 2022 data from the Maine State Housing Authority, Penobscot rates lower than both Hancock County and the state as a whole on housing affordability indicators. As noted in Table H-2, the 2022 Homeownership Affordability Index is 0.48 for Penobscot. An index of less than 1 indicates the area is generally unaffordable, which means a household earning the area median income would not be able to afford a 30-year mortgage, taxes, and insurance on a median priced home.

As indicated in Table H-3, the affordability index for Penobscot was 1.20 in 2020; this decrease in affordability is largely the result of dramatically rising home prices. In Penobscot, the median home price rose from \$180,000 in 2020 to \$349,000 in 2022. At the same time there was a decrease in median income from \$56,061 in 2020 to \$51,374 in 2022.

Data also suggests that rental housing is not affordable for persons at lower levels of income in Penobscot. As shown in table H-4, both owners and renters earning below \$50,000 a year are much more likely to spend at least 30% of their income on housing than those earning \$50,000 or more. It is estimated that 44% of owners earning less than \$50,000 fall into this category while 100% of renters earning less than \$50,000 do.

Various towns of the Blue Hill Peninsula, including Penobscot, have formed a task force to investigate housing affordability in this region. However, there are not currently any active programs in the region to help make housing more affordable. State-wide Affordable Homeownership & Rental Development programs were recently initiated under the Maine Housing Authority as part of the Maine Jobs and Recovery Plan.

6.3. Are seasonal homes being converted to year-round use or vice-versa? What impact does this have on the community?

Anecdotal evidence suggests there are probably more year-round to seasonal, than seasonal to year-round conversions taking place. The upside of this is whatever disposable income seasonal residents spend for local products and services when they are in town. It may also increase the Town's tax income since second homes remain ineligible for the homestead tax exemption.

The downside is that seasonal residency generally diminishes participation in town government and civic activities, while effectively locking up properties from potential year-round families with children who could swell the school population.

6.4. Will additional low and moderate income family, senior, or assisted living housing be necessary to meet projected needs for the community? Will these needs be met locally or regionally?

As indicated in Table F-5, in 2021 the estimated percentage of families below the poverty level was higher in Penobscot than in either Hancock County or the state as a whole (7.2%). Combined with the general unaffordability of housing in Penobscot, additional low and moderate housing would help meet the housing needs of less affluent residents in Penobscot and the surrounding area. Economic development in Bucksport may lead to greater interest in affordable housing in Penobscot.

Table F-2 makes evident that Penobscot has an older population (in 2021, 32.9% of residents were 65 or above) than Hancock County (24.9%) or the state as a whole (21.7%), suggesting perhaps a greater need for senior or assisted-living housing, but since the closing of the nursing home in 2014, and the Residential Living Center in 2017, Penobscot has had neither type of housing. Regionally, the Island Nursing Home in Deer Isle closed in 2021, further reducing regional availability. Senior and assisted living housing are available in Blue Hill, and a local nonprofit (Home Instead) provides in-home senior care in the area.

6.5. Are there other major housing issues in the community, such as substandard housing?

Penobscot is a small town that is not required to enforce the State Building Code, so knowledge of actual conditions in town housing units is limited. Due to the age of housing stock, it seems likely there are homes that fall short in one or more code categories, e.g., insufficient insulation, antiquated or substandard wiring, lead paint on walls, and poor plumbing. Penobscot does not presently appear to have a means of determining whether these conditions exist or addressing such issues.

6.6. How do existing local regulations encourage or discourage the development of affordable/workforce housing?

Penobscot's land use regulations include a minimum lot size for residential uses, no more than 20% of which may be covered by structures. There are no limits on the number of residential dwellings that can be built on a lot, provided existing restrictions and conditions are met. Mobile homes are prohibited from residential subdivisions except in Mobile Home Park subdivisions.

LD 2003, which is set to be implemented statewide starting in 2024, was designed to remove unnecessary regulatory barriers to housing production in Maine and encourage the development of new affordable housing units. The law creates an automatic density bonus for developments that meet specific requirements. If eligibility requirements are met, the number of multifamily dwelling units allowed will be 2.5 times greater than the number allowed for a development that is not designated as affordable. An affordable housing development must also comply with shoreland zoning requirements established by DEP, and municipal shoreland zoning ordinances.

The Town does not have any local regulations or ordinances affecting the development of affordable/workforce housing, except where the Shoreland Zoning Ordinance regulates what can and cannot be built on coastal property. Penobscot's Subdivision Ordinance governs the subdivision of parcels, which must meet existing land use regulations.

7. Goals, Policies, and Strategies

Goal: To encourage and promote affordable, decent housing opportunities for Penobscot's residents.

Policy 1: To encourage and promote adequate and affordable housing to support the community's and region's economic development.

Strategies:

- a. Seek to achieve a level of at least 10% of new residential development built or placed during the next decade be affordable.

Policy 2: To ensure that land use controls encourage the development of quality affordable housing, including rental housing.

Strategies

- a. Maintain existing ordinance provisions to allow additional dwelling units subject to soil suitability.

Policy 3: To encourage and support the efforts of the regional housing coalitions in addressing affordable and workforce housing needs.

Strategies:

- a. Create or continue to support a community affordable/workforce housing committee and/or regional affordable housing coalition.
- b. Support the efforts of local and regional housing coalitions in addressing affordable and workforce housing needs.

Chapter I: Recreation

1. Purpose

A community's quality of life is an important factor for most people when choosing a place to live, and as such is often related to the growth and development of a town or area. This section contains an inventory of current recreation and health facilities and an analysis of how these may be affected by future change and growth. Specifically, this section will:

- a. Describe current recreational and health resources in Penobscot;
- b. Assess the current and future adequacy of these resources; and
- c. Predict whether the availability of open spaces for public access and recreation will be threatened by future growth and development.

2. Key Findings & Issues

The Town has a range of outdoor recreational opportunities available on conserved lands, ponds, and rivers. However, public trails are limited to foot traffic and there are no dedicated or multi-use trails accommodating bicycling, skiing, horseback riding, or motorized vehicles. Organized recreational activities mainly consist of children's scouts and sports programs at the school and Jim Henry Field. Adult activities are more informal, although local groups use Jim Henry Field and the school's gymnasium for league and pick-up sports. Local churches host entertainment events and allow use of their community centers. That said, some residents have expressed a desire for more locally organized recreational activities and a dedicated community center with programming for children, adults, and seniors. Some have also expressed a wish that local roads were safer for pedestrians and bicycles.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan commented that the Town had limited recreational facilities and protected open space, with only two islands in the Bagaduce River and a parcel on Toddy Pond under conservation easement.

4. 2022 Public Opinion Survey Results

The vast majority of respondents were in favor of protecting recreational open space (81%) and recreational waterfront access (90%). Less than one-fifth (17%) of respondents thought public access to freshwater needs improvement, while over one-quarter (26%)

thought public access to saltwater needs improvement. One-third (33%) of respondents thought recreational programs need improvement while 27% thought they were adequate or better. Several respondents noted the need for a community center where residents of all ages could meet for recreation and social activities.

Responses on specific recreation-related services were mixed. For example, regarding pedestrian paths or trails, 30% thought this is not an issue, 21% recommended study, 40% said the issue needs improvement. Similarly, 35% thought off-road multi-use trails are not an issue while 43% wanted study or improvement. Regarding pedestrian sidewalks, 42% stated this is not an issue, 23% recommended study, and 29% wanted improvement.

5. Conditions and Trends

5.1. Trail-Based Recreation

There are no motorized trail systems in Penobscot. However, all-terrain vehicles and Snowmobiles are commonly used on private lands and on Wallamatogus Mountain. At present there are no community clubs or groups pursuing the establishment of motorized trails.

Skiing trails are not available in Penobscot, but cross-country skiing over private land does occur on private property and conserved lands. Mountain biking is becoming a more popular form of recreation, but there are no trails dedicated to this use.

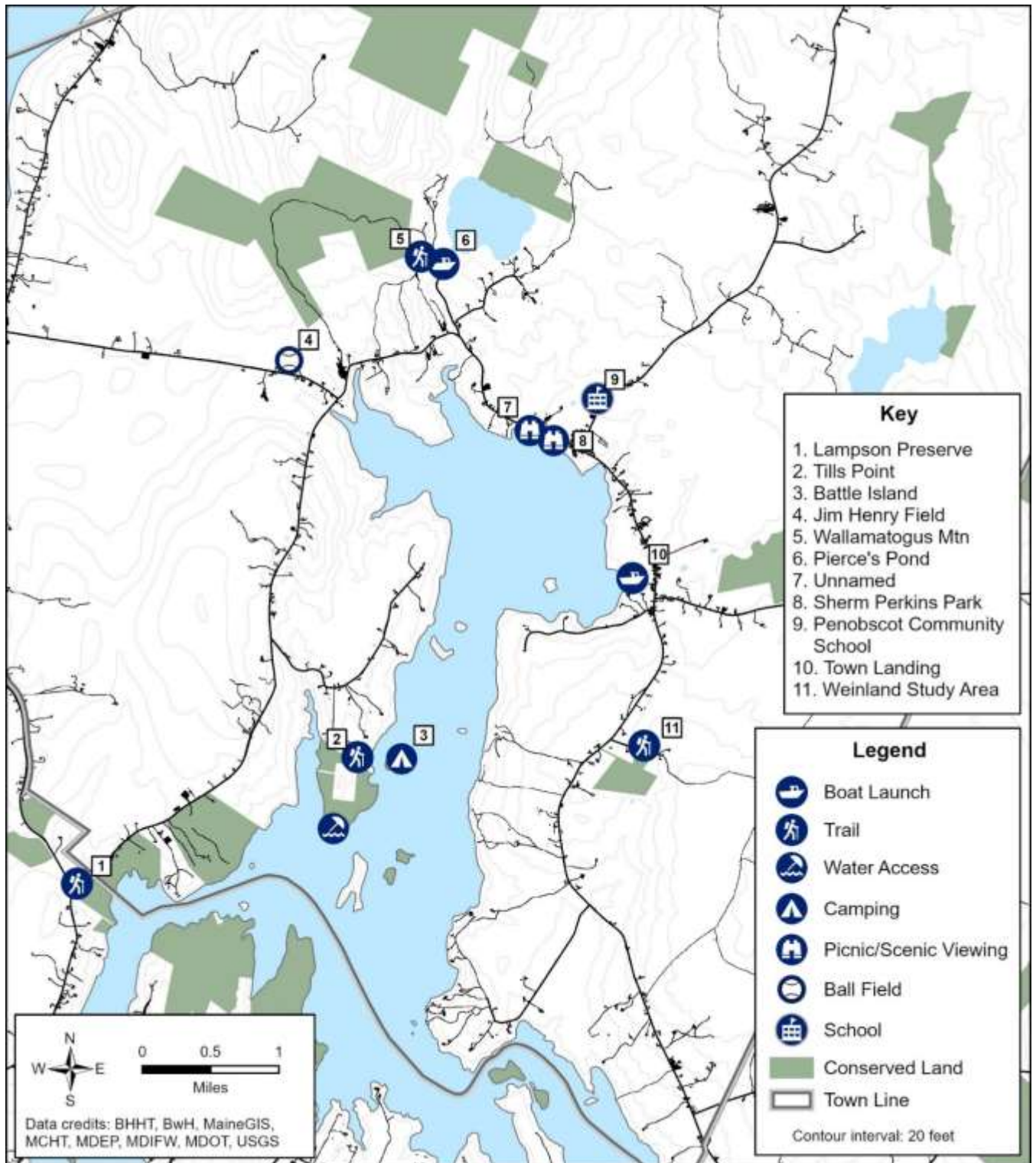
There are many hiking opportunities throughout Penobscot on trails owned and maintained by BHHT and MCHT, and on privately owned lands (Table I-1, Figure I-1). Penobscot has trails on Tills Point, Weinland Nature Study Area on Gray Ridge Road, Starr and Virginia Lampson Preserve which is located on the border of Penobscot and Castine, Sherman Perkins Park and an adjacent parcel along the Northern Bay. Hiking is also available on Wallamatogus Mountain, property owned by BHHT.

Table I-1: Streams and Large, Named Wetlands

Name	Facilities	Activities	Trail Length	Parking Capacity	Policies	Owner
Battle Island		Camping	N/A	N/A	Carry in/carry out. Two-night limit.	MCHT
Tills Point	Trailhead, parking, hand carry boat access	Hiking, paddling	0.5 mi	3		MCHT
Starr and Virginia	Trailhead, parking	Hiking	0.9 mi	3-5		MCHT

Name	Facilities	Activities	Trail Length	Parking Capacity	Policies	Owner
Lampson Preserve						
Wallamatogus Mountain	Trailhead, parking	Hiking	*	4		BHHT
Weinland Nature Study Area	Trailhead, parking	Hiking	1.0 mi	3	Pets must be leashed, carry in/carry out, No fires. Foot traffic only.	BHHT
Pierce's Pond	Boat ramp, educational displays, trail, parking, restroom (seasonal)	Boating, hiking		5-7		Town
Sherm Perkins Park	Bench	Scenic viewing, pollinator garden		3		BHHT
Unnamed Picnic Area	Picnic tables	Picnicking, scenic viewing		20		MCHT
* Trails and trail information are still under development (as of October 2023)						

Figure I-1: Recreational Facilities and Public Use Trails, Picnic Areas, and Camping



In 2022, Penobscot purchased 192 acres fronting Winslow Stream, with 142 acres having a conservation easement held by MCHT. Trails may be developed on this property in the future.

5.2. Water-Based Recreation

Penobscot has four freshwater ponds: Toddy Pond, Pierce's Pond, Wight's Pond, and Turtle Pond. The Town is flanked on its southern border by the Penobscot River and Bagaduce River. Pierce's Pond and the Bagaduce River are publicly accessible with boat launches and parking areas. However, the boat landing at Winslow Cove lacks adequate parking. Toddy Pond is accessible by a public boat launch in Orland. Boat launches are shown in Figure I-1. See also Figure E-1 in Chapter E, Marine Resources for locations hand carry and foot access to salt water.

Local recreational fishing and boating are practiced year-round in the Bagaduce and Penobscot River, Northern Bay, Pierce's Pond, Toddy Pond, and Wight's Pond. Pierce's Pond and the Town Landing on Northern Bay (Winslow Cove) have hard ramps for launching boats, kayaks, and canoes. Toddy Pond is accessible by means of a very well-maintained hard ramp located in Orland off Route 1. Commercial kayak groups use the Town Landing at Winslow Cove to access Northern Bay.

There are no public beaches in Penobscot, although residents do swim at the Town Landing at Winslow Cove and in local ponds. Swimming pools are available to residents of Penobscot through membership at nearby YMCA locations in Blue Hill and Ellsworth and at Maine Maritime Academy. Kayaking and swimming also occur at the reversing falls, accessed from the adjacent boat launch in Brooksville.

5.3. Other Outdoor Activities

There is one designated, unnamed picnic area in Penobscot at the head of Northern Bay on property owned by MCHT, next to Perkins Park. It has two picnic tables and is also used as a scenic viewing area.

The only established campsite is available on Battle Island Preserve, off the coast of Tills Point on the Bagaduce River. It has a limit of a two-night stay. The campsite is accessible by boat from the Town Landing at Winslow Cove.

There is a lot of hunting during the respective seasons: deer, turkey, duck, partridge, and bear are the most common types of game. Hunting takes place on private lands by permission and on lands owned by conservation trusts.

Another popular activity in Penobscot is bird watching by residents and tourists. The most spectacular example is the yearly congregation of bald eagles coming in the spring to feed on migrating alewives. It is common to see upwards of a dozen eagles swooping over the pools of water in Mill Creek or Pierce Pond. Northern Bay is a wintering place for arctic birds and is an important resource for migrating birds in the spring and fall (see Chapter C, Natural Resources). Areas of Penobscot are included in the Downeast Audubon's annual Christmas Bird Count.

5.4. Organized Recreational Activities

Penobscot has one Town-owned ball field. The Jim Henry Field, located off Rte. 175, is regularly used for baseball and softball games. The field is also used as a play area and hosts an annual co-ed softball tournament in the fall. Little League programs encompass t-ball, farm team, regular league, and girls' softball.

The Penobscot Community School has an outdoor playground that is open to the public. The school also owns an athletic field that supports baseball and softball. The school has a cross country running program, cheerleading, basketball, and cross-country skiing for interested students. The school has an indoor gymnasium which is available to Penobscot residents for use on evenings and weekends. Current activities include pickleball, pick-up basketball games, senior men's league, pee wee basketball and Downeast volleyball. Scouts BSA and Girl Scouts also meet there. In addition, the school sport facilities can be made available to any Penobscot resident, as long as they follow the policy as established by the Town.

The Town has two churches that allow use of their community centers. The centers contain gathering halls with kitchens and bathroom facilities. The Methodist Church hosts entertainment events, live music, and dinners on a regular basis. The Cannery, a privately owned art and performance center in South Penobscot, holds seasonal live music and visual arts performances. It is also a regular meeting place for a local knitting and crafts circle.

A celebration called Penobscot Day needs to be mentioned. It takes place on the second Saturday in July each year, and involves the Historical Society, Fire Department, live music

performance, children's games, parade through town, a massive yard sale and display of fireworks.

In collaboration with multiple non-profit agencies, the Alewife Committee has hosted a celebration of the Bagaduce River alewife migration at Pierce's Pond since 2018 with several hundred people attending each year. The celebration includes activities and the distribution of educational materials for children and smoked seafood for attendees.

5.5. Public Access and Parking

Figure I-1 shows conserved lands in Penobscot allowing public access.

There are no public parking lots in Penobscot. Parking is provided by local businesses for their customers and is available at churches, post office, school and other public buildings as needed. Parking is available at publicly accessible landings at Pierce's Pond (5-6 spaces), and the Town Landing at Winslow Cove (4 spaces). Parking is also available at various trailheads and the picnic area near Sherm Perkins Park, as listed in Table I-1.

Public toilets are seasonally available at the elementary school during sports events. Portable toilets are also available seasonally at the Jim Henry Field and Pierce's Pond boat landing. Local seasonal restaurants provide portable toilets for their patrons.

5.6. Regional Recreation Facilities

As is evident from the map in Figure I-2 below, there is a wealth of recreation and fitness opportunities in the Blue Hill Peninsula area. Some of these include the gym space and recreation programs provided by area schools, the many nature preserves and hiking trails provided by MCHT and other land trusts, and the several community centers.

Figure I-2: Regional Recreational Facilities



6. Analysis

6.1. Will existing recreational facilities and programs in the community and region accommodate projected growth or changes in age groups in your community?

Penobscot's future population trends are unclear with a possible increase in year-round residents. There has also been an increase in the number of summer residents and visitors as well as newcomers who have come to Penobscot to retire. Present facilities, recreational opportunities, and programs available in town and in the surrounding area are sufficient for the current population and can likely accommodate modest growth. However, additional recreational options may be needed for older residents, especially if the Town wants to improve the ability of residents to age in place.

6.2. Is there a need for certain types of services or facilities or to upgrade or enlarge present facilities to either add capacity or make them more usable?

There is a need for multi-use trails that accommodate more than foot traffic, e.g., skiing, bicycling, and possibly motorized activities. In particular, residents are interested in increasing bicycling opportunities and safety. There is also a need for access to the Penobscot River and all-tide access to salt water.

There is a desire for a dedicated community center, which was expressed in certain open responses to the public opinion survey. It is possible that residents are unaware of or unsatisfied with the community spaces available at the Methodist and Baptist churches. Some residents expressed a desire for a place to play sports like pickleball. Again, residents may be unaware of the availability of the school gym, or it is possible that those hours (evenings and weekends) are insufficient. Such facilities are also available in adjacent communities (Orland and Blue Hill). The Town should appoint a recreation committee to investigate whether recreational needs can be met through existing facilities in town and in adjacent communities or if there is a need for a new municipal facility.

6.3. Are important tracts of open space commonly used for recreation publicly owned or otherwise permanently conserved?

Most of the open spaces commonly available for recreational use are owned by land conservation groups. The only publicly owned spaces in Penobscot are Jim Henry Field, the school grounds, and public boat launches.

6.4. Does the community have a mechanism, such as an open space fund or partnership with a land trust to acquire important open spaces and access sites, either outright or through conservation easements?

The community does not have any such mechanism in place. However, BHHT and MCHT have conserved lands in Penobscot. BHHT in particular includes the Town's area in its planning for the purposes of conserving high-priority land, water, and habitat in the Blue Hill Peninsula. These land trusts purchase land and secure conservation easements to form protected areas, which are then open to the public, following established rules and regulations. BHHT has recently purchased 336 acres of Togus Mountain in 2022 and the Town recently purchased 192 acres on Winslow Stream from MCHT in 2022.

The public does not have local access (that is, within town boundaries) to all of the community's significant bodies of water. Currently, the Winslow Cove boat landing is the only public access to salt water in Penobscot. There is no access to the Penobscot River and public access to Toddy Pond is in Orland.

6.5. Are recreational trails in the community adequately maintained? Are there use conflicts on those trails?

Recreational trails in Penobscot are owned and maintained by the BHHT and the MCHT. They are for the most part quite well maintained. They are open to the public for the purpose of year-round hiking and hunting. There are not currently any use conflicts as all-terrain vehicles are not allowed on established trails. There is increasing interest among residents in re-creating trails for motorized vehicles, but there are not currently any private or public efforts to establish such trails in town.

6.6. Is traditional access to private land being restricted?

The Town does not track the amount of private land that allows traditional access (e.g., for hunting, fishing, or other recreation). Anecdotally, Penobscot residents report that more privately owned land access is being restricted, with more parcels being posted against trespassing. However, some privately owned lands remain accessible with owners' permission. Another possible risk concerns land that is presently open for fishing and hunting. Such areas also may become posted as land ownership changes. Conservation organizations like MCHT and BHHT allow hunting on their properties by permission, which preserves traditional access in these areas.

7. Goals, Policies, and Strategies

Goal: To promote and protect the availability of outdoor recreation opportunities, including access to surface water.

Policy 1: Maintain and consider/upgrade existing recreational facilities as necessary to meet current and future needs.

Strategies:

- a. Create a volunteer committee to develop a recreation plan to identify and meet current and future needs.
- b. Work with public and private partners to extend and maintain a network of trails for motorized and non-motorized uses. Connect with regional trail systems where possible.

Policy 2: Preserve open space for recreational use as appropriate.

Strategies:

- a. Continue to coordinate with BHHT and MCHT on their plans to protect important open space or recreational land.
- b. Provide educational materials regarding the benefits and protections for landowners allowing public recreational access on their property. At a minimum this should include information on Maine's landowner liability law regarding recreational or harvesting use, Title 14, M.R.S.A. §159-A.

Policy 3: Seek to achieve or continue to maintain at least one major point of public access to major water bodies for boating, fishing, and swimming, and work with nearby property owners to address concerns.

Strategies:

- a. Continue to maintain public access to Pierce's Pond and Northern Bay.
- b. Consider any opportunities that might arise to establish all-tide access to the Bagaduce and Penobscot Rivers.

Chapter J: Transportation

1. Purpose

The purpose of this section is to:

1. Identify and profile Penobscot's roadway and transportation systems in terms of extent, capacity, and use;
2. Assess the adequacy of those systems in handling current demands; and
3. Predict whether transportation improvements will be needed to adequately accommodate demands generated by projected increases in population and development within Hancock County.
4. Estimate general costs of providing the necessary transportation system improvements.

2. Key Findings and Issues

Penobscot has 36.2 miles of roadway, a minor increase since the previous comprehensive plan with the addition of an extra 1.13 miles. Traffic volume remains low when compared to the region. The town has several High Crash Locations (HCLs) on portions of Route's 15,199, and 166. The intersection of Rte. 175/199 and New Rd (Rte. 175) also continues to be a concern as is a stretch of Bayview Road (Rte. 175) at Mill Creek, which is seasonally popular for bird watching due to eagle feeding. Road conditions and maintenance, speeding, noise, and a lack of safe walking and bicycling paths are repeated concerns from residents. Narrow shoulders, aging culverts and changing weather patterns also pose a variety of threats to the town's roads and to public safety.

3. 1997 Comprehensive Plan Key Findings & Issues

While Penobscot still has a relatively low volume of traffic when compared to much of coastal Maine, traffic has been increasing over the past 20 years as the town and the region have grown. The most hazardous intersection is on Routes 175 and 199. Truck traffic is a major concern to residents.

One potential traffic issue in Penobscot is bicycle-motorist conflicts. The Town is popular with bicycle touring groups in the summer. Addressing bicycle safety concerns is important. Recreational bicycle use is a growing factor in the use of highways and must be considered in future highway planning.

4. 2022 Public Opinion Survey Results

Non-motorized transportation safety was a major concern among respondents to the public opinion survey. 64% indicate that bike rider safety needs improvement and 52% said pedestrian safety needs improvement. Similar numbers said the issues of bike paths/lanes (68%) and pedestrian sidewalks (52%) need study or improvement. 48.7% said that public transportation needs improvement and almost one-third of those responding said maintenance on both town roads and state-aid roads needs to be improved. 29% said snow removal needed to be improved and almost 42% said improvements were needed to control speed on the roads.

Responses to open questions echoed these concerns, citing increased traffic, speeding, walking and bicycle safety, poor quality of roads, better planning for road improvements and road maintenance.

5. Conditions and Trends

5.1. Road Mileage and Classification

Public roads can be classified according to administrative categories (e.g., a State Highway, a State-Aid Road, or a Town road) or by their function. There are three functional categories, which are defined below. Private ways are defined as driveways when they serve one or two dwellings and roads when they serve three or more dwellings. Figure J-1 shows roads in Penobscot, which are described by their length, administrative category, functional category, and the party responsible for the road's maintenance. The total mileage of public roads in town is 36.55 miles.

Arterials – Roads that connect major settlements and are designed for high-speed travel with limited access points. Route 1 and Route 95 are examples of arterial roads. There are no arterial roads in Penobscot.

Collectors – Roads that support traffic within a town or group of small towns or disconnected neighborhoods. They are designed to accommodate moderate speeds (35 – 45 mph) and a moderate traffic volume. There are approximately 26 miles of collector roads in Penobscot.

Local – Roads that are lightly traveled, mainly serving residential areas, or connecting those areas to downtowns. They are often narrower than the previous two road types and

accommodate speeds under 35 mph. There are approximately 10 miles of local roads in Penobscot.

5.2. Traffic Patterns and Volumes

Penobscot is served by several major State Highways and state-aid roads, along which most development has occurred. Route 199 serves as the primary connection between Penobscot and the rest of Maine via Route 15 in North Penobscot and Route 166 (via Rte. 175) in West Penobscot. Route 15 links Penobscot to Blue Hill and Orland. Route 166 also links Penobscot to Orland northbound, while 166 and 166A southbound link to Castine. Route 175/176 links the town to Sedgwick and Brooksville in the east and Route 177 links to Blue Hill. These roads are classified as collectors.

Figure J-1: Road Network

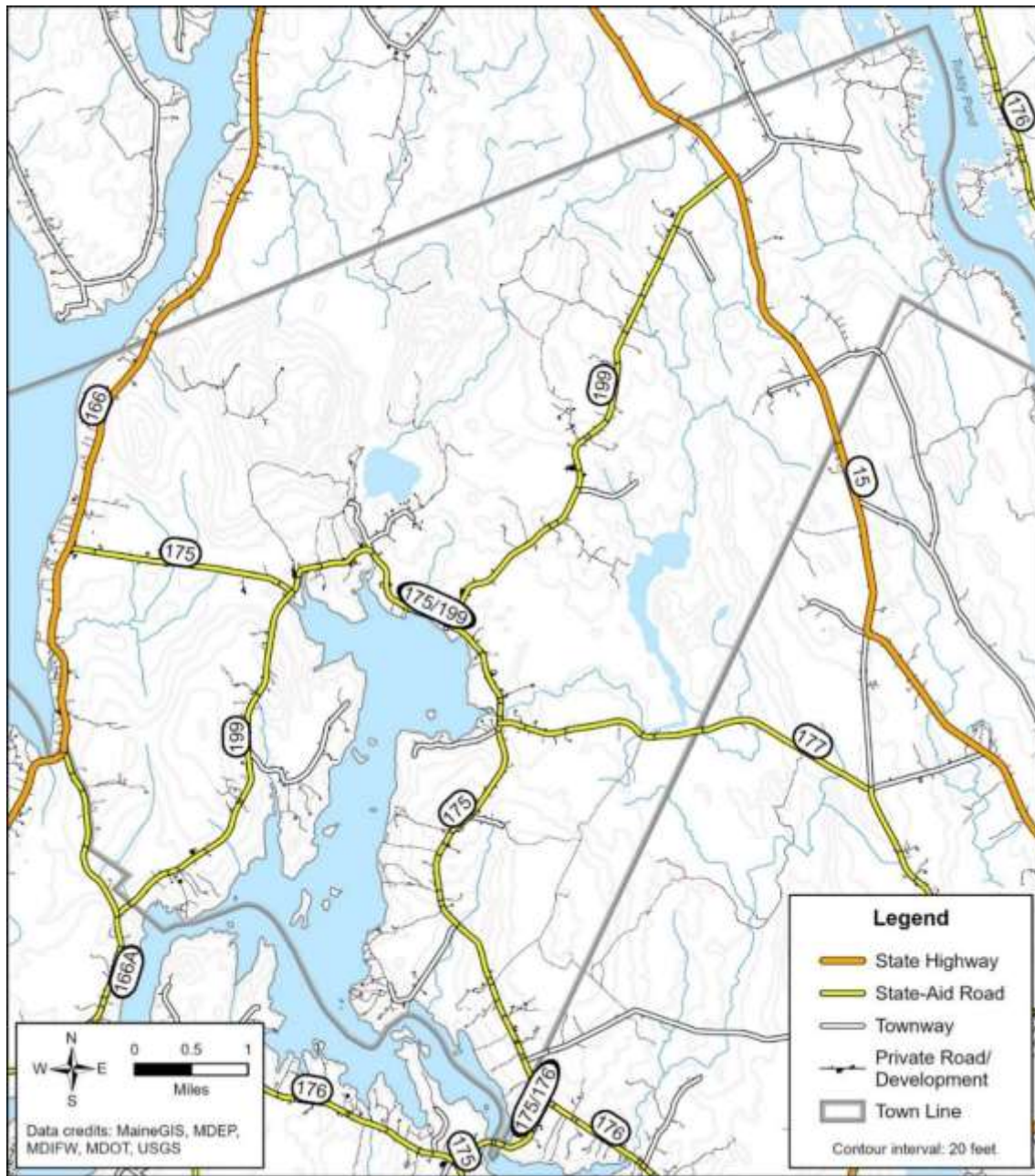


Table J-1: Classification and Mileage of Public Roads

Road Name	DOT #	FFC	Jurisdiction	Length (miles)	Maintenance
Route 15 (Front Ridge Rd)	0015X	Collector	State Highway	3.26	State
Route 166 (Castine Rd)	0166X	Collector	State Highway	1.89	State
Route 175 (Southern Bay Rd/Bayview Rd/ New Rd)	0175X	Collector	State-Aid	10.86	Town
Route 199 (North Penobscot Rd/Bayview Rd/Dunbar Rd)	0199X	Collector	State-Aid	8.45	Town
Route 177	0177X	Collector	State-Aid	1.87	Town
Back Ridge Rd	00389	Local	Townway	1.22	Town
Bridges Point Rd	00402	Local	Townway	0.84	Town
Dog Town Rd	00390	Local	Townway	0.54	Town
Dorr Rd	02707	Local	Townway	0.58	Town
Gray Ridge Rd	00010	Local	Townway	0.33	Town
Johnson Point Rd	00405	Local	Townway	1.06	Town
Kingdom Rd	00406	Local	Townway	0.21	Town
Mark's Corner Rd/ Horsepower Farm Rd	01682	Local	Townway	1.1	Town
McCaslin Rd	00396	Local	Townway	1.68	Town
Mill Creek Rd	01291	Local	Townway	0.46	Town
Pierces Pond Rd	00400	Local	Townway	0.62	Town
Town Landing Rd	None	Local	Townway	0.18	Town
Wardwell's Point Rd	01294	Local	Townway	1.4	Town

Source: MaineDOT

MaineDOT calculates the average annual daily traffic (AADT) for State and state-aid roadways by conducting traffic counts every two to three years. AADTs do not account for seasonal or hourly fluctuations in traffic but are instrumental in identifying changes in traffic volumes and patterns over time. This information helps guide strategic decision-making concerning adjustments to Penobscot's overall road system.

Table J-2 presents the most recent and historical AADT data for Penobscot's major roadways. Apart from State Route 15 north of State Route 199 (North Penobscot Rd) and SR 199 north of SR 175 (New Rd), AADT has decreased on most state and state-aid roads in Penobscot. A modest increase in traffic has been observed on State Route 166 (Castine Rd) north of SR 175 (New Rd).

Table J-2: Annual Average Daily Traffic, 2012-2017

Location	DOT #	2012	2014	2017
Back Ridge Rd NE/O SR 15	03900-6	-	540	440
SR 15 NW/O SR 199 (North Penobscot Rd)	0015X-3	-	2,880	3,180

Location	DOT #	2012	2014	2017
SR 166A N/O Sr 166A	0166X-3	1,610	-	1,450
SR 166 (Castine Rd N/O 175 (New Rd)	0166X-3	1,850	1,760	1,860
SR 175 (New Rd NE/O SR 166 Castine Rd)	0175X-5	-	510	560
Southern Bay Rd N/O SR 177	0175X-5	-	1,900	1,900
Southern Bay Rd S/O SR 177	0175X-5	-	1,160	1,130
SR 199 (North Penobscot Rd) SW/O 175 (New Rd)	0199X-5	-	1,210	1,120
SR 199 S/O SR 175 (New Rd)	0199X-5	-	720	790
SR 199 (North Penobscot Rd) N/O SR 175 (Southern Bay Rd)	0199X-5	-	1,280	1,180

Source: MaineDOT

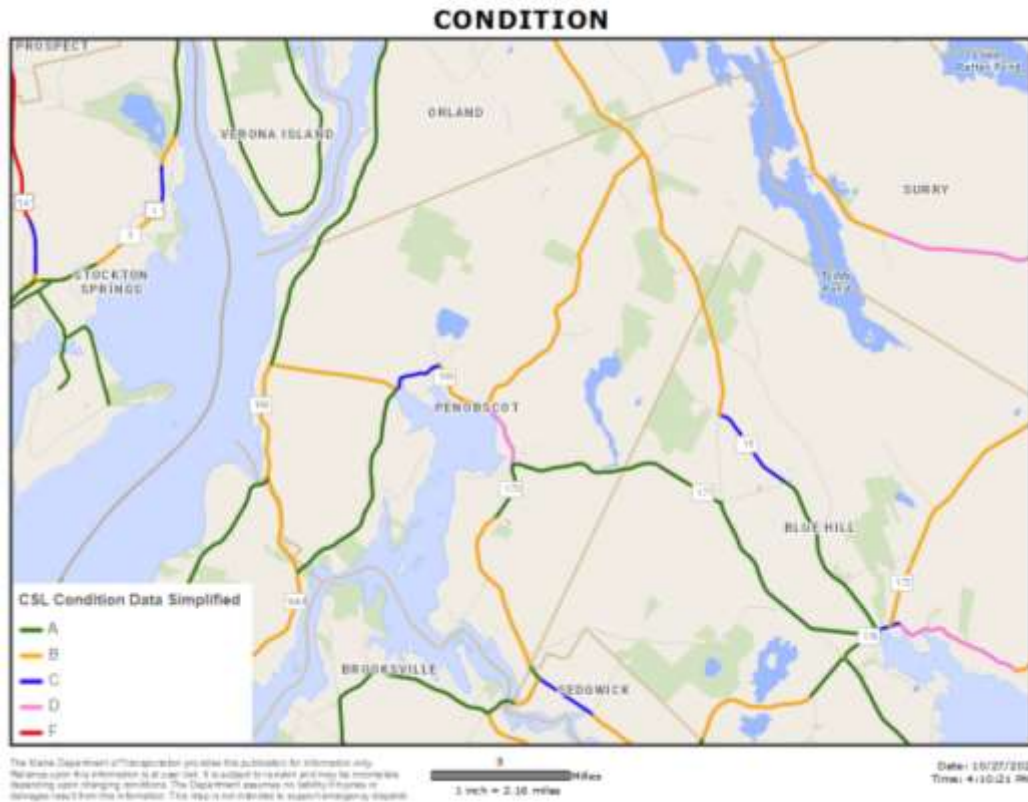
5.3. Condition and Maintenance

The MaineDOT assessment of road condition is based on ride quality, pavement condition, roadway strength, and bridge condition. Figure J-2 shows the Maine DOT assessment of road condition in Penobscot, in which approximately 11.5 miles of state-aid roads are rated as failing (“F”). Route 175 and Route 199 are rated F due to ride quality. Most town roads are in poor condition, except Dogtown Road, Kingdom Road, and Pierce’s Pond Road, and are expected to need repairs within the next ten years. Wardwell Point Road is a near-term priority.

The greatest damage to the roads is a result of inadequate road design, poor base material, and poor drainage. Combined with a harsh coastal climate that includes frequent freeze and thaw cycles with ocean salt spray and heavier weight truck traffic, road deterioration is an issue despite the low traffic volumes. In addition to these factors, climate change and sea level rise pose a significant risk to low-laying roads and culverts in Penobscot that skirt the coastline, affecting state-aid roads. This will pose an increasing burden on transportation costs and safety going into the future.

MaineDOT is responsible for all non-local roads. The department authorizes the permitting of driveways and entrances, curb cuts, summer and winter maintenance, traffic flow regulation, and safety measures such as traffic control devices (signs and signals), reconstruction, and changes to road dimensions.

Figure J-2: Road Condition



Source: MaineDOT

The Town is responsible for snow plowing, salting/sanding for the town, and mowing along state-aid roadways. This cost is covered by tax appropriations with state reimbursements to the town at 80% of the actual costs to the town for the state-aid roads. The total yearly payment to Penobscot from MaineDOT for 2023 was \$30,032, (compared to \$37,524 that should have been paid according to Maine DOT reimbursement rates). The formula does not always account correctly for actual road lengths, and because of a 1999 Maine State legislative decision, appropriations to towns were reduced. The reimbursement cannot fall below the 1999 levels.

MaineDOT prepares a Six-Year Plan, updated every two years, that links policy based on the twenty-year plan to projects based on the Biennial Transportation Improvement Plan (BTIP), or the “Work Plan.” Other state agencies and private organizations use the Work Plan to organize business investments and strategies. Projects in Penobscot that are listed in the MaineDOT Work Plan for 2022-2024 are shown in Table J-3.

Table J-3: MaineDOT Work Plan for 2022-2024

Work Plan Year	Asset(s)	Description	Estimated Funding
2023/24	Rt. 176	Ledge removal at various locations. Beginning at Mines Road in Sedgwick and extending north 3.51 miles.	\$67,000
2023/24	Rt. 166	Large culvert (#988887) located 0.16 of a mile south of Route 175.	\$599,000
2023/24	Rt. 199	Large culvert (#165998) located 0.09 of a mile southwest of New Road.	\$545,000

Source: MaineDOT

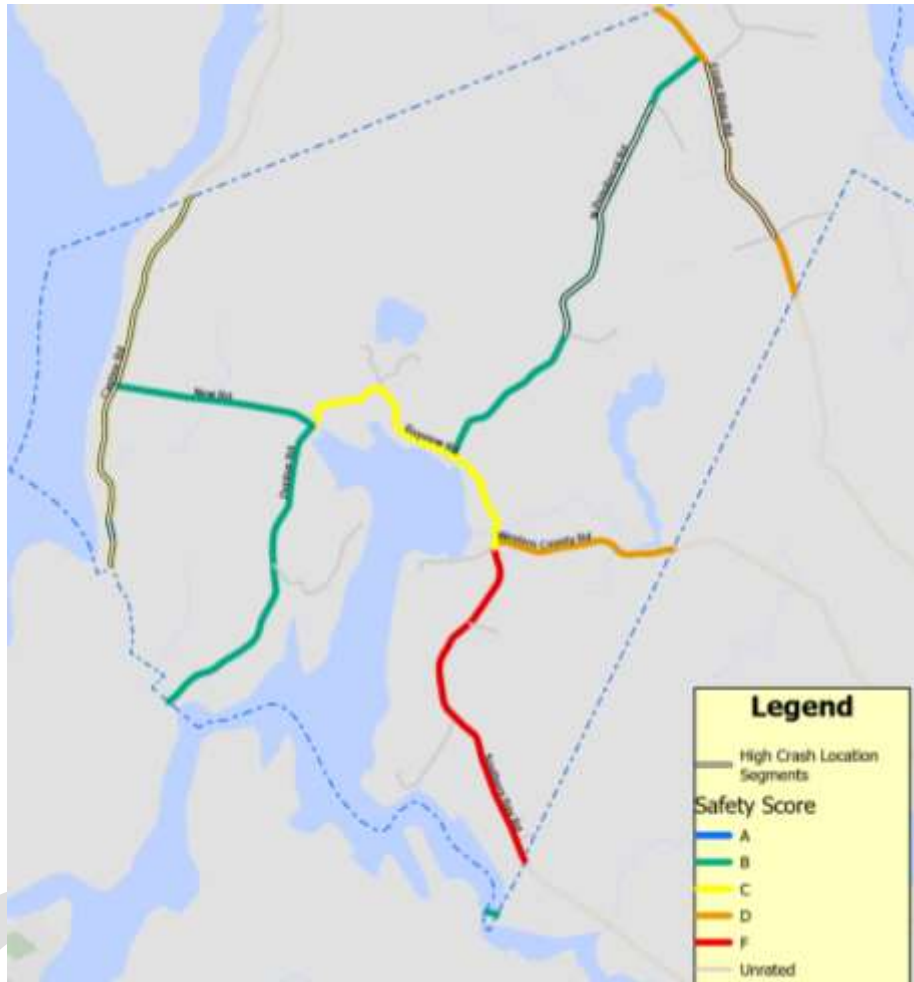
5.4. Safety

The evaluation of safety levels considers several factors, including crash history, paved roadway width, pavement rutting, and bridge reliability. For Penobscot, pavement width and crash history are the primary contributors to the low safety ratings observed on numerous rated roads.

One of the ways transportation engineers evaluate roadway safety is by looking at HCLs and HCL Segments. An HCL is one that has a minimum of eight accidents over a three-year period and a higher-than-average rate of accidents when compared with similar intersections across the state. In 2021, Penobscot had four HCLs (Figure J-3).

In addition to the HCLs based on MaineDOT’s analysis, other locations within the town pose concerns regarding safety. These locations are based on site observations and local knowledge and are presented in Table J-4. Frequent flooding and excessive speeds are among the chief concerns at these locations; possible resolutions include culvert enlargement or replacement and/or adding additional signage.

Figure J-3: Safety Ratings and High Crash Locations



Source: MaineDOT

Table J-4: Locally Identified Traffic Hazard Areas

Location	Safety Issue	Potential Solution
Bayview Rd at Mill Creek	Failing culvert, storm surge and sea level rise	Replace culvert
Intersection of Dunbar Rd, Bayview Rd, and New Rd	Poor visibility of oncoming traffic due to topography combined with failure to observe speed limits	Request enforcement presence
Dunbar Rd at New Rd	Frequent flooding in low area just southwest of intersection.	Replace and enlarge culvert
Bayview Rd at New Rd	Frequent flooding in low area just northeast of intersection	Replace and enlarge culvert
Bayview Rd at Berzinis Garage	Hard curve that is dangerous with excessive speeds	Signage (e.g., Slow Down: Sharp Curve Ahead)
Southern Bay Rd at Northern Bay Market	Unpredictable traffic turning in/out of market due to wide driveway and location of fuel pumps, aggravated by steep slope, curve in road, road damage, and excessive speeds	Signage (e.g., Caution: Turning Traffic); re-engineering of business entrance (e.g., curbs or barricades to organize traffic)

5.5. Access Management

The location and design of driveways and entrances onto public roads are regulated through access management to reduce accidents and congestion and prolong the operating time of a roadway, particularly an arterial highway. Though Penobscot does not contain any arterial roads, there are collector roads, and these are required to conform to the basic safety standards of Section 2.1, Chapter 299: Highway Driveway and Entrance Rules.

MaineDOT requires a permit for changes to signs or use, such as the construction of a new building or addition, and any changes to a driveway entrance prior to the commencement of any construction activity. This also includes alterations to driveways that lie within the state of state-aid road.

5.6. Bridges

There are three bridges in Penobscot, listed in Table J-5. The condition of Cove Bridge, which is the portion of the bridge that provides direct support for vehicular and pedestrian traffic, is considered “poor” due to advanced deterioration; its superstructure is also rated “poor” while its substructure is rated “fair” due to minor section loss. All components of the Davis Narrows Bridge are rated “good” with no problems noted.

Table J-5: Bridges

Bridge Name	DOT #	Ownership	Street Name	Year Built	Deck Rating	Stream/ River Crossing	AADT
Cove	3,297	State	Rte. 175	1978*	4 - Poor Condition (advanced deterioration)	Winslow Stream	1,793
Davis Narrows Bridge	3,628	State	Rte. 175	2005	8 - Good Condition (no problems noted)	Bagaduce River	1,139
Clement	3,020	State	Rte. 175	1991	N - Not Applicable	Clement Brook	1,474

Source: MaineDOT

5.7. Parking Facilities

Penobscot provides public parking lots at such places as the Penobscot Community School, the Fire Department, Town Hall, Pierce’s Pond boat landing, and the Town saltwater boat landing at Winslow Cove. Parking at the Town Hall is limited and usually inadequate during busy periods (e.g., Tuesday evenings and special events). Parking at Winslow Cove is also inadequate during times of high use (throughout the summer). Parking elsewhere is adequate except during special events such as Penobscot Day and the annual Town Meeting when motorists must park on the side of the road often within the travel lanes. These places are also some of the most significant traffic generators in the Town.

5.8. Pedestrian and Bicycle Infrastructure

Penobscot currently lacks dedicated pedestrian and bicycle infrastructure connecting key locations, such as schools, stores, parks, and waterfront access areas. Establishing these connections is challenging, as many of the roads where dedicated lanes would be ideal are narrow and lack shoulders. These conditions affect residents' ability to walk and cycle safely, particularly during winter months and nighttime hours. Nevertheless, many residents participate in walking and bicycling for recreation. Penobscot's roads are popular among bicycle tourists during seasonal months and are recommended routes on several public websites catering to bicycling enthusiasts.

The town developed initial plans for a sidewalk that would have run from the school to the intersection of the town office, to the Methodist Church and down Bayview Road a short distance. Nothing ever came of that plan.

5.9. Airport, Rail, and Bus Services

Penobscot is served by the Bangor International Airport, which has regularly scheduled passenger air service to various locations on the east coast. There also is limited passenger service from the Hancock County Airport in Trenton, which is more heavily used during the summer. There is a small municipal airport in Stonington used by private pilots, and a small private airfield in Blue Hill.

Penobscot has never had rail service. The nearest freight rail service is in Bucksport.

Penobscot does not have a daily bus service. Limited service is provided by the Washington/ Hancock Community Agency for income-eligible clients referred to it by the Maine Department of Human Services. Downeast Transportation provides service from Blue Hill to Bucksport, Ellsworth, and Bangor, but not to or from Penobscot. In addition, Concord Coach Lines and Greyhound Lines offer service to several mid-coast communities along Rte. 1.

5.10. Climate Change

Climate change is expected to have impacts globally and throughout the United States, some of which could pose serious threats to roads in coastal areas. The impacts from climate change may vary from location to location, but generally predictions include an increase in the frequency and intensity of some extreme weather events. Heat waves will likely be more severe, sea level rise could amplify storm surges in coastal areas, and precipitation will likely be more intense. These changes could increase the risk of delays, disruptions, damage, and failure across transportation systems.

In Penobscot, state-aid routes 175, 199, and 166 are prone to flooding when heavy rainfall causes streams to overtop their culverts which can require road closures. Traffic, including emergency vehicles, must then be rerouted. Sea level rise will likely affect Routes 175 and 199 in the next half century. There is little town infrastructure that will be affected by sea level rise. Heat, flooding, and erosion from heavy storms will impact the entire town.

The Town participates in the Blue Hill Peninsula Tomorrow group that includes municipal officials from all nine peninsula towns. Penobscot established a Community Resilience Committee in 2022 to identify, plan for, and increase resiliency to the effects of climate change that will impact the residents of Penobscot.

6. Analysis

6.1. What are the transportation system concerns in the community and region? What, if any, plans exist to address these concerns?

Much of the concern around the transportation system in Penobscot stems from the perceived increase in traffic on the state roads in town and the condition of state-aid roads in town. Most of the issues occur on state-aid roads where the town has no authority to make changes/improvements. Residents have expressed concern about increased traffic and noise, as well as heavy trucks utilizing Routes 199, 175, and 166. It appears that more motorists are using these roads to connect to and travel from the main connector road through town, Route 15. Residents have also cited excessive speed on these roads as a problem that creates dangerous conditions for pedestrians, bicyclists, and motorists entering those roads (e.g., from driveways). The town can request that the MaineDOT reduce the speed limit in areas of town where speed is an issue, but the town has no authority to do that or to install speed limit signs.

The town currently contracts with a private company for winter road plowing which is coordinated with the Select Board and the road commissioner. There are annual calls for improved winter road maintenance but also concern over these costs.

One option for the town is to seek grant funding to develop and implement transportation projects outside of the normal MaineDOT work plan.

6.2. Are conflicts caused by multiple road uses, such as a major state or U.S. route that passes through the community or its downtown and serves as a local service road as well?

As is typical in the region, most of the town's main roads are minor state highways that connect the town to neighboring communities. As noted above, high traffic volumes and speeds do present conflicts for local users, especially during commuting hours. Route 15 is a major state highway connecting most of the Blue Hill Peninsula and Deer Isle/Stonington to Route 1. The corridor through Penobscot has several steep hills and blind curves and is a "High Crash Location Segment." This creates risky conditions for local residents and businesses.

6.3. To what extent do sidewalks connect residential areas with schools, neighborhood shopping areas, and other daily destinations?

There are no sidewalks in Penobscot.

6.4. How are walking and bicycling integrated into the community's transportation network (including access to schools, parks, and other community destinations)?

Walking and bicycling are not integrated into the community's transportation network. As noted above, walking, and bicycling on the state-aid roads in Penobscot (and some of the town roads) is dangerous. The roads are narrow with little or no area for shoulders. The general consensus is that it would require a great deal of planning and money to acquire the rights-of-way necessary to widen roads to accommodate walking and bicycle lanes. However, residents in the public opinion survey urged the town to find ways to provide safe paths for walking on the town's roads, so it may be worth pursuing the issue with the Maine Department of Transportation and other appropriate agencies and organizations.

6.5. How do state and regional transportation plans relate to your community?

The Maine Department of Transportation regularly includes the town of Penobscot in its multi-year Work Plans. See Table J-3 in the Maintenance Section.

6.6. What is the community's current and approximate future budget for road maintenance and improvement?

The budget for current (2023) road maintenance and improvement is as follows:

- Snow removal, salt, and sand: \$190,000
- Capital improvements (e.g., paving): \$70,000
- General maintenance: \$25,000
- Wallamatogus Mtn parking lot: \$8,000 (single time expense)

6.7. Are there parking issues in the community? If so, what are they?

There are issues with parking in the town. Meetings at the town hall force motorists to park along the side of the road where there is barely any shoulder. The school has adequate parking for its operations and can accommodate moderate gatherings. Larger events again send motorists to the side of the road where they can impede traffic. Most businesses in town have adequate parking to accommodate their operations.

6.8. If there are parking standards, do they discourage development in village or downtown areas?

Town parking standards are set out in the town's subdivision, shoreland and land use ordinance. They do not discourage development in the village area.

6.9. Do available transit services meet the current and foreseeable needs of community residents? If transit services are not adequate, how will the community address the needs?

There are no public transit services offered in the town. The Washington-Hancock Community Agency provides some services on an individual basis. The Downeast Transportation bus service has shown a willingness to work with communities to provide bus services to communities; some residents called for improved public transportation services in the public opinion survey.

6.10. If the community hosts a transportation terminal, such as an airport, passenger rail station, or ferry terminal, how does it connect to other transportation modes (e.g., automobile, pedestrian, bicycle, transit)?

Not applicable.

6.11. If the community hosts or abuts any public airports, what coordination has been undertaken to ensure that required airspace is protected now and in the future? How does the community coordinate with the owner(s) of private airports?

Not applicable.

6.12. If you are a coastal community are land-side or water-side transportation facilities needed? How will the community address these needs?

No land-side or water-side transportation facilities are needed, although as discussed in Chapters E and I, the Town has no public access to the Penobscot River. The former Devereaux Marine site on the river used to provide private access to the river but that business has not operated for several years. There is also a private marina located on the Bagaduce River.

6.13. Does the community have local access management or traffic permitting measures in place?

The Town's shoreland, subdivision and land use ordinances provide specific criteria for the creation of roads. Their criteria support the use of land in ways outlined in each of those ordinances.

6.14. Do the local design standards support the community's desired land use pattern?

The Town's ordinances outlining road creation requirements have been adopted by a vote at the annual town meeting and generally reflect the land use preferences of town residents.

6.15. Do the local road design standards support bicycle and pedestrian transportation?

The Town's local road design standards do not support bicycle or pedestrian transportation.

6.16. Do planned or recently built subdivision roads (residential or commercial) simply dead-end or do they allow for expansion to adjacent land and encourage the creation of a network of local streets? Where dead-ends are unavoidable, are mechanisms in place to encourage shorter dead-ends resulting in compact and efficient subdivision designs?

There are few subdivisions in Penobscot and those that have been built are generally rural projects which have few provisions for a network of local streets. The roads in the subdivision are usually dead-end with no provisions for connections to future subdivision on adjacent properties. These patterns are consistent with the Town's rural character and, by limiting the potential for interconnection and new road construction, help to protect open space and large habitat blocks in the areas between main roads (see Section C, Natural Resources).

7. Goals, Policies, and Strategies

Goal: To plan for, finance, and develop an efficient and safe transportation system to complement State roads and state-aid roads in the Town and accommodate the level of anticipated population change and economic development.

Policy 1: Prioritize community and regional needs associated with safe, efficient, and optimal use of transportation systems.

Strategies:

- a. Develop or continue to update a prioritized improvement, maintenance, and repair plan for the community's transportation network, in coordination with the MaineDOT and other appropriate agencies to address concerns raised by residents, such as: pedestrian and bicyclist safety, walking paths, aging culverts, speeding, poor road conditions and the effects of climate change.

Policy 2: Safely and efficiently preserve or improve the transportation system.

Strategies:

- a. Initiate or actively participate in regional and state transportation efforts, including working with neighboring towns and the Hancock County Planning Commission.
- b. Promote public health, protect natural and cultural resources, and enhance livability by managing land use in ways that maximize the efficiency of the transportation system and minimize increases in vehicle miles traveled.
- c. Maintain, enact, or amend local ordinances as appropriate to address or avoid conflicts with state Sensible Transportation Policy Act, state access management and traffic rules for large developments.
- d. Review existing ordinances and Land Use Regulations to ensure they address road safety and that they complement existing state regulations.
 - a. To meet the diverse transportation needs of residents (including children, the elderly and disabled) and through travelers by providing a safe, efficient, and adequate transportation network for all types of users (motor vehicles, pedestrians, bicyclists).
- e. See strategy 1.a. above.

Policy 3: To promote fiscal prudence by maximizing the efficiency of the state or state-aid highway network.

Strategies:

- a. Working in coordination with MaineDOT and other appropriate agencies, seek grant funding to develop and implement local transportation projects outside of the normal department work plan.

- b. Seek grant funding to develop and implement local transportation projects outside of MaineDOT's work plan.

DRAFT

Chapter K: Public Facilities & Services

1. Purpose

The adequacy of a community's public facilities is important for the quality of life of its residents as well as for their safety and economic prosperity. This chapter provides an understanding and analysis of current conditions for Castine and potential future needs and issues. Specifically, the chapter aims to:

- a. Identify and describe Castine's public facilities and services; and
- b. Assess the adequacy of these services to handle current and projected demands.

2. Key Findings & Issues

Public facilities should be able to accommodate modest growth in the Town's population. That said, improvements are needed at the transfer station to improve functionality and the Town Hall needs foundation work. The single public cemetery is nearly at capacity, although the Town has land that could be used to develop a new one. The Town Office accommodates basic tasks, but voting and public meetings are held off site at the fire station and school, which can cause conflicts. The lack of office space could become a problem if additional services are needed in the future. Local planning for emergency response, such as the need for public shelters during extreme weather events, could be improved.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan had found that, as a rural community, Penobscot provided its residents with minimal Town services. Overall, these services appeared adequate and the major public service issue that faced the Town was that continued increases in property taxes meant that taxpayers were hard pressed to pay for then-current services, as well as funding new ones. One major public service deficiency identified was the poor condition of the old fire house. Health care services, while not a Town government responsibility, were identified as another deficiency.

4. 2022 Public Opinion Survey Results

Twenty-six years later, the majority of respondents (64.7%) to the Town's Public Opinion Survey found the Town government's response to their needs to be very and somewhat responsive. For example, Town enforcement of State and Town laws and ordinances, Town-

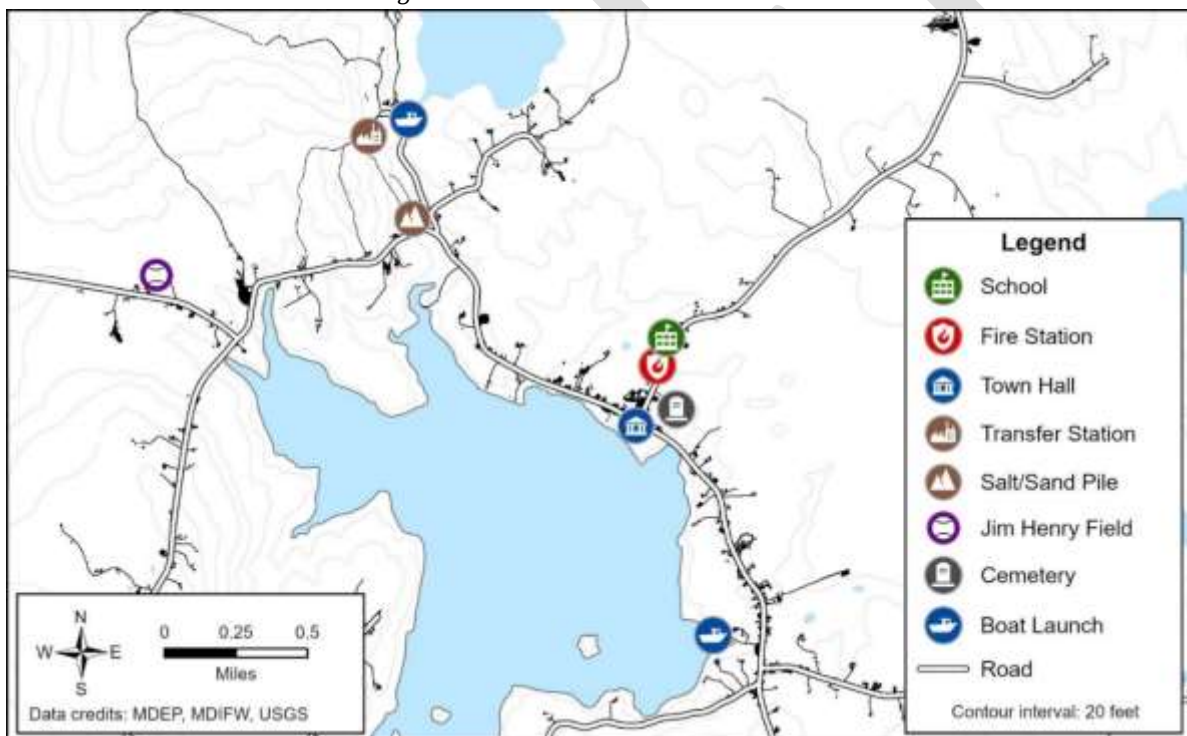
maintained recreational facilities, and the Town’s transfer station ranged in the very good, good, and adequate categories. Shared services with other communities, such as ambulance responsiveness and services, public high school, and solid waste disposal availability, also ranked high. A majority of respondents found that recycling, traffic speed control, elderly care and senior citizens services needed improvement. Although there are no health care facilities in Town, facilities in the region (from Bangor to Belfast to Ellsworth) can handle most health care needs.

5. Conditions and Trends

5.1. Location of Facilities and Service Areas

The locations of facilities and services are shown in Figure K-1.

Figure K-1: Public Facilities and Services



5.2. General Physical Condition of Facilities and Equipment

Town Hall – The building is in good physical condition. Built as a community store in the 1800’s, its layout and functionality is marginal for modern office utilization. The septic tank is likely undersized for the building and its uses. Computer equipment is aging and limited. The basement has a ground water infiltration problem during large rain events making the

long-term storage of materials impractical. Nor are there other storage facilities (e.g., a vault) for storing vital records onsite. Parking is insufficient. A new boiler was installed in September 2019. Additional support columns were added in 2021 to better support the main floor public area. Front entrance steps now have a center handrail to improve accessibility and safety measures.

Penobscot Community School (pre-K thru 8th grade) – The Penobscot Community School was constructed in 3 parts: the original portion of the building was constructed in 1953 and occupies approximately 5,712 square feet; Addition 1 (approx. 2,520 SF) was built in 1962 and Addition 2 (10,635 SF) was built in 1984.

Per the International Building Code, this facility is classified as an Educational Facility, Use Group E. The facility construction is Type 5B (combustible/unprotected). The building has no sprinkler protection system.¹¹

Penobscot Fire Station – The structure (built in 2002), while sound and well suited for the equipment and volunteer staff, will need to have the roof replaced and the building will require upkeep. The station is also used for Town elections, since space at the Town Office is inadequate.

The Fire Station has 4 vehicles:

1. Forestry, brush truck (Manufacturer: Ford F350 - Year: 1989)
2. Rescue #5 (Manufacturer: International - Year: 2001)
3. Engine #1, the main tanker/Class A pumper (Manufacturer: Ford L8000 - Year 1990)
4. Engine #4, tanker/Class A pumper (Manufacturer: Freightliner - Year 2016)

Engine #1 and the Forestry truck are slated for replacement in the next 5 – 10 years.

Town boat ramp – Improved concrete launch ramp (2009), limited parking area.

Fish weirs & ponds with boat ramp (concrete) – Pierce's Pond – built 2017/18. Excellent condition. There is one porta-potty on site.

¹¹ James W. Sewall, Old Town, Maine – Engineer Report – Priority cost estimates

Transfer station – Operationally in adequate/good condition. The transfer station was recently inspected by the Department of Environmental Protection and was found to be in compliance with no issues.

The demolition debris disposal fee is \$115/ton. Because the Town receives money for the metal pile, this usually offsets the cost of the demolition debris disposal fee. The fees associated with the trucking of the MSW to Juniper Ridge is \$400 per trip. Tipping fees have not changed.

Appliances that contain refrigerants are emptied by licensed personnel and the units are then put on the metal recycling pile. Glass is stored in a specific location and used as base material for Town construction projects. Items that are in a good and serviceable condition (excluding clothing) are temporarily stored on site and are free for the taking.

Town Cemetery – The Bay Cemetery is the only municipal cemetery in Penobscot. It is situated behind the Post Office off N. Penobscot Road (Route 199), 500 ft north of the intersection of N. Penobscot Road and Southern Bay Road (Route 175). The cemetery is almost at capacity.

Jim Henry baseball field – The field serves local baseball/softball teams. Located in West Penobscot off New Road, the field is well maintained by volunteers. The Town pays for the field mowing and field materials via an annual Town vote.

Streetlights – The Town pays the electric supply and maintenance costs for approximately 25 streetlights throughout the Town, including one at the sand pit. There are private lights on telephone poles at the Baptist Church, Northern Bay Market, at the property of Mr. Bill Hutchins, and at Eaton's Boat Storage. All lamps are modern technology. Central Maine Power hosts the lights on their poles and provides power supply & service.

Salt/sand facility – The town maintains a salt/sand facility for winter road clearing, which consists of storage and staging areas and several structures to house materials and equipment.

5.3. Power & Communications, Including Utility System Capacity, Anticipated Demand, and Ownership

Central Maine Power and Versant Power own/operate electric utilities in Penobscot. In 2016, Central Maine Power upgraded their system to provide three-phase power along the

corridor from the Castine road across the New Road to Bayview Road and then south to the Penobscot/Sedgwick line.

Consolidated Communications owns and operates the telephone utility. Consolidated Communications, through its subsidiary Fidium Fiber, provides broadband Internet services. High-speed internet is currently being built out to every home in Penobscot.

Regionally, there has been considerable increase in residential and commercial solar projects, which is quickly exceeding the capacity of the local electrical grid. At this time Central Maine Power is no longer approving residential solar connections in some areas of Penobscot.

5.4. Estimated Costs of Needed Capital Improvements to Public Facilities

Anticipated capital improvements and their estimated costs are listed in Table K-1.

Table K-1: Estimated Costs of Needed Capital Improvements to Public Facilities

Need	Payment Method	Estimated Cost
Fire Station roof	Taxation	\$35,000
Fire engine	Reserve/Taxation	\$350,000
Fire Station lights	Taxation	\$10,000
Town Hall foundation	Building Reserve (\$18,000)	\$50,000
Town Hall computers	Taxation	\$10,000
Town Hall vault	Taxation	\$10,000
School bus	Reserve (\$35,000)	\$100,000
School roof	Taxation	\$68,000 ^a
School ventilation/insulation	Taxation	\$60,000 ^a
Trash compactor	Loan/Bond	\$70,000
Two 40-yard trash containers	Taxation	\$25,000
Salt/sand building	American Rescue Plan/bond/grants	\$800,000

a. Cost estimate based on 2016 Facility Assessment of the Penobscot Community School by the James Sewall Company.

5.5. Sewerage and/or Water Supply

The Town does not provide a municipal water supply or sewage system. The State Drinking Water Program lists two public water systems in Town: The Penobscot Community School system, which has a 162-foot drilled well, and the South Penobscot Water Association (SPWA), which has a 300-foot drilled well. The state classifies them differently: The school system is considered a non-community, non-transient system, while the association’s system is listed as a community system. The South Penobscot Water Association currently

has 15 hook-ups and passed its last full inspection in August 2019. Some of the water lines from the SPWA well cross underneath Route 175.

The Town also maintains wells at the Fire Station and at the Town Hall. The Town Hall shares a well with map 23 lot 38. There does not appear to be any maintenance agreement. There has been no testing of this well according to the Select Board. Recent construction at the adjacent site may have affected the water flow to the Town Office. See Chapter B, Water Resources, for information about the SPWA.

5.6. Septage

Individual homeowners and businesses are responsible for hiring septic pumpers/haulers to pump their septic tanks. The Town receives an invoice for each private pump-out from local pumping/hauling contractors and subsequently pays the septage tipping fees. The current price for septage tipping is \$100 per 1000-gallon tank. Local pumping companies haul to licensed disposal sites.

5.7. Solid Waste and Recycling

The Town operates a municipal solid waste (MSW) transfer station. The station consists of two compactor units with capacities of 20 and 40 cubic yards, respectively, and separate collection areas for refrigerated appliances, glass, construction debris, and metal. The facility is open two days a week (Tuesday and Saturday), 8 am to 4 pm. One employee assists the public with offloading vehicles and operates the compactor unit. During high use periods, a second employee is added to the operation.

Glass is crushed and buried on site. Refrigerants are removed from appliances by a licensed contractor. Typically, once a year the Town pays to have the construction debris, steel and white goods hauled off for disposal and/or recycling.

Municipal solid waste is hauled by a contracted carrier to the Penobscot Energy Recovery Company (PERC) waste-to-energy facility in Orrington. The cost of MSW disposal is the combined costs of tipping (per-ton cost delivered to PERC), currently \$85.46/ton; plus hauling, currently \$300 per/trip. The PERC facility recently closed and is being sold at auction. The facility's future is unknown as well as the future disposal options for eastern Maine municipalities. Currently all MSW is being landfilled at Juniper Ridge landfill in Alton Maine.

The MSW tonnage data is only available from 2017 to 2019 (Table K-2). The annual average for tipping tonnage is 520 tons for years 2017 through 2019.

Table K-2: Monthly MSW Tonnage, 2017-2019

Month	2017	2018	2019
January	39.07	42.88	30.32
February	24.33	34.66	32.12
March	33.22	34.84	40.98
April	57.38	36.27	44.00
May	41.91	48.44	40.94
June	55.73	42.11	42.63
July	44.24	56.64	71.16
August	45.29	58.60	50.62
September	46.11	35.12	41.58
October	46.32	47.83	-
November	40.16	53.97	-
December	44.91	33.17	-
Year Total	518.67	524.53	394.35
Monthly Average	43.22	43.71	73.82

5.8. Stormwater Management

No combined sewer overflows exist in Penobscot. While the Cove and Davis Narrows bridges do not have issues at this time, MaineDOT released its three-year work plan on January 25, 2023, which includes a large culvert that is set to be replaced on Dunbar Rd 0.09 miles southwest of New Road.

5.9. Emergency Response System

Centrally located, the Penobscot Fire & Rescue Department allows 10–15-minute response times from the station to anywhere in Town. The availability of volunteer staff can affect response times. Mutual Aid agreements with adjacent town fire departments help reduce response times and help ensure adequate response to incidents.

Penobscot does not have a First Responder program and volunteer firefighters are only trained in basic first aid and CPR. Emergency medical services are provided by the Peninsula Ambulance Corps, based in Blue Hill, with response times of 15 to 30 minutes. Peninsula Ambulance Corps has mutual aid agreements with Bucksport and Northern Light Medical Transport in Ellsworth. Castine has a First Responder program that provides mutual aid to Penobscot when ambulance services are delayed.

Penobscot provides no direct police protection of its own. Police services are primarily provided through the Hancock County Sheriff's Department and the Maine State Police. Maine Warden Service and Marine Patrol also respond to law enforcement calls in Town. Response times for police calls can take upwards of 30 minutes.

5.10. Education

The Penobscot Community School is located in the Town of Penobscot and is part of School Union 93, which is the administrative organization for the public schools in the towns of Castine, Brooksville, Penobscot, Blue Hill, and Surry.

In the school union structure, each town has its own elected school board, budget, school, and staff, while sharing a superintendent and central office staff.

Each school board has monthly public meetings with the School Union Superintendent. The meetings are held at individual schools and the agendas for upcoming meetings can be found on the School Union 93 website. The five boards meet several times a year as a joint board to decide on union-wide matters.

All the public schools in School Union 93 are preK-8 only. There is no public high school in Union 93, so each town "tuitions" students to state-approved high schools in the area or statewide, mainly the semi-private George Stevens Academy (GSA) in Blue Hill and Bucksport High School. The 2022 tuition cost per student to GSA was \$16,712.

Penobscot Community School accommodates grades Pre-K through 8 and, as of January 2023, 68 students are enrolled. This enrollment number has stayed steady over the last 20 years, with some small rises and falls.

One aspect of education in the Town of Penobscot that should be noted is homeschooling. Usually, there has been an average of 3-5 students who have been homeschooled. However, during the Covid pandemic, the numbers rose to between nine and 10 students being homeschooled. According to Union 93, there were 3 students homeschooled in 2018 and 2019. In 2022 there were five students homeschooled.

Additionally, the Superintendents' Agreement allows students from other communities to attend the Penobscot Community School if they meet certain criteria, so that on a given year there might be more students from outside the Town attending the school, and that means that the Town receives a subsidy from the state.

A historical synopsis of the Penobscot Community School shows a current increase in the student population from a downward trend during the Covid pandemic.

It is very difficult to anticipate enrollment for the ten years after the adoption of the plan. The Office of the State Economist of the Maine Department of Administrative and Financial, in its most recent Population Outlook covering the period 2020-2040, projects a 1.1% increase in population in Hancock County between 2020 and 2040. However, for the 0-19 age cohort, the population, cumulatively, is projected to decrease by 12.8%. Population projections and school enrollment is further discussed in Chapter F, Population and Demographics.

The Penobscot School Department has an Operating Expense of \$1,003,594.09, with an enrollment of 68 students and an annual tuition rate of \$16,726.57 according to the State of Maine's Department of Education 2022-23 elementary tuition rates chart, which captures the 2022-2023 school year data. Per-student tuition rates paid in 2022 were \$16,712 to George Stevens Academy and \$10,451 to Bucksport, and \$12,169 to Ellsworth.

5.11. Health Care

While Penobscot does not have a Town hospital, there are several locations nearby that offer medical services.

- Castine - Northern Light Primary Care - formerly known as Castine Community Health Services, approx. 9 miles.
- Northern Light Blue Hill Hospital - formerly known as Blue Hill Memorial Hospital, approx. 8 miles.
- Bucksport Regional Health Center - located in Bucksport, approx. 12 miles.
- Northern Light Rehabilitation - located in Bucksport, approx. 12 miles.
- Northern Light Maine Coast Hospital - formerly known as Maine Coast Memorial Hospital, located in Ellsworth, approx. 23 miles.
- Northern Light Eastern Maine Medical Center - located in Bangor, approx. 34 miles.
- St. Joseph Hospital - located in Bangor, approx. 34 miles.

The Town annually allocates funds to Peninsula Ambulance Corps (PAC). PAC has a fleet of three ambulances and five full-time and 24 part-time staff (paramedics and EMTs). PAC responded to 86 calls in Penobscot in 2022, 5.6% of its total call volume.

The Town also allocates funds annually to or partners with the following organizations providing social services:

- Northern Light Home Care and Hospice
- Northern Light Home Care and Hospice
- Eastern Area Agency on Aging
- Healthy Peninsula
- Blue Hill Society for Aid to Children
- Downeast Community Partners
- Women Infants and Children Program
- Hospice Volunteers of Hancock County
- LifeFlight Foundation.

The Town also has a General Assistance Fund that residents in need can apply for to help cover living expenses.

5.12. Municipal Government Facilities and Services

The Town legislative body consists of the voting age residents who vote at the annual Town Meeting in March of any given year. Special Town votes occur when and as necessary. The Town administration is conducted via a three-member Select Board, whose members are elected at Town meeting, and hold office for a three-year term. The Town Clerk/Registrar, Road Commissioner, Town Meeting Moderator, Treasurer, Tax Collector and the three-member school board are also elected positions. The nine-member Finance Committee is composed of six elected members and three appointed members.

The following committees or positions are appointed by the Select Board:

There is a seven-member Planning Board and a separate Board of Appeals that have seven members each, where five are voting members with two members that serve as alternates;

The Deputy Tax Collector, Auditor, Fire Chief and Assistant Chief, Animal Control Officer, Code Enforcement Officer, and Licensed Plumbing Inspector;

And the ten-member Comprehensive Plan Committee, the five-member Broadband Committee, the four-member Alewife Committee, the five-member Shellfish Conservation Committee, the Shellfish Warden, and the five-member Community Resilience Committee.

The Town has enforcement responsibility and authority over building codes and shellfish harvesting via the Code Enforcement Officer, Plumbing Inspector, and Shellfish Warden. The sole Public Works operation in Penobscot is that of road maintenance. Town roads are maintained, graded, and/or resurfaced under the supervision of the Road Commissioner. Routine work is performed by a local contractor, whose time and equipment are paid for on an hourly basis. The Town provides any necessary materials. Specialty work is publicly bid and contracted to a qualified low bidder. Winter road plowing of both Town and state roads within Town is performed by plowing contract. Contracts are awarded for a three-year term. The Town stockpiles the road salt and sand and makes it available to the contractor.

5.13. Street Tree Program

Not applicable. No Street Tree Program exists in Penobscot.

6. Analysis

6.1. Are municipal services adequate to meeting changes in population and demographics?

If the population grows, this could increase the demand for housing. The Penobscot School, which currently has 68 children, could easily accommodate an increase in enrollment, as the school was built to accommodate up to 160 students. A significant increase in the Town's population could necessitate an expansion of our transfer station. It might also result in increased requests for water and sewer services and lead to other demands as well, e.g., building sidewalks near the Town center, establishing a library, and providing transportation to neighboring towns. However, if there is a population decline, there would be little change in the demand for housing and municipal and school services.

6.2. Has the community partnered with neighboring communities to share services, reduce costs and/or improve services?

Penobscot receives regional emergency dispatch and 911 call services through Hancock County. The Fire Department participates in a mutual aid agreement with neighboring communities for fire and emergency response coverage. The Penobscot Community School has also joined with Brooksville to fill out sports teams. Penobscot, Brooksville, and Sedgwick have a combined alewife committee to manage this species, its habitat, and commercial fishery.

6.3. If the community has a public sewer system, what issues or concerns are there currently and/or anticipated in the future? Is the sanitary district extension policy consistent with the Future Land Use Plan as required by (38 M.R.S.A. §1163), or will it be?

Not Applicable. No public sewer system exists in Penobscot.

6.4. If the community has a public water system are any public water supply expansions anticipated? If so, have suitable sources been identified and protected? Is the water district extension policy consistent with the Future Land Use Plan?

No expansions of the public water supplies are anticipated nor warranted.

6.5. Does the lack of public water or sewer facilities prevent the community from accommodating current projected growth?

Lack of public water and sewer facilities should not prevent projected growth attributed to single families and small businesses. Large-scale development could be significantly impacted by the lack of such services; however, it is not anticipated.

6.6. Are existing stormwater management facilities adequately maintained? What improvements are needed? How might future development affect the existing system?

Not Applicable. No stormwater management facilities exist in Penobscot.

6.7. How do residents dispose of septic waste? Are there issues or concerns regarding septic waste?

Individual homeowners and businesses are responsible for hiring septic pumpers/haulers to pump their septic tanks. The Town receives an invoice for each private pump-out from local pumping/hauling contractors and subsequently pays the septage tipping fees. The current price for tipping is \$100 per 1000-gallon tank. Local pumping companies haul to licensed disposal sites.

Town ordinances include regulations on siting and installation of new septic systems, but the Town has no program to monitor existing systems. Please see Section 4.5, Potential Threats to Water Quality/Quantity of the Water Resources Section for additional information.

6.8. Is school construction or expansion anticipated during the planning period? Are there opportunities to promote new residential development around the existing school?

School construction and expansion are not anticipated during the planning period. The area around the school currently has low development; however, this area contains a large amount of wetland or is otherwise reserved as mitigation for previous wetland impacts, restricting the amount of residential development that is possible. There are opportunities to promote Penobscot's school and educational opportunities to attract new residents, which could result in residential development elsewhere in Town.

6.9. Is the community's emergency response system adequate? Are improvements needed?

The only emergency service provided locally in Penobscot is fire protection through the volunteer-based Penobscot Fire Department, and the response time has been adequate. A shortage of volunteers is a state-wide problem, resulting in increased reliance on mutual aid from other towns. Fire protection is currently satisfactory but could easily become inadequate if the Town continues to grow or if the number of volunteers declines, especially volunteers willing to conduct interior firefighting operations, such as search and rescue.

Emergency medical and police response is provided by organizations in nearby towns or at the county or state level, which can result in delayed responses of 30 minutes or more. Ambulance services are also facing a volunteer staffing shortage and are relying more on mutual aid, resulting in longer response times. Emergency medical services are currently adequate but could easily become inadequate with continued regional growth and/or staffing issues. Police protection is adequate. The Methodist Church is able to serve meals or be a warming shelter on a daily basis but cannot handle overnight capacity. The Penobscot Community School has the capacity to serve as an emergency shelter, but planning is not complete.

6.10. Is the solid waste management system meeting current needs? Is the community reducing reliance on disposal and increasing recycling opportunities? Are improvements needed to meet future needs?

The current management system is working well given the Town's capacity to support an annual operational budget. The existing compaction and storage capacities easily handle the monthly average of 44 tons. Using a duplex loading approach between two separate

compactor units allows a potential loading growth of 50%. Obviously, growth of this magnitude would drive operational costs up, but with annual Town vote/approval the operational budget could accommodate the growth.

Recycling efforts on the Town level ceased in 2017. The Selectboard decided to redirect paper and plastic waste into the municipal solid waste (MSW) stream. This decision was driven by the recyclable waste tipping-fee cost increase from \$60/ton in November 2017 to \$160/ton in February 2018.

In the event recycling tipping-fees return to more fiscally manageable levels, or the community reverses the Selectboard's decision by public vote, the Town would then return to a recycling effort. Currently, the tipping fee for recyclable material is \$295 per ton, and the trucking fee is \$150. The community generally finds MSW being converted into electric energy at the PERC facility a preferred alternative to landfilling if PERC reopens for business.

6.11. Are improvements needed in the telecommunications and energy infrastructure?

Existing energy systems serve the Town adequately and service delivery itself meets current needs. High-speed internet is now available throughout Penobscot with levels of service comparable to urban areas. Cellular coverage is somewhat limited in town, with only a few carriers serving the region, which can be problematic for visitors using other carriers. Signal strength is weak in some areas. However, the Town has little recourse for improving these services, nor are some potential solutions (e.g., new towers) desirable to residents.

6.12. Are local and regional health care facilities, public health, and social service programs adequate to meet community needs?

There are no health care facilities in Town. The closest hospital providing 24-hour emergency care is Northern Light Blue Hill Hospital, about eight miles from the center of Penobscot. Facilities in the region (from Bangor to Belfast to Ellsworth) can handle most health care needs, but long wait times for appointments and low access to specialized care are problems throughout rural Maine. While regional organizations/programs such as the Eastern Agency on Aging, At Home, and Healthy Peninsula serve Penobscot's elderly residents, in-home care and programs for the elderly are inadequate due to insufficient

medical professionals and volunteers to meet demand. Crisis centers are generally limited to Bangor, an hour away.

6.13. Will other public facilities such as Town offices and cemeteries accommodate projected growth?

The single public cemetery in Penobscot is nearly at capacity. The Town acquired land from MCHT near Wight's Pond, a portion of which could be used to develop a new cemetery. The Town Office accommodates basic office tasks, but voting and public forums are held offsite (at the fire station and school), which can cause conflicts and present challenges to organizations wishing to hold public meetings. The lack of office space could become restrictive if additional services are needed. The building does not meet current needs for storing records. The parcel acquired near Wight's Pond could be used to construct a new town office. The fire station and school will accommodate projected growth.

6.14. To what extent are investments in facilities improvement directed to 'Growth Areas'?

Growth areas have not been previously defined in Penobscot.

6.15. Does the community have a street tree program?

Penobscot does not currently have a street tree program.

7. Goals, Policies, and Strategies

Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated changes in population and economic development.

Policy 1: Efficiently meet identified public facility and service needs.

Strategies:

- a. Make necessary capital improvements to maintain or upgrade public services to accommodate the community's anticipated growth and changing demographics.
- b. Explore options for regional delivery of local services.
- c. Ask the Penobscot Fire Department to prepare/amend local emergency plans to deal with emerging environmental risks (e.g., heat waves, droughts, and flooding), including improved communication systems as needed.
- d. Consider the steps necessary to create an emergency shelter at the school.

Chapter L: Fiscal Capacity

1. Purpose

This section presents information on Penobscot's ability to pay for the services it provides its residents and businesses. It also looks ahead to how the Town will pay for its long-term infrastructure needs. Specifically, this chapter will:

- a. Examine trends in such fiscal areas as valuation, taxes, expenditures, and capital projects funding.
- b. Evaluate the Town's ability to borrow to pay for capital investments.
- c. Identify anticipated capital investment needs and anticipated funding mechanisms.

2. Key Findings & Issues

Town revenues and assets have been more or less stable since 2018, although school costs have increased over this period. Penobscot has very low fiscal liabilities (i.e., debt) and has very high capacity for future borrowing but does not have a history of borrowing. The mil rate has fluctuated between 9.70 and 11.4 since 2018.

3. 1997 Comprehensive Plan Key Findings & Issues

The 1997 Comprehensive Plan found that property tax assessments had increased at a much faster rate than the valuation, resulting in higher property tax burdens for most taxpayers. Tax spending had increased at an after-inflation rate of 62% between 1988 and 1993. The plan noted that most costs were beyond local control, being tied to reduction in school aid from the State and higher disposal costs for MSW.

4. 2022 Public Opinion Survey Results

Survey participants were asked their opinions about current property tax rates. About two-thirds of respondents (67%) thought that taxes are fair while 16% replied they are too high, and a small group (3%) thought they are too low. Over two-thirds (69%) favored increasing property taxes to fund improvements and protections in the Town. Slightly fewer respondents (59%) favored increasing taxes to improve existing or add new Town responsibilities.

5. Conditions and Trends

5.1. Community Revenues and Expenditures

Community revenues and expenditures are summarized in Table L-1 and Table L-2. This data show that revenues and assets have been more or less stable since 2018 with occasional year-over-year fluctuations up to 12%. School costs have increased over this period. These data also show that Penobscot has very low fiscal liabilities (i.e., debt).

Table L-1: History of Municipal Revenues, Current Assets, and School Costs per Year

	2018	2019	2020	2021	2022
Total Revenue	2,461,476	2,547,619	2,741,057	3,112,653	3,100,333
School Costs	1,738,971	1,789,169	1,926,576	2,182,594	2,288,785
Total Current Assets	4,695,976	4,673,902	4,701,786	4,964,571	4,962,910
Long-term Liabilities	88,016	67,013	45,333	190,320	155,946

Source: Penobscot Town Reports Audited Financials

Table L-2: History of Selected Municipal Expenditures by Year

	2018	2019	2020	2021	2022
General Government	137,120	129,026	140,831	118,740	139,617
Public Safety	48,511	64,780	57,619	51,250	86,850
Health & Sanitation	93,054	92,484	103,458	101,880	90,246
Transportation	279,019	305,577	289,206	276,648	322,650
Assessment & Debt Service	93,644	96,381	97,205	100,490	108,003
Unclassified	71,928	77,142	80,775	61,927	90,101

Source: Penobscot Town Reports Audited Financials

5.2. Funding Sources for Capital Items

Past capital investments have been funded by one or more of the following methods:

- Reserve accounts (funded through municipal taxation)
- Bank Borrowing
- Grants (from MaineDOT, and a variety of other state and federal agency grant programs)

5.3. Local and State Valuations and Mil Rates

Table L-3 shows Municipal Real Estate Valuation and Mil Rate by Year. The mil rate has increased from 9.70 in 2018 to 11.4 since 2022.

Table L-3: History of Selected Municipal Expenditures by Year

	2018	2019	2020	2021	2022
Town Valuation (\$1,000)	186,902	192,107	192,917	194,751	196,042
State Valuation (\$1,000)	186,792	188,093	187,264	189,008	190,199
Real Estate Tax Mil Rate (\$/\$1,000)	9.70	10.55	10.40	10.80	11.40

Source: Penobscot Town Reports Audited Financials

5.4. Municipal Debt

The current Town debt was long-term and was paid off in 2023. New long-term liabilities were added by law in 2021, but no new debt was added. The Town has a very large capacity for future borrowing but does not have a history of borrowing.

6. Analysis

6.1. How will future capital investments identified in the plan be funded?

Future capital investments will be funded by one or more of the following methods:

- Reserve accounts (funded through municipal taxation)
- Bank borrowing
- Grants
- Private-Public partnerships
- Bonding
- TIFs (Tax Increment Financing)

6.2. If the community plans to borrow to pay for capital investments, does the community have sufficient borrowing capacity to obtain necessary funds?

As of October 1, 2023, Penobscot has no outstanding bonds or debt.

6.3. Have efforts been made by the community to participate in or explore sharing capital investments with neighboring communities? If so, what efforts have been made?

Penobscot is participating in the Peninsula Utility for Broadband coalition of eight towns on the Blue Hill Peninsula working to extend high-speed accessible broadband internet, based on the Calais-Baileyville utility model.

Peninsula Tomorrow, a regional climate resilience initiative, includes members from the towns of Blue Hill, Brooklin, Brooksville, Castine, Deer Isle, Penobscot, Sedgwick, Stonington, and Surry.

Penobscot has also worked with Brooksville, Sedgwick, and various non-governmental organizations to restore Alewife runs in the Bagaduce Watershed through dam rehabilitation, dam removal, and the installation of nature like fishways (see Chapter E, Marine Resources).

7. Goals, Objectives, and Strategies

Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated change in population and economic development.

Policy 1: Finance existing and future facilities and services in a cost-effective manner.

Policy 2: Explore grants available to assist in the funding of capital investments within the community.

Strategies:

- a. Explore opportunities to work with neighboring communities to plan for and finance shared and adjacent capital investments to increase cost savings and efficiencies.

Policy 3: Reduce Maine’s Tax burden by staying within LD 1 spending limitations.

8. Capital Investment Plan

Table L-4 identifies and summarizes anticipated capital investment needs within the planning period that will be needed to implement the Comprehensive Plan. The table includes estimated costs, timing, and prioritization of the investments. Funding for all capital projects except the Salt/Sand Shed project will be through taxation (and or loans and grants if necessary and available). The Salt/Sand Shed project will use ARPA funds, available grants, and then bonding if necessary.

Table L-4: Prioritized Capital Budget for the Next 10 Years

Budget Item	Priority	Total Cost (incl. grants)	Town Portion	Other Funding	Likely Town Method of Financing
Fire Station Roof	1	\$35,000	100%	None	Taxation
Fire Truck	2	\$350,000	100%	None	Reserve and Taxation

Budget Item	Priority	Total Cost (incl. grants)	Town Portion	Other Funding	Likely Town Method of Financing
Fire Station Lights	3	\$10,000	100%	None	Taxation
Town Hall Foundation	4	\$50,000	100%	None	Reserve and Taxation
Town Office Computer upgrade	5	\$10,000	100%	None	Taxation
Town Office Vault	6	\$10,000	100%	None	Taxation
School Bus	7	\$100,000	100%	None	Reserve and Loan
School Roof	8	\$68,000*	100%	None	Taxation
School Ventilation/Insulation	9	\$60,000*	100%	None	Taxation
Trash Compactor	10	\$70,000	100%	None	Bonding/Loan
Two 40-yard Trash Containers	11	\$25,000	100%	None	Taxation
Salt/Sand Shed	12	\$800,000	100%	None	ARPA, Bonding, and Grants

* Cost estimate based on 2016 Facility Assessment of the Penobscot Community School by The James Sewall Company

Chapter M: Existing Land Use

1. Purpose

This section discusses current land use patterns in Penobscot. An understanding of land use trends is particularly important in determining Penobscot's ability to absorb future growth. Specifically, this section:

- a. Summarizes the breakdown of developed and undeveloped land in terms of estimated acreage and location;
- b. Explores the potential for new development in the next ten years and Penobscot's capacity to absorb the growth; and
- c. Suggests measures Penobscot may want to consider for managing its residential and non-residential growth.

2. Key Findings & Issues

Penobscot is a sparsely populated town of 1,128 residents according to the 2020 census. With an estimated area of 46.55 square miles, Penobscot has a population density of 24 people per square mile. Most of the recent development has been low density single-family residential units. The high cost of real estate and housing is unaffordable for young people to remain in or move to Penobscot. Increasing property taxes and lack of services for the elderly are making it difficult for older residents on a fixed income to age in place. The neighboring service center town of Blue Hill offers more opportunities for commercial development than Penobscot such as existing infrastructure, like public water and sewer systems, and incentives like free land in an industrial park. There is concern that residential development or commercial aquaculture operations along the Bagaduce River will negatively impact wildlife, marine life, and become a blot on the landscape. The 2022 survey results and public engagement events overwhelmingly indicate that residents want to retain the rural way of life that Penobscot provides with no or minimal growth and no large-scale industrial development.

3. 1997 Comprehensive Plan Key Findings & Issues

The findings of the 1997 plan are similar to today's issues: fear of loss of farmland, traffic concerns, and overdevelopment along the shores of the Bagaduce River.

4. 2022 Public Opinion Survey Results

Survey responses indicate that residents favored promoting agriculture and natural resources in the 1997 and 2022 surveys. In the most recent survey, 47% of respondents approved of how local ordinances and regulations were enforced, while 38% had no opinion. When asked about Town maintained recreational areas, 56% of the responses were satisfied with the current state of these areas. Respondents indicated that the following issues needed study or improvement: bicycle trails (69%), land conservation (63%), walking trails – not sidewalks (60%), and multi-use off road trails (43%).

Residents of this community want to retain the rural character of Penobscot. When asked what aspect of Penobscot’s quality of life or character are most important to you, 30% of the unprompted written responses included the word “rural”. Respondents indicated that maintaining the rural way of life is extremely important (84%), somewhat important (15%), and unimportant (0%).

Penobscot residents also indicated that the following uses should only be allowed in designated areas: campgrounds (50%), renewable energy projects (49%), community solar (55%), wind energy (48%), and aquaculture (46%). Survey responses show that 76% prefer to see population levels stay flat or increase slightly in the future. Residents oppose unrestricted development (75%), heavy industry (69%), mobile home parks (56%), and apartment buildings (45%) being located anywhere in Penobscot.

5. Conditions and Trends

5.1. Existing Land Use Classifications and Development Constraints

A visual representation of the current land uses can be seen in Figure M-1. Constraints to development can be seen in Figures M-2 and M-3. Tax related classifications like farmland and tree growth can be seen in Figure M-4.

Current dimensional standards required by Town Ordinances are described in Table M-1. Structure setback requirements are given in Table M-2.

Table M-1: Dimensional Standards Required by Town Ordinances, 2023

Land Use	Minimum Lot Area	Minimum Shore Frontage	
		Tidal	Non-Tidal
Residential Use	60,000 ft ²	150 ft	200 ft
Govt., Institutional, Commercial	60,000 ft ²	200 ft	300 ft
Recreational Facilities	60,000 ft ²	200 ft	200 ft
Commercial Fish Maritime District	60,000 ft ²	None	None
Communication Towers	60,000 ft ²	Undefined	Undefined
Private Campsites in Shoreland Zone	60,000 ft ²	150 ft	200 ft
Campground Sites	5,000 ft ²	150 ft	200 ft
Wind Energy Systems, 10 kW or less	0.5 to 5 acres	One Allowed	
Wind Energy Systems, 10 to 50 kW	5 acres or more	One Allowed	
Mobile Home Parks	3 acres	-	-
Mobile Home Park Lot	50 ft x 100 ft		
Additional Dimensional Standards			
Structures may not exceed 20% of the total lot area.			
Lots in existence on June 28, 1974, shall be treated as if they conformed to lot size specifications set forth herein irrespective of area and dimension.			

Figure M-1: Current Land Use

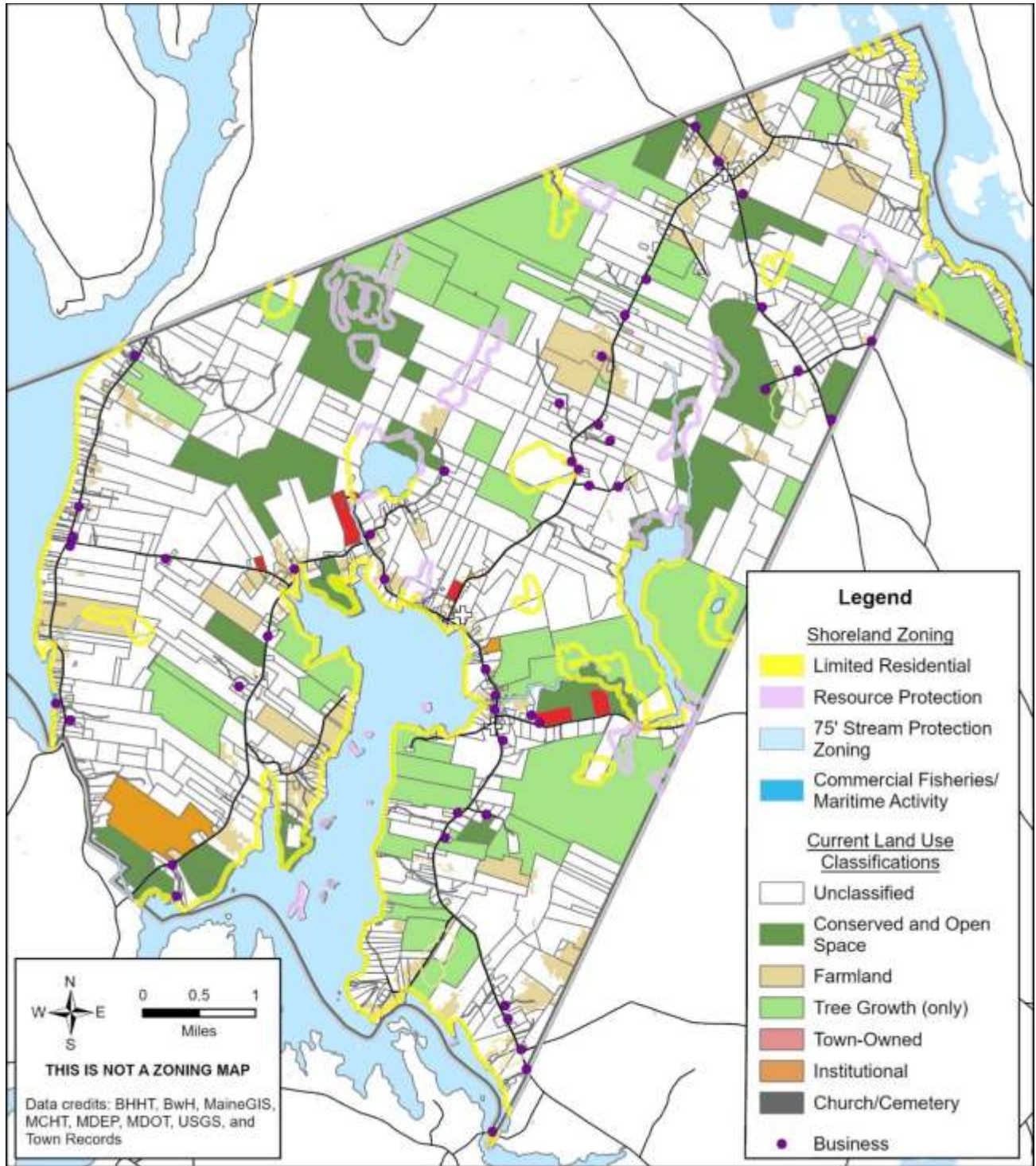


Figure M-2: Development Constraints

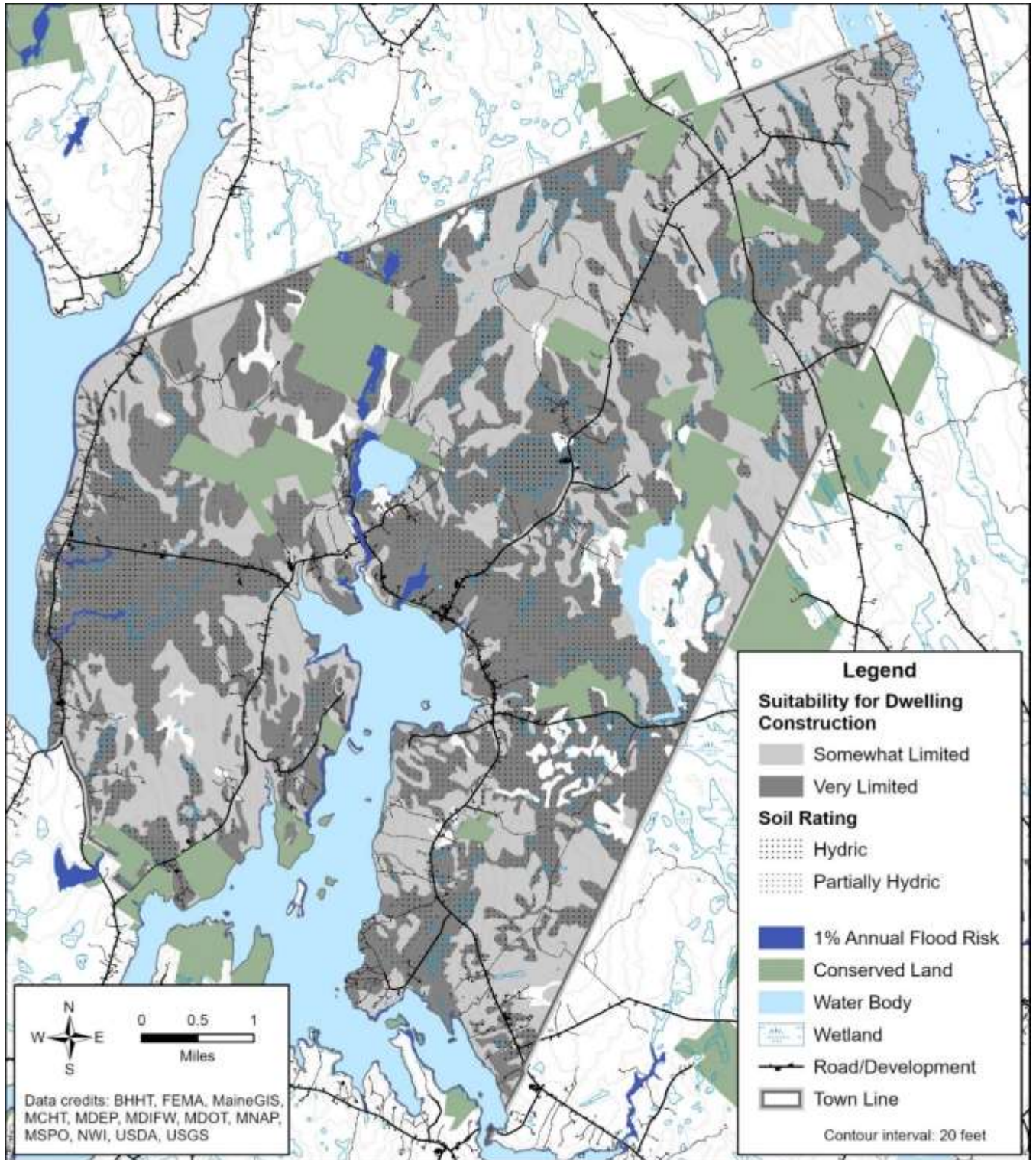


Figure M-3: Tax-Related Land Use Classifications

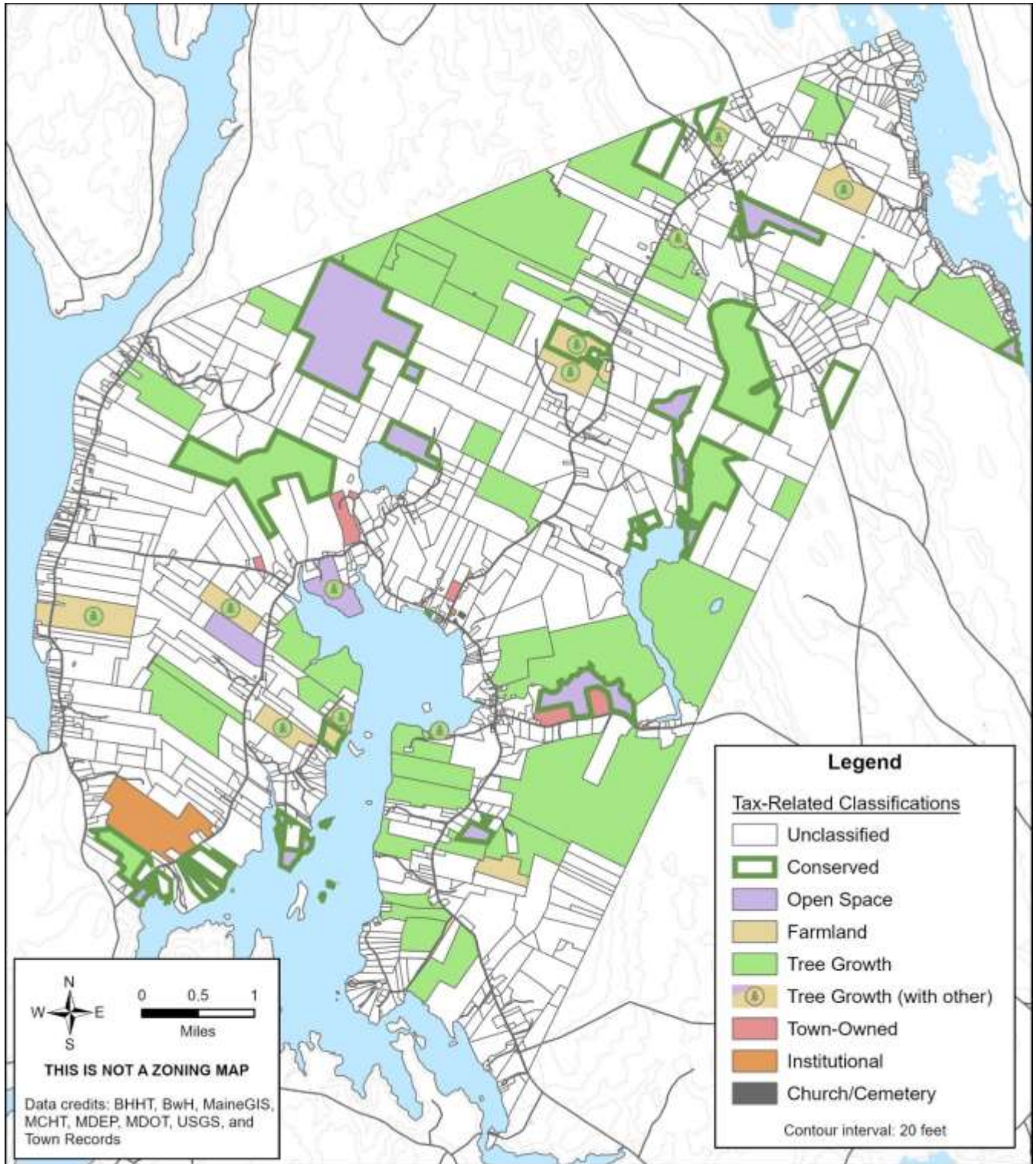


Table M-2: Principal and Accessory Structure Setbacks

Condition	Setback
From great ponds and rivers classified as GPA	100 ft
From other water bodies, tributary streams, and wetlands	75 ft
In "Resource Protection District"	250 ft
Sideline setback	20 ft
Rear line setback	20 ft
Front line setback from roads in subdivisions	50 ft
Septic system/privy setback from a waterbody	100 ft

5.2. Development within the Past Ten Years

A review of Town records indicated that 53 single-family dwelling units were built in Penobscot over the last 10 years. Twenty of these homes were built in existing subdivisions, six units replaced mobile homes or wooden structures in poor condition, and twenty-seven homes were built in various locations in Penobscot. Most of these units were built close to existing roads. Determining the number of commercial buildings was more difficult so it is estimated that three new commercial buildings were built in the last ten years. The only institutional structures built was on the Maine Maritime Academy. The planning board considers a shipping container as a structure if it is to remain on the property for more than one year. Maine Maritime has several containers on their property.

5.3. Land Use Regulations

The Town of Penobscot does not have any designated zones but instead the town is separated into development districts. The Town Land Use Regulations control development under most circumstances, with the exception of the Shoreland Zoning, Floodplain, and Subdivision ordinances, which are based on the State minimums and model ordinance language. The Town also has ordinances for the development of wind energy systems and communication towers. The Town of Penobscot has not adopted a commercial site plan review.

6. Analysis

6.1. How is most recent development occurring: lot by lot; in subdivisions; or in planned developments? Is recent development consistent with the community's

vision? Is recent development occurring predominantly within or adjacent to traditional settlements or expanding into rural areas?

Regulations are not hindering residential housing starts as much as the high cost of property and construction in Hancock County. Large scale commercial, institutional, or industrial development is not desired in Penobscot and is counter to the vision of our residents. Small-scale commercial activity and residential housing starts are in keeping with the Town's vision for Penobscot.

The majority of recent new housing starts are primarily occurring along the existing state, town, and private roads or in established subdivisions and are occurring lot by lot, which is consistent with the community's vision for the future of Penobscot. These developments are sometimes close to traditional settlements (e.g., the Village, North Penobscot), but also occur along the roads connecting traditional village areas. This is a continuation of long-term land use patterns in the town and is not necessarily contrary to the town's rural atmosphere. However, the creation of new roads into currently undeveloped areas and subsequent development along those roads would conflict with the town's traditional environment and vision.

6.2. If the community considers itself rural, urban, or suburban, what are the characteristics that contribute to that sense? How does it fit in the regional context?

Penobscot is considered a rural town and often referred to as a bedroom community. With no major employers within the town, most residents live here and are employed in other communities. Penobscot also has a relatively large population of retired persons. Using estimates from the National Land Cover Data set, approximately 80% of Penobscot is forested and roughly 6% is farmland for a total of 86% primarily undeveloped land. Much of Penobscot's forested land occurs in large blocks, which provide valuable wildlife corridors and habitat for most mammals known to exist in Maine. With little commercial development, no industrial scale operations, a low population density, a high percentage of undeveloped land, two relatively undeveloped water bodies, and a huge wildlife population, Penobscot considers itself to be a rural town.

Penobscot is located between the service center towns of Bucksport/Orland and Blue Hill. Grocery stores, hardware stores, lumber yards, gas stations, medical facilities, and dining opportunities are only 15 miles away. Neighboring towns have commercial development that is centrally located, and the outskirts of their communities have the same rural characteristics of Penobscot which provides a smooth transition from one town to another.

6.3. How effective are current land use regulations and other non-regulatory measures in directing growth to appropriate areas and protecting critical resources? How might they be improved?

Penobscot has no town-wide zoning ordinances, but a permit for development activity is required. Permits are issued by either the Planning Board or Code Enforcement officer as required by any of Penobscot's Town Ordinances. Residential building permit applications, and any use requiring the disposal of black or gray water, must be accompanied by Subsurface Wastewater Disposal plan prepared by a Maine licensed soil evaluator and must comply with the Maine State Plumbing Code. The Town's Shoreland Zoning Ordinance protects critical resources by designating them as Resource Protection Areas. It would be prudent for the Planning Board to review the data set provided by the State for this plan to ensure that the Shoreland Zoning Ordinance is current and accurate.

6.4. How do current regulations promote or inhibit development in keeping with the community's traditional village or neighborhood character?

Development within The Town is managed by the Land Use Regulations (updated 1986), the Shoreland Zoning Ordinance (updated 2022), the Floodplain Ordinance (updated 2016), the Subdivision Ordinance (adopted 1980), the Wind Energy System Ordinance (adopted 2011) and the Communications Tower Ordinance (adopted 2011). These management tools are working well to direct development into areas that are consistent with the community's vision.

Current regulations allow for lots in existence prior to the first Land Use Regulations, adopted in 1974, to be developed regardless of lot size. A variance for sideline setbacks may be granted by the Appeals Board under extreme circumstances. This promotes the traditional village character by allowing residential development where lot sizes are typically much smaller than the lot size required after 1974.

6.5. What is the community's administrative capacity to manage its land use regulation program, including planning board and code enforcement officer?

The Town Planning Board is appointed by the Select Board and there has never been an issue finding residents to sit on the Board. There are members of the Board that have served multiple terms, which allows for continuity in interpretation of the ordinances and historical knowledge of past permitting and violations. The Planning Board is advised by a Licensed Plumbing Inspector (LPI) and a Code Enforcement Officer (CEO) - both positions

are appointed by the Select Board. The Town CEO and LPI are often employed by neighboring communities that have larger population bases, more permit applications, more regulations, and are familiar with emerging issues, which positions the Town to be proactive instead of reactive.

6.6. Are floodplains adequately identified and protected? Does the community participate in the National Flood Insurance Program? If so, is the floodplain management ordinance up to date and consistently enforced? Is the floodplain management ordinance consistent with state and federal standards?

Penobscot has participated in the National Flood Insurance Program since 1975. The Town updated its flood Plain Management Ordinance on March 8, 2016, which became effective on July 20, 2016. The flood zone maps were created at the same time and, according to the Federal Emergency Management Agency website, they have not since been updated as of Summer 2023. The Town will continue to Monitor the Federal Flood Insurance Program for updates to the local flood zone maps and update information, as necessary.

Chapter N: Future Land Use

1. Purpose

The purpose of the Future Land Use section is to:

- a. Examine the existing physical conditions of the lands in Penobscot;
- b. Determine the development patterns of the past ten years;
- c. Analyze the results of the public survey and engagement meetings;
- d. Predict what the needs of the town will be over the next ten years;
- e. Guide the orderly growth and development of the town;
- f. Determine where development is best suited;
- g. Maintain the town's rural character.

2. Key Findings and Issues

The results of the public opinion survey, several public engagement meetings, and friendly conversations at the post office, market, and at the transfer station clearly show that residents overwhelmingly cherish the rural character of Penobscot where unspoiled views and wildlife are abundant. The Bagaduce River is a unique ecosystem that provides important habitats for marine life and migratory birds. The State has identified the Bagaduce River as a Focus Area of Statewide Ecological Significance. The inland farmlands and blueberry fields contribute to the rural character while providing food and economic activity. The vast forests, great ponds, and numerous brooks are a home for a variety of fish, birds and other wildlife and a sanctuary for residents that like to hike, hunt, or fish.

Penobscot residents also favor low density housing, and it was clear that intense commercial development or any industrial use is not desired. Residents also favored using regulations to control and ensure an orderly and slow growth rate for the Town of Penobscot.

Based on the presence of fertile soils along the Route 15 highway corridor, this area should be reserved for agriculture purposes and low-density residential development to the fullest extent practicable. Nearly 40% of the lands in Penobscot are composed of hydric soils which limits the level of development in these areas (see Section M, Existing Land Use). The clay-based soils and existing density of residential development on small lots of land in the village area at the head of Northern Bay make this area incompatible for high-density residential or commercial development. There are large blocks of land within the interior

portions of Penobscot that are currently enrolled in the tree growth program, which are located far from existing roads and services where development would not align with the Town's vision and would undermine the rural character of Penobscot. Excessive development in the shoreland zone would also detract from the rural character of Penobscot, especially along the Bagaduce River, which could lead to a delisting as a Focus Area of Statewide Ecological Significance.

3. 2022 Public Opinion Survey Results

The public survey data indicated that most of the respondents were full-time residents that lived in a single-family home and showed a desire for population density to remain flat or increase slightly in the next five years.

- Respondents overwhelmingly favor protecting ponds and streams, wildlife habitat and drinking water, wetlands, agriculture, and coastal lands, forests, and recreational land/open space.
- Respondents favored allowing single-family homes (78%), forestry (76%), and agriculture (71%), anywhere in the Town of Penobscot.
- Respondents did not want unrestricted development (74%), industrial development (68%), mobile home parks (55%), or apartment buildings (46%) allowed in Penobscot.
- When survey takers were asked "what tools do you favor to guide future development" the responses were by using land conservation (80%), ordinances (77%), and economic incentives (62%).

Respondents prefer to live in a rural community where traditional uses like farming and tree harvesting are allowed, where residential growth is slow, orderly, and dominated by single-family homes, and that land conservation and ordinances are acceptable methods to meet this goal. Residents do not favor unregulated growth, industrial development, or high-density housing.

4. Conditions and Trends

Before the Covid-19 pandemic of 2020, real estate developers were purchasing distressed properties, rehabilitating the existing structures, and then selling the improved property. The latest trend is for developers to purchase these properties and turn them into short term rentals, thus reducing the existing housing stock and opportunities for first time home

buyers, people relocating to Penobscot, and the local workforce looking for long term rental units. Development within the past 10 years is discussed in Chapter M.

Although the State predicts a decline in population for the Town over the next decade, the factors noted below suggest an increase in population is also possible, which could lead to the need for more housing and the eventual development of vacant lots.

A. Possible effects of climate change on population:

- Increased temperatures throughout the country will likely increase the desirability of Maine's cooler air.
- Sea-level rise will increase the value of Maine's coast as opposed to the protected shorelines elsewhere.

B. Other factors that would increase population changes:

- The introduction of affordable broadband allows more residents to work remotely.
- A high percentage of small, elderly households may in due course be replaced by younger families.
- A continued shortage of needed workers will improve wages and increase migration into the region.

C. Likely impacts of Population increase:

- Increased housing prices, which could lessen the availability of affordable housing.
- Seasonal and three-season dwellings could become year-round.
- A greater density of population would affect the rural nature of the town.
- Possible tensions between land uses and surrounding abutters.
- Anticipation of greater municipal services could increase taxes and require an expansion of the existing transfer station, addition to the fire station, a larger cemetery, or possibly the relocation of the Town Hall.

There has been a renewed interest in farming, especially along the Route 15 corridor where small family-run operations have reclaimed old farmsteads. This has led to a small economic upturn supported by the Town's Local Food Ordinance. Several parcels enrolled in the Tree Growth Program have been harvested in recent years, in accordance with the forest management plans, but the parcels remain as commercial forests.

4.1. Future Land Use Plan Designations

Future land use designations are shown in Figure N-1.

4.2. Growth Areas

The Town seeks an exemption from defining Growth Areas due to the lack of public water or sewer systems. The population of Penobscot has declined between 2010 and 2020 and the State predicts that this trend will continue in the near future.

4.3. Rural Areas

The Rural Area identified in North Penobscot, along Route 15 and Back Ridge Road corridors, encompasses the most fertile soils in Penobscot that are suitable for farming. Protecting this area from incompatible uses will maintain the rural character of Penobscot and will ensure that growers and consumers are able to produce and buy locally grown food, which the majority of Penobscot residents favor. There are no smaller land use districts within this area.

Much of the area is used for the cultivation of wild blueberries. Raising livestock has become more attractive to local farmers recently. Some of this area is used for pasture. Many farms are surrounded by tree growth, which helps to prevent soil erosion and allows the owners to harvest their own firewood or logs that can be milled into lumber. There is a small 10-lot subdivision located within this area but most of the housing is low-density, single-family residences. Similar patterns of rural use are anticipated for the future of this area.

This area of Penobscot is served by State routes 15 and 199 (collectors) and the Back Ridge Road (local), which provide convenient access to larger towns on and off the peninsula. The local service centers of Bucksport and Blue Hill are within ten miles of this area.

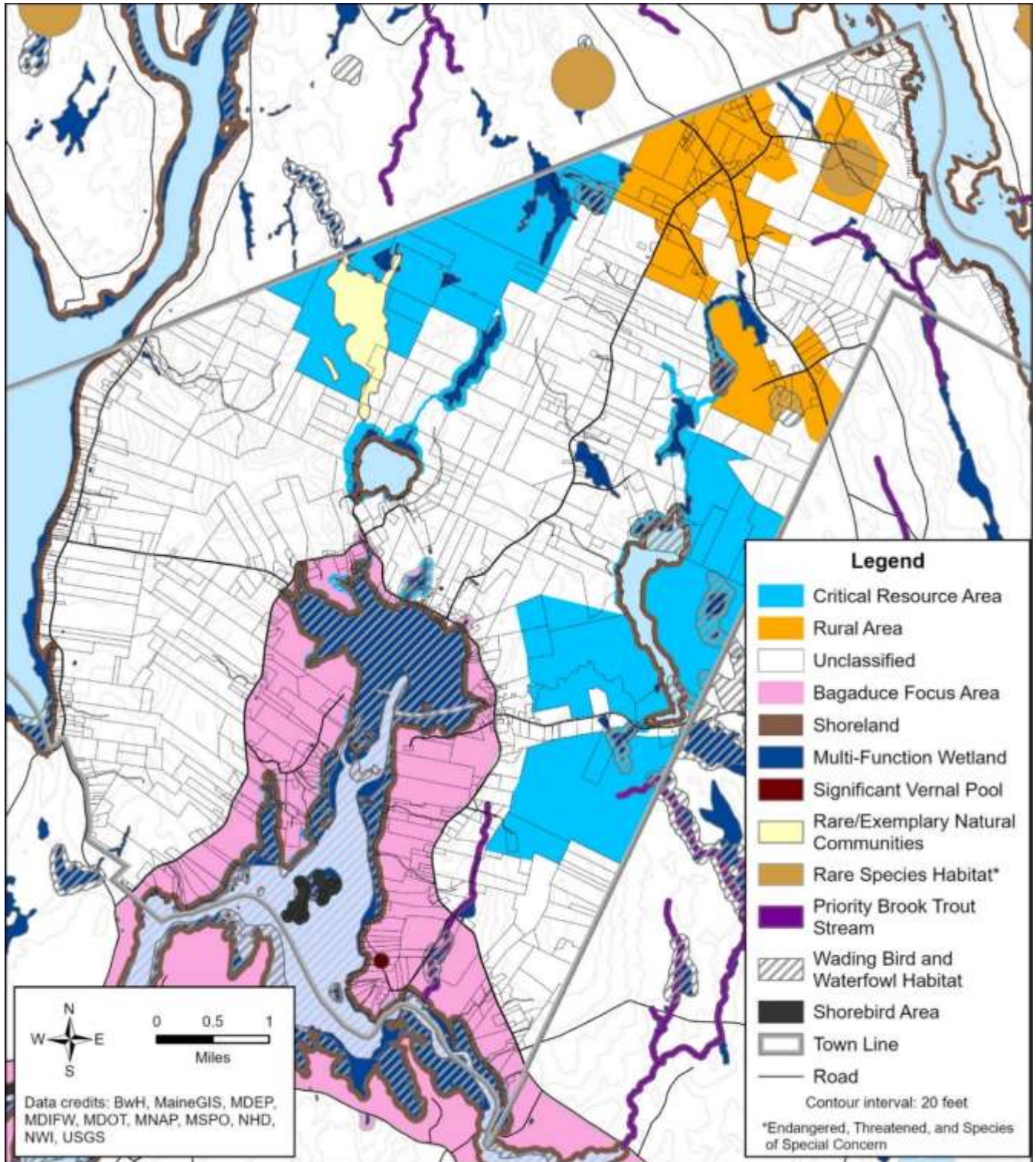
Currently there are no incompatible uses within this proposed rural zone. It would be prudent for the Planning Board to consider the need for extra protection from incompatible development, especially uses that might interfere with the raising of livestock. Capital investment to support the current uses is not needed at this time and is not predicted to be needed in the next 10 years.

4.4. Critical Resource Areas

Critical Resource Areas are defined as areas most vulnerable to the impacts of development and must include critical natural resources. Examples of critical natural resources that exist in Penobscot are the shoreland zone, large habitat blocks, areas identified by the State as Significant Wildlife Habitat, Wild Brook Trout Priority Areas, Exemplary Natural Communities, and Beginning with Habitat Focus Areas of Statewide Ecological Significance.

DRAFT

Figure N-1: Future Land Use Plan Designations



4.5. Critical Resource Area (A)

Critical Resource Area (A) is identified along the Orland/Penobscot Town Line, is roughly 1,800 acres in size, and is composed of mostly conserved land by fee and parcels enrolled in the Tree Growth Program that are almost entirely undeveloped. These areas provide a habitat for wildlife, hunting and hiking opportunities, which Town residents desire. This area contains land that is not suitable for development. It contains land designated Resource Protection Areas by the Town and contains critical natural resources, including inland waterfowl and wading bird habitat, a raised level bog ecosystem, a white cedar woodland and a tall grass meadow natural community. It also includes much of a large undeveloped habitat block.

There is only one private gravel road within this area that originates in Orland and provides access for two camps. There are no uses proposed for this area and residential development should remain low due to the soils that are not favorable for low density development. This area is not located near any transportation routes that would support any type of development. No capital investments should be needed as development should not occur in this area.

It would be prudent for the Planning Board to review the Shoreland Zoning Map and review resource protection areas to ensure that valuable habitat areas are properly protected.

4.6. Critical Resource Area (B)

Critical Resource Area (B), identified around Wight's Pond, Turtle Pond, and what is referred to as the Back Highway, is a large undeveloped block of land that is roughly 2,700 acres in size that provides habitat for small and large game animals. This area also contains lands that have been identified by the Planning Board as Resource Protection Areas and State identified areas of High and Moderate Wetlands, Wild Brook Trout Priority Area, Significant Inland Waterfowl and Wading Bird Habitat. This area also contains large blocks of undeveloped habitat.

Most of the lands in this area are not suitable for low density development due to soil type. There is a large area to the east of Wight's Pond with suitable soils; however, with no existing infrastructure development in this area would require reconstructing old logging roads, installing roughly one mile of powerline, and would fragment a large and important wildlife corridor that extends into the neighboring town of Blue Hill. There are two houses on the northern end of Wight's Pond that are less than one-half mile from the shoreline

with the closest being approximately 240 feet from the shoreline. There are four houses within the shoreland zone on the southern end near the outlet of the pond. The perimeter of Wight's Pond is approximately five miles long and 4.7 miles of shorefront are presently undeveloped.

A large percentage of this area has been used as a commercial forest for around 100 years. Much of this land was used to provide logs for a water powered sawmill at the foot of Wight's Pond, and most of it is currently enrolled in the Tree Growth Program. The Town owns 150 acres of land that is under conservation easement that would be included in this area. Public survey results indicate that residents favor 84% of forestlands (84%) and forest management (76%). Protecting this area from development would be in keeping with the community's vision for the future.

With little to no development in this area, there should be no need for capital investment.

4.7. Other Critical Resource Areas

Other Critical Resource Areas include all areas identified as a Focus Area of Statewide Ecological Importance that lies within the municipal boundaries of Penobscot, the undeveloped shoreline and wetlands associated with Wight's, Pierce's, and Turtle ponds, the wetlands associated with McCaslin Stream, Winslow Stream, Meadow Brook and their respective waterways, the salt marsh along what is known locally as "the crick", the 75 foot buffer along the Sam Herrick Brook, Gus Moore Brook, Seneca Brook and Camp Stream.

Much of the land identified as a Critical Resource has been designated as a Resource Protection Zone on the official Shoreland Zoning Map, with a large amount of land designated as Limited Residential.

5. Analysis and Key Issues

5.1. How does the Future Land Use Plan align and/or conflict with the community's vision statement?

The Future Land Use section aligns with the community's vision for the future of Penobscot by identifying high priority lands that should be protected from being over-developed. These areas include the high value farmlands along the Route 15 corridor, large swaths of land located in the interior sections of Penobscot that are either currently enrolled in the Tree Growth Program or are part of a large block of land that provides habitat and corridors for animals to travel through freely, lands conserved by fee or easement, high

value habitats identified by the State, the shoreland zone, and the area around the Bagaduce River that is designated as a Focus Area of Statewide Ecological Significance.

5.2. How does the Future Land Use Plan relate to existing regional economic, housing, transportation, and natural resource plans? How does the Future Land Use Plan relate to recent development trends?

There are no existing regional plans for the Plan to relate to. This plan is projecting that future development trends will show a small increase in residential development, with no industrial scale development, and that the future needs will be centered around expanding existing town facilities to meet the increased demand on services. Recent residential development patterns indicate that homes are being constructed lot by lot along existing roads. The Future Land Use Plan encourages that development occurs along existing roads by acknowledging that much of the interior parcels are large blocks of undeveloped land that provide wildlife corridors, are enrolled in the Tree Growth Program, are composed of hydric soils, and may be under conservation easement.

5.3. How can critical resource areas be effectively protected from future development impacts?

Current regulatory mechanisms that protect the identified critical resource areas include State criteria for the installation and location of subsurface wastewater disposal systems and the town Shoreland Zoning Ordinance, Subdivision Ordinance, Floodplain Ordinance, and Land Use Regulations. Current non-regulatory mechanisms include observations and monitoring of the marine environment by the Shellfish Committee, water quality monitoring by the Department of Marine Resources Bureau of Public Health, and conservation (by fee or easement) by land trusts.

Proposed mechanisms to protect critical resource areas include:

- Create and adopt an aquaculture ordinance.
- Expand public outreach by the Shellfish Committee to educate the public about point source pollution.
- Review the existing town ordinances to ensure that critical resource areas are protected.
- Encourage landowners to consider conservation easements or sales to land trusts.
- Review the Shoreland Zoning Ordinance to ensure that critical resource areas are mapped as resource protection areas.

- Consider increasing the setback distances beyond the State minimums within the shoreland zone.
- Consider creating a Commercial Site Plan Review.

5.4. Given current regulations, development trends, and population projections, how many new residential units and how much commercial, institutional, and/or industrial development will occur in the planning period? Where will this development go?

Town records indicate that 53 residences have been built in the last ten years. With an estimated lot size of 1.5 acres for a residence, 79.5 acres of land will be needed to accommodate a flat growth rate. A 10% increase in the number of residences would require 88.5 acres of land. Projections used in the Existing Land Use section answered this question based on a 10% increase in population, which would require 90 acres of land. Regardless of the analysis method used, there is ample land available to meet the projected future needs for both residential and commercial use.

Most of the land in Penobscot is designated as a General Development District, which provides more land than will be necessary for residential or commercial development in the future. This plan recognizes the areas protected by the Shoreland Zoning ordinance and has identified rural and critical natural resource areas, which will guide future development towards areas that fit with the people’s vision for the Town.

6. Policies

- (1) To coordinate the community’s land use strategies with other local and regional land use planning efforts.

While no formal municipal planning efforts exist, the local land trusts have collaborated to conserve and preserve the highly productive farmlands along the route 15 corridor in Orland, Penobscot, and Blue Hill. These trusts have also joined forces to protect ecologically valuable lands within the Bagaduce River Watershed which includes the towns of Castine, Penobscot, Brooksville, and Sedgwick.

- (2) To support the locations, types, scales, and intensities of land uses the community desires as stated in its vision.

This comprehensive plan identifies rural areas with the intent of protecting farmlands and forests as well as identifying areas that are ecologically sensitive that should receive extra

protection to ensure that any future development does not compromise these spaces and that Penobscot retains its rural character. Suggestions have been made for the appropriate Town officials and Boards to consider how to direct the future growth of Penobscot and where development should be encouraged.

- (3) To support the level of financial commitment necessary to provide needed infrastructure in growth areas.

The current policy is to provide financial commitment to maintain or expand town infrastructure when needs are identified or anticipated due to an increase in the population or infrastructure that exceeds its lifespan. Penobscot operates under the Town Meeting form of government where the residents of the town vote to approve or deny funding for proposed projects at the annual Town Meeting. Without public water or sewage systems, there is little need for any capital investments for infrastructure. The existing infrastructure has the capacity to meet the predicted growth over the next ten years.

- (4) To establish efficient permitting procedures, especially in growth areas.

It might be prudent to review all maps and town ordinances that pertain to development to see if any permitting efficiencies can be identified and to ensure that the necessary protections are in place to align with the community's vision for the future of Penobscot. The maps included in this plan should contain the most up to date information available.

- (5) To protect critical resource areas from the impacts of development.

It would be prudent to review the Shoreland Zoning Map to ensure that the identified critical resource areas are depicted as a resource protection area.

7. Goals, Policies, and Strategies

Goal: To maintain the rural, small-town character and pristine environment, without placing undue burden on taxpayers.

Policy 1: Support the locations, types, scales, and intensities of land uses the community desires as stated in its vision.

Strategies:

- a. Review and amend ordinances and maps to ensure that they conform with the Plan.
- b. Consider an industrial-scale solar power ordinance.
- c. Adopt a Commercial Site Plan Review.

- d. Define tools to protect critical resource areas and review all ordinances.

Policy 2: Prepare for the effects of climate change.

Strategies

- a. Consider the impacts of sea level rise on uses and setbacks.

Policy 3: Establish an efficient permitting process.

Strategies:

- a. Provide support for the Code Enforcement Officer, including providing training, and participating in regional conversations about common challenges and opportunities.
- b. Review permitting process and fees.

Policy 4: Coordinate land use strategies with other local and regional land use planning efforts.

Strategies:

- a. Work with neighboring towns and HCPC to develop a regional land use plan.

Policy 5: Track future development by type and location.

Strategies:

- a. Digitize Planning Board permits.
- b. Investigate options for digitizing, and maintaining digitized, parcel maps.

Policy 6: Ensure the effective and efficient implementation of the Comprehensive Plan.

Strategies:

- a. Periodically review and evaluate how the strategies of the Comprehensive Plan have been put into practice.
- b. Work with the Select Board and Finance Committee to solidify funding for capital improvement projects through mechanisms such as agent fees, grants, bonds, loans, and taxation.

Policy 7: Protect critical waterfront areas.

Strategies:

- a. Pursue opportunities to purchase shore front property.

Implementation and Evaluation Program

This Plan contains strategies for addressing local, regional, national, and global issues that the Town will face over the next 10 years. The matrix below contains an overarching goal for each chapter, with specific policies and strategies that the Town will use to accomplish the Plan’s goals. The matrix outlines the goals and policies (what is to be accomplished), strategies (how it will be accomplished), a responsible party (who will manage and implement strategies) and a timeframe.

The purpose of this comprehensive plan is to assist the Select Board and Planning Board with decisions that will affect the future development in Penobscot. This document contains the most current state and federal data that was available as of October 1, 2023. This document also reflects the most popular opinions voiced by residents and taxpayers that responded to the public survey or attended any of the public outreach meetings convened by this committee.

The Comprehensive Plan Committee should convene every two years to review this comprehensive plan to determine:

1. The degree to which future land use plan strategies have been implemented;
2. The location and amount of new development;
3. Amount of critical natural resources, critical rural, and critical waterfront areas protected through acquisition, conservation easements, or other measures available to Penobscot. These evaluation measures will serve as guidance for the previously mentioned meeting and metrics to measure implementation.

Historic and Archaeological Resources			
Goal: To preserve its historic and archaeological resources that are important to the Town’s history or are otherwise determined to have historical or cultural significance.			
Policy	Strategy	Responsible Party	Timeline
Protect historic sites and archeological resources	Retain suitable existing ordinance rules	Planning Board	Ongoing
	Retain ordinance rules requiring Maine Historic Preservation Commission (MHPC) information be included in any permit application review	Planning Board	Ongoing

	Ask the local Historical Society to document historic sites and building and report to the MHPC	Select Board, Planning Board, Corde Enforcement Officer	2024
Water Resources			
Goal: To protect the quality and manage the quantity of the Town’s water resources, including lakes, aquifers, great ponds, estuaries, rivers, and coastal areas.			
Policy	Strategy	Responsible Party	Timeline
Protect current and potential drinking water resources	Request the State to quantify groundwater resources	Select Board or Maine Geological Survey	2024-2029
	Protect public wellhead and aquifer recharge areas	Planning Board, DEP	2024-2029
	Ensure ordinances are State compliant to protect water resources	Planning Board	2024-2025
	Keep Flood Plain Ordinance current	Planning Board	2024 - 2029
	Provide private well water test information	Code Enforcement Officer	2024 - 2025
	Ensure any water extraction does not exceed capacity	Select Board, Planning Board, Maine Geological Survey	2024 - 2029
Protect and improve surface water resources	Provide information about threats to water resources from human activity	Code Enforcement Officer	2024 - 2025
	Review and consider ordinances to protect surface water resources	Planning Board	2024 - 2025
	Consider adoption of low impact development standards	Planning Board	2024 - 2025
	Review municipal operations impact on water resources	Select Board, Planning Board, Road Commissioner, or Fire Department	2024 - 2029

	Verify and document water resource conditions	DEP, Hancock County Soil and Water Conservation District	2024 - 2029
	Monitor local ponds for invasive species	Select Board, Maine Lakes Assoc.	2024 - 2034
	Consider a Commercial Site Plan Review to protect water resources	Planning Board	2024 - 2025
Minimize pollution discharge	Provide information about malfunctioning septic systems	Code Enforcement Officer	2024-2025
	Monitor water quality of ponds and streams	DEP, Hancock County Soil, Water Conservation District, DMR, or Selectboard	2024 - 2029
	Ensure all ordinances address storm water runoff	Select Board, Planning Board, DEP, MaineDOT	2024 - 2029
Cooperate with neighboring communities to protect mutual water resources	Join Brooksville and Sedgwick on alewife management	Select Board, Alewife Committee	Ongoing
Improve accuracy and awareness of Water Resource data in Town	Partner with HCPC to maintain a map of town-owned culverts	Select Board, HCPC	2024-2025
	Coordinate with HCPC to update Maine Drinking Water Program database	Select Board, HCPC, Maine Center for Disease Control and Prevention	2024-2025
	Create informational signage at Pierce's Pond that promotes preventative measures for invasive species	Selectboard, Maine Lakes Assoc., local volunteer group	2024-2025
Natural Resources			
Goal: To protect the Town's critical natural resources, including wetlands, wildlife, and fisheries habitat, shorelands, scenic vistas, and unique natural areas.			
Policy	Strategy	Responsible Party	Timeline

Protect the Bagaduce River environment	Inform landowner about Best Shoreline Management Practices	Shellfish Committee, Code Enforcement Officer	Ongoing
	Consider the impacts of climate change / sea level rise on uses and setbacks	Planning Board, Resilience Committee	2024 - 2025
	Discourage using riprap to harden shorelines	Planning Board, Code Enforcement Officer	2024 - 2034
Minimize impacts on Critical Natural Resources	Develop performance standards for development in priority resource areas	Planning Board	2024 - 2029
	Develop a Natural Resource Protection Plan	Planning Board	2024 - 2029
	Review Land Use Regulations to ensure that Beginning with Habitat maps and information are included as a part of the Planning Board review process	Planning Board	Ongoing
	Participate with neighboring towns and regional efforts regarding efforts to protect shared natural resources	Select Board, HCPC	Ongoing
	Continue working with land trusts and other private partners to protect critical and important natural resources	Select Board, Land Trusts	Ongoing
Improve the accuracy of Natural Resource data of Penobscot	Document the existing plant, animal, fish, bird, and insect species in Penobscot to update State GIS layers	Alewife Committee, Shellfish Committee, Land Trusts	Ongoing
Agriculture and Forestry			
Goal: To safeguard important agricultural and forest resources and support the ability of farmers and foresters to continue to engage in these traditional occupations.			
Policy	Strategy	Responsible Party	Timeline
Protect prime farmlands	Consider designating locally significant farmland	Select Board	2024 - 2029

	Consult Soil & Water Conservation District staff	Planning Board	2024 - 2029
	Require Subdivision plans to preserve farmland as much as possible	Planning Board	2024 - 2025
	Adopt a Commercial Site Plan review	Planning Board	2024 - 2025
	Limit development in Resource Protection areas	Planning Board	2024 - 2025
Protect existing and potential forest lands	Inform residents about tax incentive programs	Select Board	2024
	Consult Maine Forest Service staff	Planning Board	2024 - 2025
Support commercial forestry and farming	Consider a Commercial Site Plan Review to prevent incompatible uses	Planning Board	2024
	Allow farmstands, greenhouses, and firewood operations	Planning Board	Ongoing
	Include commercial forestry and agriculture in regional development plans	Planning Board, HCPC	2024 - 2029
Marine Resources			
Goal: To protect the Town's marine resources, industries, and uses from incompatible development and ecological impact, and to promote access to the shore for commercial fishermen and the public.			
Policy	Strategy	Responsible Party	Timeline
Protect marine habitat and water quality	Review ordinances and consider sea level rise and set back rules	Planning Board	2024 - 2025
	Continue scientific studies of the Bagaduce	Shellfish Committee, Alewife Committee, Maine Center Coastal, Fisheries, Maine Maritime Academy	Ongoing
	Encourage participation in Clean Marina & Boat Yard Programs	Code Enforcement Officer	2024 - 2025

	Continue alewife restoration projects	Alewife Committee	Ongoing
Protect commercial fishing grounds	Develop aquaculture ordinance	Aquaculture Committee, Planning Board	2024 - 2025
Foster and protect water dependent land uses	Maintain the Commercial Maritime District	Planning Board	Ongoing
	Promote the Working Waterfront tax program	Select Board	2024 - 2025
Improve harbor facilities and management	Install life ring at the town landing	Select Board	2024
	Pursue opportunities to purchase shorefront	Select Board, Land Trusts	Ongoing
Protect marine views and access for fishing, tourism, and recreation	Continue to enforce the Shoreland Zoning Ordinance	Planning Board, Code Enforcement Officer	Ongoing
	Continue to conserve land by fee or easement	Select Board, Land Trusts	Ongoing
Population and Demographics			
Goal: To maintain its rural character through gradual population changes that includes people of diverse ages and wealth.			
Policy	Strategy	Responsible Party	Timeline
Support the ability of residents to stay in town	Consider affordable housing opportunities and grant funding	Housing Committee, Select Board, HCPC	2024 - 2029
	Support age in place policies	Select Board	Ongoing
	Support education and training for trades and technology	Select Board	Ongoing
	Maintain tax rates as low as possible	Select Board	Ongoing
	Maintain social support programs	Select Board	Ongoing
Economy			

Goal: To promote an economic climate that increases job opportunities and overall economic well-being.			
Policy	Strategy	Responsible Party	Timeline
Support economic development that reflects the community's regional role	Review ordinances to ensure resident's ability to operate home businesses	Planning Board	2024 - 2025
	Consider a commercial site plan review to guide growth that conforms with the community's vision in terms of scale, design, location	Planning Board	2024 - 2025
Housing			
Goal: To encourage and promote affordable, decent housing opportunities for Penobscot's residents.			
Policy	Strategy	Responsible Party	Timeline
Promote affordable housing to support the economic development	Explore grant opportunities, work with other towns, and form a committee	Housing Committee, Select Board	2024 - 2029
Support regional housing partnerships	Form a committee and work with other towns / agencies	Select Board	2024 - 2026
Ensure land use controls promote affordable housing	Retain existing ordinance provisions that allow additional dwelling units	Planning Board	2024 - 2025
Recreation			
Goal: To promote and protect the availability of outdoor recreation opportunities, including access to surface water.			
Policy	Strategy	Responsible Party	Timeline
Maintain existing facilities to meet current and Future needs	Create a Recreation Committee	Select Board	2024 - 2029

	Maintain and expand local and regional off-road trails for non-motorized and motorized uses	Select Board, Land Trusts	2024 - 2029
Provide Open Space for recreational use	Collaborate with land trusts to continue and expand recreational opportunities	Select Board, Land Trusts	Ongoing
	Support grant applications submitted by Land Trusts	Select Board	Ongoing
	Inform landowners about Maine Landowner Liability Law	Select Board	2024 - 2025
Maintain and Improve access to salt and freshwater bodies	Maintain existing access points pursue opportunities to purchase shorefront property	Select Board, Land Trusts	Ongoing

Transportation

Goal: To plan for, finance, and develop an efficient and safe transportation system to complement State roads and state-aid roads in the Town and accommodate the level of anticipated population change and economic development.

Policy	Strategy	Responsible Party	Timeline
Prioritize transportation needs to ensure safe and efficient use	Develop a local and regional plan for all modes of transportation	Select Board, Planning Board, HCPC	2024 - 2029
Improve transportation for safety and efficiency	Participate in local and regional planning efforts	Select Board, Planning Board, HCPC	2024-2029
Manage land use to maximize efficiency and reduce travel mileage	Review ordinances to ensure compliance with State Transportation Policy Act	Planning Board, HCPC	2024 - 2029
	Ensure new entrances have all DOT permits	Code Enforcement Officer	Ongoing
Ensure children, elderly, and disabled have reliable transportation networks for walking, biking or motorized vehicles	Develop a local and regional plan for all modes of transportation	Select Board, Planning Board, HCPC	2024-2029

Promote cost savings on State and State aid roads	Seek grant funding to leverage Federal funds	Select Board, HCPC	Ongoing
Enable projects not on the DOT workplan	Seek grant funding to leverage State and Federal grant dollars	Select Board, HCPC	Ongoing
Public Facilities and Services			
Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated changes in population and economic development.			
Policy	Strategy	Responsible Party	Timeline
Meet public facility and service needs	Plan for and complete capital investment projects	Select Board or Finance Committee	Ongoing
	Explore regional delivery of local services	Select Board, HCPC	2024-2029
Improve elder care services	Determine needs and ideas for actions	Form a committee or Eastern Area Agency on Aging	2024-2029
Assess vulnerability to emergencies, disasters, and climate change	Prepare an emergency response plan	Fire Department, Hancock County Emergency Management Agency, Community Resilience Committee	2024-2029
Create an emergency shelter at the school	Identify needed equipment and develop policies	Fire Department, Select Board, School Committee, School maintenance staff, or Hancock County Emergency Management Agency	2024-2029
Fiscal Capacity			
Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated changes in population and economic development.			
Policy	Strategy	Responsible Party	Timeline

Finance existing and future facilities and services in a cost-effective manner	Solidify funding for capital improvement projects through mechanisms such as agent fees, grants, bonds, loans, and taxation.	Select Board, Finance Committee	Ongoing
Explore grants available to assist in the funding of capital investments within the community	Explore opportunities to work with neighboring communities to plan for and finance shared and adjacent capital investments to increase cost savings and efficiencies	Select Board, Finance Committee, HCPC	Ongoing
Reduce Maine’s Tax burden by staying within LD 1 spending limitations		Select Board, Finance Committee	Ongoing
Future Land Use			
Goal: To maintain the rural, small-town character and pristine environment, without placing undue burden on taxpayers.			
Policy	Strategy	Responsible Party	Timeline
Support the locations, types, scales, and intensities of land uses the community desires as stated in its vision.	Review and amend all ordinances and maps to ensure that they are current and conform with the Comprehensive Plan	Planning Board	2024 - 2025
	Consider an industrial-scale solar power ordinance.	Select Board, Planning Board	2024-2025
	Adopt a Commercial Site Plan Review	Planning Board, HCPC	2024-2025
	Define tools to protect natural resources and critical resource areas and review all ordinances	Select Board, Planning Board, Land Trusts, HCPC	2024 - 2025
Prepare for the effects of climate change	Consider the impacts of sea level rise on uses and setbacks	Planning Board, Community Resilience Committee	Concurrent with ordinance review

Establish an efficient permitting process	Provide support for the Code Enforcement Officer, including providing training, and participating in regional conversations about shared challenges and opportunities	Planning Board, HCPC	Ongoing
	Review permitting process and fees	Planning Board	2024 - 2025
Coordinate land use strategies with other local and regional land use planning efforts.	Work with neighboring towns to develop a regional land use plan.	Selectboard, Planning Board, Land Trusts, or HCPC	2024 - 2029
Track future development by type and location	Digitize Planning Board permits	Code Enforcement Officer, Planning Board, HCPC	Ongoing
	Investigate option for digitizing, and maintaining digitized, parcel maps.	Planning Board, HCPC	2024
Ensure the effective and efficient implementation of the Comprehensive Plan.	Periodically review and evaluate how the Strategies of the Comprehensive Plan have been put into practice	Planning Board, Code Enforcement Officer, Comprehensive Plan Committee	Every 2 years
	Solidify funding for capital improvement projects through mechanisms such as agent fees, grants, bonds, loans, and taxation.	Select Board, Finance Committee, HCPC	Ongoing
Protect critical waterfront areas.	Pursue opportunities to buy shorefront property	Select Board, Land Trusts	Ongoing

Regional Coordination Program

Local Government

The towns of Brooksville, Penobscot, and Sedgwick have entered into a non-binding agreement to promote and support the improvement of fish passage into the five major ponds that empty into the Bagaduce River. This has proven to be highly beneficial for the local alewife migrations that occur in May and for the passage of other species such as the American eel, sea lamprey, and sea run brook trout. Alewives and American eels are a critical forage species for marine, terrestrial, and avian species due to their huge number when migrating. Alewives also transport a freshwater mussel known as an alewife floater that improves water quality by filtering water as it feeds. As keystone species, alewives and American eels play a vital role in improving the marine and freshwater ecosystems.

Alewife harvesting is a heritage fishery that has a huge social impact on these three towns. A commercial fishery can provide a supplemental revenue stream for the towns through the sale of alewives as lobster bait. Penobscot is the only Bagaduce town that is allowed a limited commercial harvest while the fishery stocks are being rebuilt. Maine became a State in 1820 and Brooksville was granted the exclusive right to manage their alewife population in 1825. Penobscot followed in 1828.

Brooksville, Penobscot, and Sedgwick have formed what is known as the Three Town Alewife Committee that collects biological data, counts adult alewives entering these ponds, and collaborates to create a uniform policy regarding the management of the Bagaduce River alewife population. The Maine Center for Coastal Fisheries, located in Stonington, Maine, has been instrumental in organizing the group, collecting data, and supporting management / policy proposals at the State and Federal level.

The fish passage improvements would not have been accomplished without the assistance of the MCHT. The restoration project at Snow's Brook in Sedgwick combined resources from the Town of Sedgwick, Maine Department of Transportation, the National Oceanic and Atmospheric Administration, and MCHT. This project involved replacing a perched culvert that blocked fish passage, but the state-owned infrastructure was falling apart. This culvert is on State Route 15, which facilitates the transport of tens of millions of dollars of goods related to the lobster industry every year. The direct and indirect businesses that support the lobster fishery provide employment to people from the entire peninsula and beyond. A letter of support was provided by the Town of Penobscot and the Three Town Alewife Committee.

The Town of Penobscot has been fortunate to collaborate with MCHT and BHHT in efforts to conserve lands that are ecologically sensitive or are socially and culturally important to the residents of Penobscot. BHHT recently purchased 336 acres on the top of Wallamatogus Mountain where development would have changed the rural character of Penobscot forever. In 2022, a subsidiary of MCHT called the Conservation Limited Development, LLC purchased 192 acres of land in order to provide the Town with the necessary time to raise the funds to purchase the property. 142 acres were placed under conservation easement, which protected 1.7 miles of frontage on Winslow Stream; here anadromous fish such as eels and alewives gain access to Wight's Pond. Fifty developable acres of this parcel were not placed under easement to provide the Town with property for municipal needs in the future.

The Town participates in a quasi-municipal group known as Peninsula Tomorrow, which includes municipal officers from all nine peninsula communities as well as other local interested individuals. Originally formed to address energy efficiency, climate change, and sea level rise issues, the group has morphed into a community forum where common problems are identified and addressed on a regional scale. This group helped to facilitate the first ever convening of selectmen/town managers from all nine towns to discuss common issues and possible ways to benefit from economies of scale such as purchasing salt for winter road maintenance. Another issue that was brought forward was the impact of sea level rise on the Deer Isle causeway; this causeway is also located on Route 15 and is highly vulnerable to storm surge and sea level rise. As the only highway to the lobster industry on Deer Isle and Stonington, hundreds of families depend on crossing the causeway to earn a living. This group brought the peninsula communities together with MaineDOT and representatives from our State Congressional Delegation to discuss the future of the causeway.

Penobscot collaborates with the Town of Sedgwick with winter road maintenance on two small sections of road. Penobscot road crews would need to drive on a mile of Sedgwick's road to access a very short section of road that lies in Penobscot. Sedgwick is responsible for a short section of road that abuts Penobscot but there is no convenient turn around area. The agreement entails Penobscot plowing and sanding the short stretch of Sedgwick's road, and Sedgwick reciprocates by maintaining the short section of Penobscot's road.

The Town of Penobscot Fire Department has a mutual aid agreement in place with towns within Hancock County. When assistance is needed during an emergency, this agreement allows a town to request manpower or equipment from neighboring towns as needed. A response to a mutual aid request may leave a town understaffed in case of an emergency in

that town. Under the mutual aid agreement, a town that becomes shorthanded may request a neighboring town to provide manpower and equipment to standby in case of another emergency. This policy is known as station coverage.

The Town of Penobscot raises funds at the Annual Town Meeting to support the Peninsula Ambulance Corps, which provides service to the residents of Penobscot and many of the communities on the Blue Hill Peninsula.

Enrollment at the Penobscot Community School and the Brooksville Elementary School is so low that the two schools have combined athletes to form a co-ed soccer team, basketball, baseball, and softball teams. The Penobscot Tigers and the Brooksville Panthers have combined to form the PenBrook Wildcats. Penobscot and Castine have formed a Cross Country Club for runners in grades 5 – 8.

The school gym is also used for adult pickleball and basketball activities and is open to anyone that would like to participate.

Penobscot also raises funds at the Annual Town Meeting to support the local YMCA in Blue Hill, which provides multiple opportunities to promote a healthy lifestyle, social interaction, and recreational activities. Funds are also raised to support the Blue Hill Public Library, as Penobscot has no such facility.

The Town provides a space for the Magic Food Bus to distribute vegetables gleaned from local farms. The Magic Food Bus is a program offered by Healthy Peninsula, a local social service organization serving the nine towns on the Blue Hill Peninsula.

The towns of Blue Hill, Brooksville, Brooklin, Deer Isle, Penobscot, Sedgwick, and Stonington joined forces in 2018 to form the Peninsula Utility for Broadband working group to advocate for fast, flexible, affordable, and reliable internet to incentivize business, support schools, advance the quality of healthcare, connect homes, and facilitate long term education and socialization of our rural communities. In 2023, all nine peninsula towns were connected to high-speed internet via fiber optic cable provided by Fidium Fiber – a subsidiary of Consolidated Communications. Several newly arrived Penobscot residents indicated that their move to Penobscot was heavily influenced by the availability of high-speed internet, which allows them to telecommute.

The Town has an outstanding relationship with our neighboring communities.

Other Coordination with Regional Partners

Penobscot is a member of HCPC. The Town receives technical assistance on a variety of planning topics. This provides the town with a central location for regional coordination and integration with planning efforts by other towns in Hancock County, the Downeast Region and throughout the State of Maine.

DRAFT

Summary of Public Participation

From 2018 through 2023, throughout the process of drafting the Comprehensive Plan, the Penobscot Comprehensive Planning Committee (PCPC) has been fully attentive to engaging members of the community. Even during the shutdown caused by the COVID-19 pandemic, the committee engaged community members via Zoom, which enabled participation by committee members and others, and via the Town website.

Every PCPC Meeting has been open to the public, and a schedule is always posted with time and place for working meetings at the Town Office, the Northern Bay Market store, the School, the Town's Transfer Station, and the Town Website. PCPC also maintained a dedicated email address for the public to submit comments or ask questions.

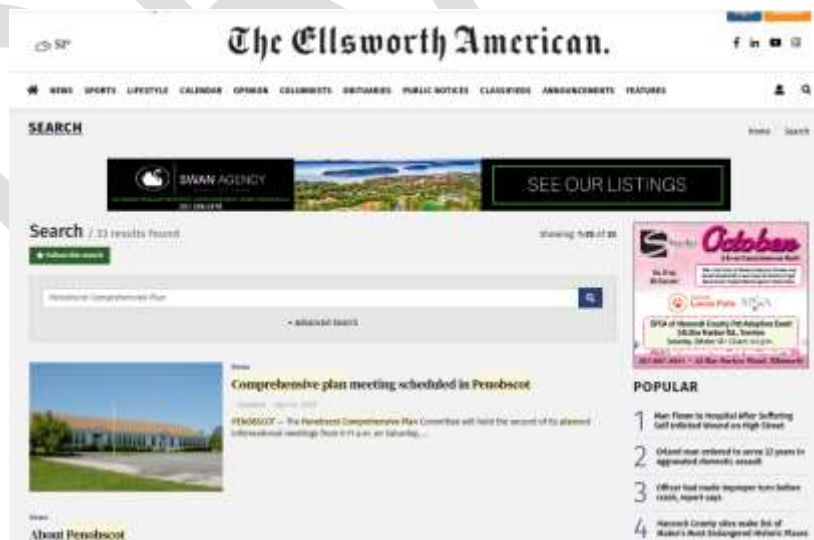
Since its inception, the PCPC has been meeting twice a month. However, as drafting intensified and deadlines approached, the PCPC has been meeting at least 3-4 times a month.

Summary of Engagement Activities

- January 2019: the PCPC introduced the Penobscot Comprehensive Informational Presentation to the community, at which time the public was told the PCPC's efforts to keep everyone informed would include posting information on posters, the Town Website, the local newspapers, through scheduling of events, and through email when possible.
- November 7, 2019 - Article in the Castine Patriot to update and announce the open house on November 21, 2019.
- November 21, 2019: Open house event at the school, which lasted 2 hours.
- July 1, 2022: Online public survey launched using Survey Monkey and paper copies were available at the Town Hall and Post Office. A Flyer announcing the survey (with link) was included with the 2022 tax bills to all taxpayers.



- July 9, 2022: Booth at the Historical Society for Penobscot Day. Six copies of the survey were handed out and several dozen flyers with a link to the online survey. The event lasted six hours.
- August 11, 2022: Article in the Castine Patriot announcing the survey.
- July 8, 2023: Booth at Historical Society for Penobscot Day, from 7 am to 1:30 pm. A poster board with 11 statements was presented and people indicated if they agreed or disagreed with the statements. There were 24 responses. A flyer that summarized the results of the 2022 survey was distributed and copies were made available at the Town Hall and the Post Office.
- August 17, 2023: Press releases in the Castine Patriot and the Ellsworth American announcing the upcoming Informational Meetings.



- August 2023: Advertisements placed in the Castine Patriot announcing the Informational Meetings to be held August 29 and September 30, 2023.
- August 29, 2023: Informational Meeting at the school (from 6 to 8 pm). 21 Town residents attended the meeting, not including committee members. Section summaries were presented for the vision statement: Water Resources, Natural Resources, Marine Resources, Economy, and Agriculture and Forestry Sections. A two-page handout was created for each section. The first page was a summary of key findings and issues, policies, and strategies to address issues, and a summary of survey responses to these issues. The second page asked respondents to indicate if they favored specific proposed strategies.¹²
- September 30, 2023: Informational Meeting at the school (from 9am to 11am). 12 Town residents attended – not including committee members. Section summaries were presented for History/Archeology, Recreation, Housing, Population and Demographics, Public Facilities, Fiscal Capacity, Transportation, Existing and Future Land Use. Handouts and processes are the same as above.¹³
- There will be additional public meetings in the winter of 2023-2024 with the goal of having a Town vote on whether to approve and adopt the Plan at the March 2024 Town meeting.

Public Opinion Survey

In July of 2022, the PCPC launched a Public Opinion Survey online and paper copies were made available at the Town Hall and Post Office. A flyer announcing the survey, including a link, was included with the 2022 tax bills to all taxpayers. The survey had a total of 129 responses.

¹² See <http://penobscotmaine.org/wp-content/uploads/2023/10/2023-Informational-Meeting-Materials.pdf> for the informational material that was shared with the public

¹³ See <http://penobscotmaine.org/wp-content/uploads/2023/10/2023-Informational-Meeting-Materials.pdf> for the informational material that was shared with the public