WASHINGTON COUNTY ME HAZARD MITIGATION PLAN
2024 REVISION

Washington County Emergency Management Agency 28 Center Street PO Box 297
Machias, Maine 04654

Contents

WASHINGTON COUNTY ME HAZARD MITIGATION PLAN -2024 UPDATE

SECTION 1 INTRODUCTION

Washington County Maine, decided to complete a multi-jurisdictional mitigation plan to include and incorporate each of its member towns, cities, plantations, unorganized territories, and its sovereign nation. This is because Washington County communities have limited populations, finances, and/or governmental structures. This combination of attributes makes it a challenge to contemplate and prepare adequate mitigation plans on an individual basis.

This county-wide mitigation planning effort encouraged agencies at all levels, residents, businesses, and the non-profit sector to participate in the mitigation planning and implementation process. This broader public participation enabled the development of mitigation measures that are supported by the various stakeholders and reflects the needs of the county-wide community. The Washington County Hazard Mitigation Planning Participants (WCHMPP) decided to review only natural hazards at this time. The Washington County Hazard Mitigation Plan includes the following sections:

Introduction
Plan Adoption
Planning Process
Risk Assessment
Mitigation Strategy
Plan Maintenance

Geography and Natural Resources

Washington County is bounded on the south by the Atlantic Ocean, on the east by the St. Croix River which forms the international boundary between the United States and Canada, on the north by Aroostook and Penobscot Counties, and on the west by Hancock County. It is the first area in the United States to see the sun rise every day. It is also one of the most remote areas of Maine.

Washington is a large county. It covers 3,258 square miles (2,563 square miles of land and 695 square miles of water, or 21%). The county is larger than the states of Delaware and Rhode Island combined. There are about 133,000 acres of lakes and ponds, numerous wetlands, and ten rivers that travel a total of 412 miles to the sea. The greatest rise and fall of tides on the shores of the continental United States occur along the Washington County coast. The tall pilings at Jonesport, Lubec and Eastport attest to tidal fluctuations averaging 18 feet but attaining as much as 28 feet at certain times of the year. Washington County grows more than 75% of the nation's wild blueberry crop and is the world's largest producer. The glacially formed "barrens," which consist of rolling plains of sandy soil, are ideal for raising wild, lowbush blueberries. The growing, harvesting and processing of blueberries is a major industry in Washington County. Nearly a quarter million acres of barrens yields an average of about 30 million pounds of blueberries annually, many of which are canned within the county.

History:

Washington County is the ancestral home of the Passamaquoddy Tribe. The Tribe used the **elaborate network of rivers, lakes, and portages to trade with other** Native American **tribes in New England, the Maritime Provinces of Canada, and beyond.** For millennia they **followed the seasons and the migration of the animals and fish. In the winter** they **lived in** small towns **deep forest to hunt the large game animals, in the spring** they **gathered** at fishing camps located **at the first waterfalls of the river system to catch the large runs of** alewives. **In the summer** moved to **coastal** villages **to gather shellfish and fish in the deep** ocean. In **the fall** they met the Atlantic salmon run then moved inland for the caribou rut**.** The region has had contact with Europeans since at least 1525 when Estavan Gomez, a Portuguese explorer visited the area. Portuguese ships visited occasionally to dry cod. French traders and trappers formed friendships with the Passamaquoddy Tribe.

The English first became acquainted with the area in 1633, when Richard Vines established a trading post for the Plymouth Company at what is now Machiasport.[6] The region was contested during the

Seven Year's War (French and Indian War). During the war, the 1762 drought created a scarcity of hay in the British community of Scarborough. Isaiah Foster, Isaac Larahee, and others from Scarborough visited the area in search of grass, finding a great quantity of it in the marshes. The presence of these salt grass marshes led quite a number of English persons to settle in the Machias area the following year and these eighty English settlers petitioned the General Court for a grant of this vicinity for settlement, which was allowed in 1770.

The first naval battle of the American Revolution was the Battle of Machias in 1775. During the battle, Americans seized the British schooner, the *Margarette*. The Passamaquoddy Tribe fought in the Revolutionary War on the side of the newly emerging "Americans" largely based on promises and assurances made by General George Washington in a 1777 letter.

Washington County was established on June 25, 1789, in conjunction with Hancock County. Originally Washington County stretched along the eastern border of New Brunswick all the way to the disputed northern boundary with Canada. Machias was established as the shiretown.

During the War of 1812 Fort O'Brien was occupied by British troops under Lieutenant-Colonel Andrew Pilkington. The county was returned to US sovereignty under the Treat of Ghent of 1817.

The county lost half its territory with the formation of Aroostook County in 1838.

Population

According to the 2020 Decennial Census, Washington County had a population of 31,095, which is considerably less than a small city (the City of Lewiston, ME, has 37,121 people). The population remains concentrated along the coast, reflecting still its maritime roots. The interior half of the county contains most of the county's Unorganized Territories and holds only about 1,200 people.

The county's population reached a peak of 45,232 people in 1900, then declined for many decades until about 1970, when it reached a low of 29,859 people. As shown in Table 1, there were increases between 1970 and 1980, and from 1980 to 1990, but between 2010 and 2020, the county's population declined by 1,761 people, or by about 36% over the last century and a quarter, as shown in Table 1. This census data, however, does not reflect changes that have occurred since the COVID-19 epidemic. The USDA notes a .4% net gain in populations in rural areas due to domestic migration. Anecdotal reports from community planning boards and community members support the idea this phenomenon is also occurring in Washington County.

Washington County is composed of two cities, 39 towns, three plantations and one Sovereign Nation. The largest community is Calais, with a population of 3,073. Most towns lost population between 2010 and 2020.[1]

Table 1 Population of Washington County and Maine

Year	Washington County	Maine
1900	45,232	694,466
1910	42,905	742,371
1920	41,709	768,014
1930	37,826	797,423
1940	37,767	847,226
1950	35,187	914,950
1960	32,908	970,689
1970	29,859	992,048
1980	34,963	1,124,660

[1] Note Washington County level data reflects the 2020 Census while the population breakout by community data is drawn from the American Community Survey 2022 data set, and thus is slightly different in terms of county population totals. Both reflect population loss in Washington County.

1990	35,308	1,227,928
2000	33,941	1,274,923
2010	32,856	1,328,361
2020	31,095	**1,362,359**
2010-20 change	-6%	2.5%

Source: U.S. Census

Table 2 Population Break Out by Community

Town/City	Year-Round Population and change from 2000 to 2010			2022 Median Age	2022 Density/ Sq. Mile	2022 Total Dwellings	2022 Year-Rd Dwellings	2022 Average HH Size
	2010	2022	2010-2022					
Addison	1,266	1,192	-74	54.7	28.1	750	524	2.3
Alexander	499	501	2	46.7	12.5	331	189	2.7
Baileyville	1,521	1,524	3	40.9	37.3	775	636	2.4
Baring Plt	251	226	-25	48.8	10.8	138	109	2.1
Beals	508	513	5	41.6	91.3	326	218	2.3
Beddington	50	21	-29	64.1	0.6	351	14	1.6
Calais	3,123	3,073	-50	49.9	89.7	1,813	1,595	1.8
Charlotte	332	409	77	45.1	13.2	237	173	2.4
Cherryfield	1,232	756	-471	55.8	17	557	356	2.1
Codyville Plt	24	17	-7		0.3	19	10	1.7
Columbia	486	566	80	39.9	15.6	295	207	2.8
Columbia Falls	560	398	-162	53.7	16.2	275	209	1.9
Cooper	154	155	1	51.3	5	178	82	1.9
Crawford	105	101	-4	62.4	2.9	133	51	2
Cutler	507	517	10	39.2	11	394	213	2.4
Danforth	589	636	47	51.7	11.8	565	299	2.1
Deblois	57	48	-9	29.5	1.3	57	19	2.5
Dennysville	342	191	-151	54.9	12.8	136	92	2.1
East Machias	1,368	1,364	-4	43.2	39	730	562	2.4
Eastport	1,331	1,211	-120	63.9	333.2	1,040	614	1.9
Grand Lake Stream Plt	109	171	62	71.6	3.9	273	102	1.7
Harrington	1,004	845	-159	47.4	40	652	352	2.3
Jonesboro	583	593	10	40.9	16.2	340	231	2.6
Jonesport	1,370	1,206	164	45.8	42.3	874	551	2.1
Lubec	1,359	1218	-141	67.9	571.3	376	196	1.5
Machias	2,221	2,015	-206	52.2	493	744	580	1.8
Machiasport	1,119	924	-195	47.9	43.2	658	382	2.2
Marshfield	518	487	-31	37.5	28.6	241	190	2.6
Meddybemps	157	116	-41	51.3	8.8	178	82	1.9
Milbridge	1,353	1,369	16	49.1	56.5	904	542	2.4
Northfield	148	315	167	41.9	7.2	325	136	2.3
Pembroke	840	915	75	44.3	33.4	546	382	2.4

Perry	889	746	-143	42.7	25.5	504	302	2.5
Princeton	832	769	-63	41.2	21	467	350	2.2
Robbinston	574	626	52	49.8	22.2	348	230	2.5
Roque Bluffs	303	367	64	54.5	35.3	267	134	2.7
Steuben	1,131	1,248	117	45.9	29	872	514	2.4
Talmadge	64	45	-19	44.8	1.2	20	17	2.7
Topsfield	237	210	-27	59.5	4.2	191	107	2
Vanceboro	140	154	14	58.3	7.6	149	86	1.8
Waite	101	52	-49	54	1.2	54	25	2.1
Wesley	98	185	87	56.5	3.7	178	80	2.3
Whiting	487	528	41	49.8	11.3	424	237	2.2
Whitneyville	220	175	-45	39.3	11.8	94	60	2.9
Unorganized	1,227	1,175	-52	49.4	1	1,445	477	2.3
Sovereign Nation								
Indian Township	676	657	-19	28.5	17.5	278	239	2.7
Pleasant Point	640	578	-62	39.7	1,023.00	239	213	2.7
Washington Co.	**32,828**	**31108**	-1720	**48.8913043**	**70.4148936**	**20,741**	**12,969**	**2.23829787**

Source: ACS 2022

Demographics

Table 3

Demographic Characteristics of Washington County Maine, US

Measure	2022 Washington County	2022 Maine	2022 USA
Population			
Total Population	31096	1385340	333,287,550
% White	88	91	59
% Black	1	2	12
% Native American	5	0	1
% Asian	0	1	6
% Hispanic	3	2	19
Households			
Total Households	**13585**	**580,172**	**125,736,350**
Avg. Household size	2.3	**2.3**	**2.6**
Income			
Median Household income ($)	$51,669	**$68,251**	**$75, 149**
Persons below poverty line %	17.5	**10.9**	**12.5**
Sex and Age			

Median Age Total Population	48.6	**44.8**	**38.1**
% Female	51	**51**	**50**
% Male	49	**49**	**50**
% 18 and under	19	**18**	**22**
% 18-64 years and over	56	**60**	**61**
% 65 years and over	25	**21**	**17**
Population density (sq. mi.)	12.1		

Tourism and Recreation

Washington County experiences large seasonal changes in its population in the summer and fall months. Tourism is a large revenue producer, with numerous high-value seasonal homes clustered along the coast and more modest camps sited along the county's many lakes and five major rivers. Tourists looking for a more isolated, 'real Maine" experience travel north up Route 1 from Acadia to hike, bike, fish, ATV, and paddle. Fall foliage and hunting extend the tourist season into late fall. As shown on Table 2, there are 8 towns and the unorganized territories in which more than 50% of the total homes are seasonal.

Employment and Income

From 2021 to 2022, employment in Washington County, ME grew at a rate of 2.3% from 12.5k employees to 12.7k employees. The most common employment sectors for those who live in Washington County, ME, are Health Care & Social Assistance (2,177 people), Educational Services (1,515 people), and Retail Trade (1,506 people). This chart shows the share breakdown of the primary industries for residents of Washington County, ME, though some of these residents may live in Washington County, ME and work somewhere else. Local government (1,814), health care and social assistance (1,671), retail trade (1,649) and manufacturing (1,093).

Based on the Maine Department of Labor, the county's largest employers, by rank order, are shown in Table 3:

Table 3
Washington County's Largest Employers

	Employer	**Employment Range**	**Business Description**
1	Woodland Pulp LLC	1 to 500	Pulp mills
2	Downeast Community Hospital	1 to 500	General medical and surgical hospitals
3	Wal Mart/Sam's Club	1 to 500	Warehouse clubs and supercenters
4	Calais Regional Hospital	1 to 500	General medical and surgical hospitals
5	Fusion Medical Staffing LLC	1 to 500	Offices of all other miscellaneous Health Practitioners
6	Machias Savings Bank	1 to 500	Savings institutions
7	Hannaford Bros Co LLC	1 to 500	supermarkets and other grocery retailers
8	Jasper Wyman & Son Inc.	1 to 500	Frozen fruit and vegetable manufacturing
9	St. Croix Tissue Inc	1 to 500	Paper Mills
10	Magnolia Assisted Living	1 to 500	Assisted Living Facilities for the Elderly

Source: Maine Department of Labor
In 2022, the median household income of the 13.6k households in Washington County, ME grew to$51.669 from the previous year's value of $46,689. While salaries are up,17.5% of the population of Washington County, ME (5.28k out of 30.1k people) lives below the poverty line. This is 40% higher than the national average of 12.5%. The largest demographic living in poverty are Males 55 - 64, followed by Females 55 - 64 and then Females 35 - 44. The most common racial or ethnic group living below the poverty line in Washington County, ME is White, followed by Native Americans.[2]

Economic development agencies.
Based on information obtained from the Washington County website, there are several entities whose mission is, in part, to promote economic development in Washington County. These include:

Cobscook Bay Area Chamber of Commerce
Downeast Business Alliance
Eastport Area Chamber of Commerce
Machias Bay Area Chamber of Commerce
Maine Career Center
Milbridge Merchants Association
Northern Maine Development Commission St.
Croix Valley Chamber of Commerce
Sunrise County Economic Council
Washington County Cooperative Extension
Washington County Council of Governments
Washington County Development Authority'
Washington County One Community Women's
Business Center at CEI
Women, Work & Community

County Government

The Washington County seat is in Machias, Maine. Washington County is structured in the same ways as county governments in other parts of the state. The County consists of County Commissioners, County Sherriff's Department, County Jail, County Administrator's Office, County Treasurer, Registrar of Deeds, Registrar of Probate, District Attorney, and the Emergency Management Agency. There are three County Commissioners overseeing the operations of the county government including the courts, sheriff, corrections, registry of deeds and emergency management. Maine operates under a "home rule" statute which provides its municipalities with a great deal of autonomy. There are two Tribal Governments, two cities, 39 towns and 3 plantations in Washington County as well as 34 unorganized townships within the Unorganized Territory that are governed by the State of Maine. These municipalities are responsible for tax collection, road maintenance, snow removal, refuse collection, land use planning, code enforcement, animal control, fire protection, and cemetery maintenance.

Local Units of Government

The structure and function of the local town governments are somewhat unique to Maine. It has been shaped by governments in its parent, Massachusetts, and has been further modified to reflect its population density. In Washington County, there are several different kinds of government The following summary is based in part on the Maine Municipal Association's report "Local Government in Maine."

[2] Data from the Census Bureau ACS 5-year Estimate

Cities. There are two cities in Washington County – Eastport and Calais. All cities in Maine have local charters granted by the Maine Legislature that provide for a representative form of government - meaning they have a city council that serves as the legislative body. The city council is elected by and is answerable to the citizens. The office of mayor varies considerably from city to city, with only a few acting as chief executive officer. Some mayors are elected by the vote of the people, while others are elected by a vote of their fellow councilors. Calais has a mayor; Eastport does not.

Towns There are 39 incorporated towns in Washington County. Towns remain the cornerstone of local government. A Maine community becomes a town when it is incorporated by a special act of the legislature. At that time, it is given certain privileges and responsibilities. Under Home Rule, towns may take any action or change their form of government in any way not denied or precluded by state or federal law. The voters of the town constitute its legislative body. Day-to-day governance of towns has expanded from the original board of selectmen to include town managers, town councils, budget committees, municipal departments, and various professional managers. In a small number of mostly larger towns, the council exerts legislative control without a town meeting. In others, a ballot vote is used to approve the budget rather than the open town meeting.

Plantations. There are 3 organized plantations in Washington County – Baring Plantation, Codyville Plantation, and Grand Lake Stream Plantation. Plantations are a type of local government unique to Maine. They originated with the Massachusetts Bay Colony and were at first intended to be a temporary government to help guide a community in changing from an unincorporated township to an incorporated town. In Maine, they have continued as a basic governmental unit in small rural areas. Plantations are typically rural, heavily forested, and sparsely populated. There is little demand in them for the full menu of public services provided in larger communities. Plantations are like towns in that voters at the annual meeting are the legislative body. During the meeting, assessors are elected to carry on the daily operation of government and function much as the selectmen in towns. Taxes are raised and appropriated and voters are registered. **Plantations do not have the powers granted to municipalities under Home Rule, and do not have the authority to enact ordinances.**

Townships/Unorganized Territory (UT). Maine is unique among eastern states in having half its land mass, or more than 10 million acres, in an Unorganized Territory. Most of it is in the northern and easternmost counties. There is no local, incorporated municipal government. Provision of services and property tax administration for the Unorganized Territory is shared among various state, county, and local agencies. Law enforcement and public road maintenance is the responsibility. Taxes are paid to the State Property Tax division. The State's Land Use Planning Commission (LUPC) establishes basic rules for land use and development. There are 34 townships in Washington County's portion of the Unorganized Territory. In the year 2010, there were 1,227 year-round residents living in the Unorganized Territory.

Sovereign Nation. The one sovereign nation in Washington County is the Passamaquoddy Tribe. Native American tribes have their own form of government with sovereign powers that are separate from federal and state governments. According to Felix Cohen's *Handbook of Federal Indian Law*, tribal sovereignty is described:

> "…as a consequence of the tribe's relationship with the federal government, tribal powers of self-government are limited by federal statutes, by the terms of the treaties with the federal government, and by restraints implicit in the protectorate relationship itself. In all other respects the tribes remain independent and self-governing political communities."

Title 30 M.R.S.A. Section 6206(1) provides:

> Except as otherwise provided in this Act, the Passamaquoddy Tribe…, within their respective Indian territories, shall have, exercise and enjoy all the rights, privileges, powers and immunities, including, but without limitation, the power to enact ordinances and collect taxes, and shall be subject to all the duties, obligations, liabilities and limitations of a municipality of and subject to the laws of the State, provided, however, that internal tribal matters, including membership in the respective tribe or nation, the right to reside within the respective Indian territories, tribal organization, tribal government, tribal

elections and the use or disposition of settlement fund income shall not be subject to regulation by the State.

The Maine Implementing Act also grants to the Passamaquoddy Tribe the constitutional status of a municipality under Maine law.

Washington County's Tribal Partners were invited to participate in this hazard mitigation plan update but choose not to do so.

A map of the towns, plantations, sovereign nation, and the Unorganized Territory is shown below.

SECTION 2 PLAN ADOPTION

Multi-Jurisdictional Plan Adoption	
Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.	
Elements	A. Does the new or updated plan indicate the specific jurisdictions represented in the plan?

	B. For each jurisdiction, has the local governing body adopted (the) new or updated plan?
	C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?

This plan is a multi-jurisdiction plan. Municipalities that participated in the preparation of this plan include:

Tribal Governments
Pleasant Point Passamaquoddy Tribe

Cities

Calais
Eastport

Towns

Addison
Alexander
Baileyville
Beals
Charlotte
Columbia
Cutler
Danforth
Deblois
Dennysville
East Machias
Jonesport
Lubec
Machias
Meddybemps
Milbridge
Northfield
Pembroke
Robbinston
Roque Bluffs
Steuben
Waite
Whitneyville

Unorganized Territories
Berry Township
Township 11

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A copy of the resolution that will be adopted by each participating jurisdiction is shown on the next page. Washington County will adopt the resolution on behalf of the Unorganized Territory.

RESOLUTION

Whereas, natural and man-made disasters may occur at any time, we recognize that to lessen the impacts of these disasters we will save resources, property, and lives in Washington County.

And whereas the creation of a Multi-Jurisdictional Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy.

And whereas, the two Tribal Governments are committed to the mitigation goals and measures as presented in this plan.

And whereas, the 39 towns, the Cities of Calais and Eastport, and the three plantations are committed to the mitigation goals and measures as presented in this plan.

And whereas, the Washington County Commissioners, acting on behalf of the county and the portion of the Unorganized Territory within its boundaries, are committed to the mitigation goals and measures as presented in this plan.

Therefore, the Tribal Governments of Indian Township and Pleasant Point, hereby adopt the Washington County Hazard Mitigation Plan – 2024Update; and

Therefore, the Calais and Eastport City Councils, the Assessors of the three plantations, and the Boards of Selectmen of the 39 incorporated towns hereby adopt the Washington County Hazard Mitigation Plan – 2024 Update: and

Therefore, the Washington County Commissioners, acting on behalf of the county and the portion of the Unorganized Territory within its boundaries, hereby adopt the Washington County Hazard Mitigation Plan – 2018 Update.

AUTHORIZING SIGNATURES

Sovereign Nation – Passamaquoddy Tribal Government Pleasant Point

_____	_____
Printed Name	Signature
_____	_____
Position	Date
_____	_____
Printed Name	Signature
_____	_____

Position Date

Printed Name Signature

Position Date

Printed Name Signature

Position Date

Sovereign Nation – Passamaquoddy Tribal Government Indian Township

Printed Name Signature

Position Date

Printed Name Signature

Position Date

Printed Name Signature

Position Date

Printed Name Signature

Position Date

City/Town/Plantation of _____

_____ _____
Printed Name Signature

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Washington County
Commissioners

Printed Name	Signature
Position	Date
Printed Name	Signature
Position	Date
Printed Name	Signature
Position	Date

SECTION 3 PLANNING PROCESS

Planning Process	
Requirement §201.6(b)(1): (The planning process shall include) an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.	
Element	A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?
Element	A3. Does the plan document how the public was involved in the planning process during the drafting stage?

Throughout this Plan, the terms "community, jurisdiction" and "municipality" are used interchangeably. Each is understood to include cities, towns, sovereign nations plantations or Unorganized Territory. All meetings conducted in support of the Plan Update were made open to the public audience in addition to town officials and Planning Team members.

The Washington County Hazard Mitigation Plan - 2024 Update was a multi-jurisdictional collaborative effort. The Hazard Mitigation Planning Team sought participation through town mailings, surveys, planning meetings, field visits to potential project sites, postings on the Washington County EMA website, emails, social media, and phone calls.

Participants at various meetings discussed county-wide and town-specific hazards and the probability and vulnerability of certain hazards. Groups also reviewed mitigation projects from the 2018 plan as well as new projects that have been added for the 2024 update and discussed any additional projects that were not already identified. Additional participation was solicited through phone and email correspondence and the Public Review and Comment session for any recommendations/comments.

The Planning Team provided expertise, data, and assistance in updating the plan. The Hazard Mitigation Planning Team consisted of the following:

Table 4 **Washington County Planning Team**	
Lisa Hanscom	Director, Washington County Emergency Management Agency
Christine Day,	Deputy EMA Director
Tanya Rucosky	Consultant
Tora Johnson	Consultant
Heron Weston	Consultant
Heather Dumias	Maine Emergency Management Agency (MEMA)

Participating jurisdictions were involved in various parts of the planning process, including but not limited to meeting participation, commenting on plan drafts, vulnerability assessments, mitigation actions/strategies, identifying changes in development where relevant, providing examples of plan integration where possible, and other plan maintenance efforts. Town representatives directly participated in the plan but also communicated Plan Update details to other town officials to ensure the whole community was aware of and could contribute to important new details. Below is a list of official participants representing each jurisdiction.

Table 5 **Participating Jurisdictions, Representatives and Titles**		
Town	Representative	Title

Addison	Marcus Norton William Coney	Road Commissioner Addison Emergency Management Deputy
Alexander		Roads Commissioner
Baileyville	Chris Loughlin Brandan Ireland	Town Manager Emergency Management Director
Beals Island	Paul McCormick Raymond Alley Richard Smith James Kelley Jason Faulkingham Terry Beal Ray Beal Nancy Beal Kevin Beal, Marvin Kelley Glenda Beal Lorena Faulkingham Danny Davis	Harbor Master Harbor Committee Member Harbor Committee Member Harbor Committee Member Harbor Master Planning Board Planning Board Planning Board Shellfish Committee Shellfish Committee Selectboard Chair Selectboard Secretary Selectboard
Calais	Mike Ellis	City Manager
Charlotte		Selectboard
Columbia	Joan Champney	Deputy Town Clerk and Planning Board Chair
Culter	Cynthia Rowden Kimberly Davis David Glidden	Selectperson Selectperson Selectperson
East Machias	Tanya Wilder	Administrative Assistant
Jonesport	Irene Rogers	Assistant to Selectboard
Lubec	Suzette Francis Richard Huntley	Town Administrator Road Manager
Machias	Bill Kitchen	Town Manager
Machiasport	Marcia Hayward	Town Clerk
Milbridge	John Chipman	Harbor Master
Northfield	Amanda Manship Lis Patryn Ann Grange	Town Clerk Select Person Select Person
Robbinston	Tom Moholland	1st Select Person
Roque Bluffs	Philip Pinto	Select Person
Steuben	Julie Ginn	Town Administrator
Waite	Tim Crowe	Select Person
Whitneyville	Nathan Pennell	Select Person

Hazard Mitigation Outreach Efforts

Hazard Mitigation Survey. April 23, 2024. In 2024, Washington County EMA distributed a survey to its communities, asking about specific areas subject to severe winter storms, flooding, severe summer storms, and wildfire as well as "other" concerns they might have. Paper community surveys were distributed to all the communities in Washington County. The community survey was also made available on-line. Community members were directed to the on-line survey through the Washington County Emergency Management Facebook page. Through these methods, 64 surveys were submitted, some representing not just individuals but instead formal and informal sub-community groups such as road associations. Survey responses and their respective communities, included:

Table 6 Community Identified Concerns

Community	Concerns	Mitigation Actions
Addison	Coastal erosion has increased tremendously in the past 2 years	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	More windstorms	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement
	Lack of access to medical care and resources	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Road conditions throughout the area are poor.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement
	Flooding on low lying areas has increased.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Erosion along Pleasant River	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Flooding and sea ice on East Side Rd	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	More coastal flooding	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Flooding Basin Rd. at Hicks Creek	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	New people unaware of where floods occur	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)

	Need landscape scale wetland (salt marsh) protection and salt marsh migration planning	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Town office is vulnerable to flooding	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	During the storms in late 2023 and early 2024 has caused much damage to the trees in the forest and on the waterfront. There are few contractors available to clean up the downed trees and damaged forest area. This could lead to a risk of increased forest fires around homes.	
	The aging population are less able to manage the challenges identified above either because of lack of financial resources or physical ability to take care of the clean-up	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
Baileyville	Wildfires	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
	Pulp Mill incident	Coordinator with mill emergency manager
	Failing culverts	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Wind damage	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
Beals Island	Alley Bay Rd. Flooding More often, hazardous to drive on because of erosion, needs stone barrier to be replaced.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Aging Community	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Weather- increasing storm severity	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions

	Failing Infrastructure- roads and piers are now too low for rising sea levels	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Road has been washed away along Bayview Dr. (particularly The Cove). Erosion of berm near Flying Place.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Taxes putting pressure on elderly and fishing families	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
	Beals Island Bridge was damaged and needs repairs	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Berry Township	Ice and strong winds.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Lost many trees and electrical lines.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
Calias	Aging population	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Wharf needs repairs	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	High winds with lots of tree damage	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Charlotte	Road conditions should be a high priority. The back roads are a hazard and costly to the residents for vehicle repairs, leading to unsafe uninspected vehicles. Roads have been damaged by all the rain and not enough structure under the tar.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Columbia	Dry wells	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Strong winds/ more trees down	create list of potential flood areas

Cutler	Loss of electricity during storms	Need to be checking in with neighbors to see if they need food or heat
	More summer residents, visitors, and traffic in general.	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
	Heavier rain and the road infrastructure is poor.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Flooding in the nearby harbor	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Hotter	
	Water wells are at risk from developers filling in wetland areas.	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
	No food stores in town.	Other (please specify): Cutler needs a community center building
	High winds have done extensive damage to structures on and near the harbor's ocean water.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	No medical facilities in town.	Other (please specify): Cutler needs a community center building
	Many of the structures on the water need to be raised such as wharfs. Many of the structures on the water need to be raised such as wharfs.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Harbor area is being flooded	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration) Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions

	Cove Rd. Bridge is losing its foundation as well as being over topped	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration) Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions
	Aging population	Need to be checking in with neighbors to see if they need food or heat
	Floods	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Strong winds/ more trees down	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	High surf	Lobstermen putting heavy bait and anchors on the wharfs helped hold them down and saved damage, but water was going over the decks.
	Train hauling hazardous materials- potential spills, collisions, forest fires-- trains seem to be hauling heavier loads. There have already been accidents at the Eaton Crossing as there is heavy truck traffic and the tracks are at the bottom of the hill. If town crossing is blocked-- half the town is cut off from services.	Recommend lights at the top of the hill.
	School bus stop in the middle of hill which is dangerous with truck traffic	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Aging Population/people with medical needs-- vulnerable when electricity fails	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Intersection of Rt. 1 and Rt 169 is dangerous. Truck traffic accidents have happened here. A truck that loses its breaks here has no way to make the corner	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Increased storms-- storm water system on Main St. is failing	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)

	Bancroft Rd follows the river, prone to flooding.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	The river runs right through the town, so that could be deemed a flooding hazard.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Greenland cove Rd floods at Greenland Brook. Largest population of citizens in Greenland Cove – if brook culvert system fails there is no way to get them out of that area.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Dead end roads and wind could cause problems for people living there if we have high winds and trees fall down. There is no way to get them out. -- culvert washouts	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	surrounded by forest, so any invasive species that would affect the trees/forest could be an issue.	Invasive species management planning
	Forest fires	Forest fire management planning
Deblois	Wildfire risk is increasing.	Assistance for homeowners clearing brush near homes
	Population is aging.	
	Storms seem stronger.	
	High winds bringing trees down.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Washouts on major and minor roads.	Culvert upgrades
Dennysville	Flooding on Shipyard, Milwaukee, and Smithridge Rds. caused by beaver dams and undersized culverts	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Erosion along Dennys Riverbanks.	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
East Machias	High winds/tree damage and because of the heavy forest with many trees down.	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	The roads and trails need to be repaired	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement
	Wildfires	Management for wildfires Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Pandemics	Pandemic planning Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)

Eastport	Violent storms, and higher winds on a regular basis	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restriction)
	wind damage to roofs	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restriction)
	Erosion on toll bridge	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement). Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	2023/24 winter storms have shown additional areas susceptible to flooding due to coastal surge and runoff from heavy precipitation. In addition, the intense winds from a unique direction (south) compared to the "normal" winter storms (NE) resulted in damages and high wave impacts not normally observed.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement). Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Aging infrastructure.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
Jonesport	Our community is aging	
	Richarson Cemetery has eroded badly	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	High winds and flooding damaging coastline	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Since 2020 there has been an influx of out of staters purchasing properties	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Washout" several properties in "downtown" Jonesport	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	The seawall on Chandler Bay sustained major damage with the seawall being washed out which led to up to 8ft of land being eroded along the property frontage in at least	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration

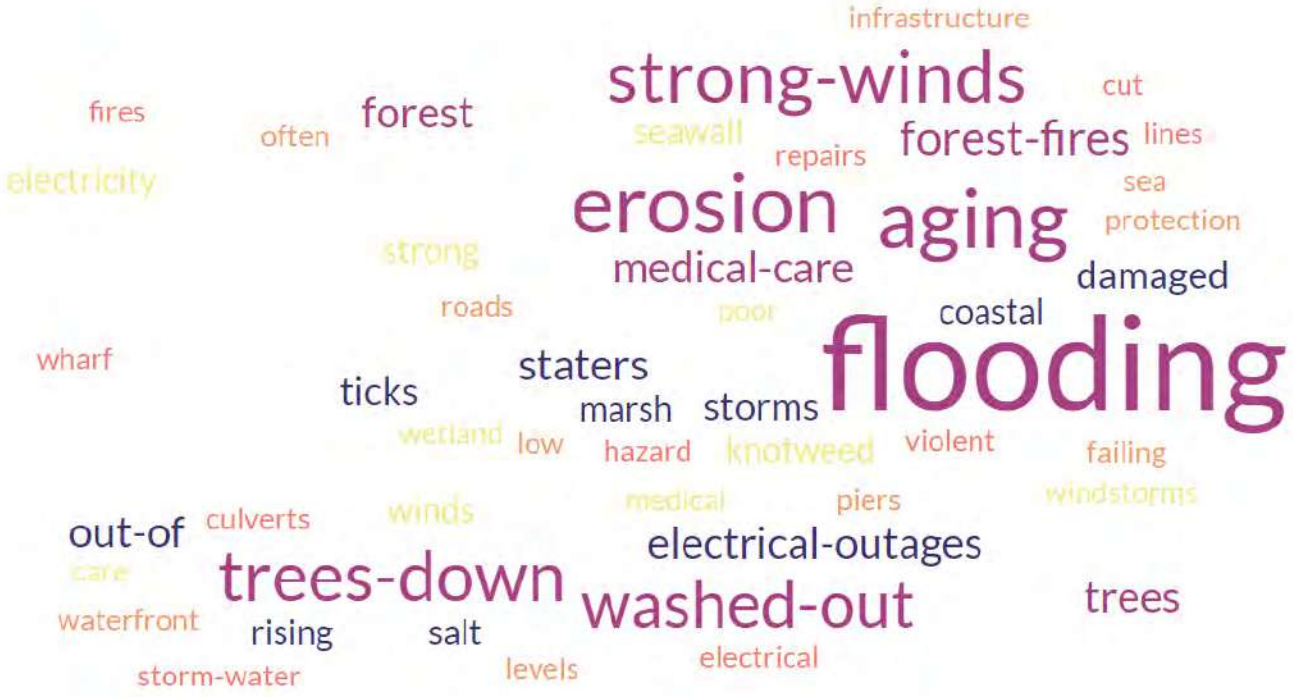
	4 places.	
Lubec	Higher wind	
	Flooding washouts- south of Rt. 189 along Pleasant St. is on low ground and surrounded by marsh-- this road is falling apart and there is nowhere for water to go	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration
	Rising tides	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration
	higher winds	
	Erosion at carrying Place Cove beach	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration
	aging population	
	S. Lubec Rd as it goes out to West Quoddy is sinking-- the bog the road is sitting on is sinking.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Lack of emergency services	
	Flooded basements	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
Machias	Downtown Flooding	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Medybemps	Main roads blocked by trees by high winds from recent storms preventing emergency access. Multiple days long power outages from the same reasons and limited outside resources sent to our town to assist in the cleanup efforts. Town roads have been washed out multiple times.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Milbridge	Ficketts point shoreline and back bay shoreline are being eroded	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Kansas Rd by marsh is subject to flooding	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Bayview St. Floods during winter storms and is undermined	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)

	Intersection of Rt 1 and Wyman Rd by Wyman office floods	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Devastating loss of personal properties from December-January-March storms;	Can the DEP application review process for mitigation be speeded up? Hurricane season & winter storms will be upon us before we can secure our bank against further erosion!
	Changes in the seasons' weather and temperatures in general	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Many hazardous conditions community-wide, and impact on fishing industry.	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Lost about 2 feet of windward bank to erosion on Fickets Point Rd.	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Extensive tree damage	
	Large detritus on beach,	
	Loss of walking trails	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	No adequate facilities or assistance for the aging population, which is now a large percentage of our local population	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Entire access to our Fickets Point needs to be rebuilt.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
Pembroke	Aging Population	Develop a phone tree to ensure our aging population is safe after storms. It would be a minimal cost and would encourage engagement in the community. Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Fallen and hanging trees due to wind, erosion on roadways causing repeated power outages over the last year.	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Multiple Trees down	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration) Cutting hanging tree branches

	Need a community center where people can charge phones and to assist those on oxygen	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions) Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Threats from companies seeking to strip mine or install tidal generators.	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Huge swathes of Japanese knotweed, especially around front and middle streets.	Other (please specify): Program to remove knotweed.
	Over harvesting of rockweed.	
Roque Bluffs	Aging population	
	More Trees down	Wildfire management plan
	Beach washed out	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Shoppe Point Rd. undermined from flooding	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Since 2020 there has been an influx of out of staters purchasing properties	Education and Awareness Programs (e.g., sending out information on flood mitigation opportunities for homeowners with their tax bills, having a discussion at Town Annual Meeting on town mitigation actions)
	Wildfires- fire lanes	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)
	Loss of shoreline, and stabilizing rip rap-- incl Johnson Cove Beach	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Strong winds and ice storms causing downed power lines/ blocked roads	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	System of emergency warning esp. as town does not have good internet	Local Plans and Regulations (e.g., adoption of River Corridor bylaws, updating your town plan to better integrate with the Hazard Mitigation Plan, zoning restrictions)

	Cow Point will need a bridge soon because of regular flooding	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Johnson Cove Bridge and park-flooding	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement)
	Extreme weather and the lack of forest maintenance means many more power outages. Everyone needs a generator these days, which is quite alarming since it shows how vulnerable the electricity grid is to extreme events.	
	There are more deer and ticks than there were previously, resulting in more medical care to tackle Lyme and other tick-borne diseases.	
	New bridge on Johnson Cove Road has also changed the configuration of Englishman's River and the tides in the intertidal zone and beach are higher, making the banks more susceptible to erosion.	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Erosion under pilings on Johnson Cove Rd/	Structure and Infrastructure Projects (e.g., culvert upsizing, bridge replacement) Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
Steuben	Rising tides	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Storm loss 3-6' of shoreline	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
	Vast knotweed infestations	Other (please specify): Knotweed eradication
Township 11 Schoodic Lake	Loss of beach	Other (please specify): Beaver dams in the outlet need to be removed so water can flow. Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)
Whitneyville	Loss of land on Dan Mahearn Brook	Natural Systems Protection (e.g., streambank, beach, or coastal bluffs restoration)

Community concern centered around the intersection of flooding, power outages and the county's aging community members. This word cloud from community responses depicts concerns across all communities.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January 2024 Working Waterfront Damage Reports: Prior to the official kick off of the plan update, a large-scale community engagement effort occurred through Sunrise County Economic Council to document the damage which occurred during the federally declared disaster from the January 2024 Severe Storms. Town representatives from Milbridge, Addison, Beals Island, Jonesboro, Roque Bluffs, Machiasport, Cutler, Lubec, and Pembroke all took part in these damage reports.

Table 7
January 2024 Damage Reports

Town/Organization	Representative	Title
Milbridge	John Chipman	Harbor Master
Lubec	Ralph Dennison	
Addison	Marcus Norton	Road Commissioner
Pembroke	Anthony Bennett	Select person
Cutler	Tora Johnson	
Machiasport	David Cale	Harbor Master
Jonesboro		
Beals Island	Paul McCormick,	Harbor Master
Milbridge	John Chipman	Harbor Master
Roque Bluffs	Philip Pinto	Select Person

Kick-off Meeting, April 10, 2024. To promote public participation, a hybrid in person and virtual meeting was held in Machis at 6:00 p.m. on April 10.

Lisa Hanscom, Washington County EMA Director, opened the meeting and welcomed everyone in attendance. She stated that work is now underway on updating the 2018 Washington County Hazard Mitigation Plan.

Lisa Hanscom and members of the planning team provided an overview of in the contents of the current plan and stressed the importance of community involvement in the planning process of re-prioritizing their lists of local projects. They discussed the Hazard Mitigation Plan Update process, and profiled hazards communities should consider. The meeting and the list of participants and their respective communities are found in Table 7

Table 8
Kick-off Meeting Attendees
April 10, 2024, 6:00 p.m.
Machias, Maine

Town/Organization	Representative	Title
Washington County EMA	Lisa Hanscom	Director
Sunrise County Economic Council	Tanya Rucosky	Community Resilience Coordinator
Baileyville	Brandon Ireland	
	William Lee	
Columbia	Joanne Champney	Town Clerk
Jonesboro	Steve Dunham	
	Linda Beal	
East Machias	Jean Savard	
Northfield	Lis Patryn	Select person
Sunrise County Economic Council	Tora Johnson	Sustainable Prosperity Initiative Director

Beals	Glenda Beal	Select person
	Michael Gray	
Danforth	Ardis Brown,	Town Manager
	Laura Jackson	

Planning Meetings: A number of planning meetings were held in the towns for community members to attend and provide feedback to the municipal survey. Meetings were held at several community events including planning board meetings. People in attendance at these meetings included the following:

Planning Meetings	
Name	**Town**
Kenneth Colson	Alexander
David Sandord	Alexander
Foster Carloq	Alexander
Larry Hill	Alexander
Carl Oakes	Alexander
David Davis	Alexander
Kristy Drawford	Alexander
Kimberly Davis	Culter
Jim Glidden	Culter
Cynthia Rowden	Culter
David Glidden	Culter
Glenda Beal	Beals
Lorena Faulkingham	Beals
Daniel F. Davis	Beals
Raymond Alley	Beals
Kevin Beal	Beals
Donna Bunker	Beals
Terry Beal	Beals
Ray Beal	Beals
Adam R. Merchant	Beals
Nancy Beal	Beals
Richard Smith	Beals
Tora Mozdziez	Danforth
Natasha Potter	Danforth
Marc Crone	Danforth
Trevor Noyes	Danforth
David Apger	Danforth
Ardis Brown	Danforth
Alan Burdick	Roque Bluffs
Michelle Burdick	Roque Bluffs
Leslie McCollum	Roque Bluffs
Bob McCullum	Roque Bluffs
Lisa Hanscom	Roque Bluffs
Joe Thompson	Roque Bluffs
Ernie Libby	Roque Bluffs
Russell Manchester	Roque Bluffs

Ricky Harmon	Roque Bluffs
Carla Harmon	Roque Bluffs
Tara LiBrizzi	Roque Bluffs
Cyndy Rogers	Roque Bluffs
Stephen Rogers	Roque Bluffs
Roger Mulanax	Roque Bluffs
Philip Pinto	Roque Bluffs
Stuart Pratt	Roque Bluffs
Ron Rutledge	Roque Bluffs
Vivien Crea	Roque Bluffs
Rebecca Paine	Roque Bluffs
Gene Covey	Roque Bluffs
Joe Finnemore	Roque Bluffs
Michael Couto	Roque Bluffs
David Dowley	Roque Bluffs
Carol Dowley	Roque Bluffs
Gary Moorehead	Roque Bluffs

EMA Municipal Meetings

Public Comment and Review Session

This section will be filled out after the public comment and review session is held on February 12, 2025.

Since this is a multi-jurisdictional plan, and multiple towns were present in the meetings, there was ample opportunity for neighboring jurisdictions, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process. Additional opportunities were provided in the form of county e-mails, town mailings and the public comment and review session held on February 12, 2025, and the availability of the draft Washington County ME Hazard Mitigation Plan-2024 on the EMA website.

Summary of Local Participation

The following table documents how each jurisdiction participated in the preparation of this plan.

Jurisdiction	Survey	Planning Meetings	Projects in Plan Verified by	Emails Re: Plan Update
Addison	x		Emergency Management Deputy	x
Alexander	x	x	Road Commissioners and Roads Supervisor	x
Baileyville	x		Town manager and Emergency Management Director	x
Beals	x	x	Select board member	x
Calais	x		City Manger	x
Charlotte			Select board member	x
Columbia	x		Deputy Town Clear/ Planning Board Chairperson	x
Cutler	x	x	Select board member	x
Danforth		x	Town manager	x
Dennysville	x		Select board member	x
East Machias	x		Administrative Assistant	x
Eastport				x
Jonesport	x		Assistant to Selectboard	x

Lubec	x		Town Administrator and Road Manager	x
Machias	x			x
Machiasport	x		Town Clerk	x
Meddybemps	x			x
Milbridge			Town manager/Road Commissioner	x
Northfield	x		Select board member	x
Robbinston			Select board member	x
Roque Bluffs	x	x	Select board member	x
Stueben	x		Town Administrator	x
Waite	x		Select board member	
Whitneyville	x		Select board member	

Opportunity for Neighboring Communities, Regional Agencies	
Requirement §201.6(b)(2): (The planning process shall include) an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process.	
Element	A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process?

Since this is a multi-jurisdictional plan, and multiple towns were present in the meetings, there was ample opportunity for neighboring jurisdictions, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process. Additional opportunities were provided in the form of county e-mails, town mailings, the public comment and review session held on February 12, 2025 , and the availability of the draft Washington County Me Hazard Mitigation Plan – 2024 on the EMA website.

Many of the local officials involved in the preparation of the 2024 update work in various agencies, businesses, academia, and nonprofit organizations.
Neighboring counties were informed of the Plan Update and specific details were discussed during the monthly statewide County EMA Director's Meetings.

Federal and national agencies, and non-governmental organizations involved in the planning risk assessment, and analysis included:

- The National Weather Service—Caribou Forecasting Office Warning Coordination Meteorologists reviewed the hazard profiles and provided additional insight into flooding hazard profile.
- U.S. Geological Survey—Data Section Chief and Research Hydrologist consulted on Washington County Watershed Stream Gauges

- FEMA- Senior Community planner provided guidance for addressing Title 44 CFR, resources were consulted for the Hazard Mitigation Planning process.
- Department of Homeland Security—Homeland Infrastructure Foundation—Level Data used to identify the distribution of critical facilities in municipal risk assessment maps. https.//hifld-geoplatform.opendata.arcgis.com/

State Agencies involved in the Plan Update included:

- Maine Emergency Management Agency staff (MEMA; Anne Fuchs, Director of Mitigation, Planning, and Recovery; and Heather Dumias; State Hazard Mitigation Officer)—provided needed planning assistance, information, and data, and clarifications on process and Hazard Mitigation Plan needs. As part of the planning team, they were consulted on areas prone to each hazard profiled and possible mitigation as the local and county level.

SECTION RISK ASSESSMENT

Risk Assessment
Requirement: §201.6(c)(2): (The plan must include) a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

Introduction

In compliance with 44 Code of Federal Regulations, Part 201.6(c)(2), this section of the Plan identifies, profiles, and assesses the vulnerability of Washington County to natural hazards. Our local risk assessments provide sufficient information to enable Washington County to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. This plan includes detailed descriptions of all the potential hazards that could affect Washington County, along with an analysis of Washington County's vulnerability to those identified hazards. Specific information about numbers and types of structures, potential dollar losses, and an overall description of land use trends in Washington County are included in this analysis. Because this is a multi-jurisdictional plan, the risks that affect only certain regions of the county were assessed separately in the context of the affected region.

Climate and Geography

No risk assessment of Washington County's natural hazards would be complete without first considering its climate and geography. Factors such as seasonal temperatures, annual precipitation, prevailing wind directions and topographical features can all profoundly affect both the occurrence and severity of hazards as diverse as floods and wildfires.

Washington County has two distinct climatic divisions whose boundaries run parallel to the coastline:

1. The coastal division, which occupies a 20–30-mile band along the coast, or about 1/3 of the county's land area (approximately 900 square miles). This division is most affected by the ocean, with minimal elevation changes and thus, minimal impact from any topographic controls.
2. The southern interior division, which covers the northern two thirds of the county (about 1,800 square miles).

Temperature: In the winter, Maine temperatures average from 25°F in the south to less than 15°F in the north and interior. In the summer, average temperatures range from around 60°F in the north to around 70°F in the south.

Maine's average annual temperature has increased by about 3°F over the past century, and the eight warmest years have all occurred since 1998. Maine's average annual temperature in 2021 was 44.2°F, which was the second warmest year on record since 1895. This was 0.7°F warmer than 2020 and 4.1°F above the 1901-2000 average. [3]

Precipitation:
Maine's annual precipitation varies by region with the Coastal Division averaging 46 inches. However, annual values can range from 30 to 62 inches, and multiyear values are often below the long-term average of 42.7 inches from 1900 to 1969. For example, 2023 was a warm and wet year in northern and eastern Maine, with precipitation ranging from 100 to 150 percent of normal.

This includes the conversion of all snowfall to a water equivalent. Distribution of this precipitation throughout the year is fairly uniform from month to month in the Coastal Division August is the driest month, while

[3] NOAA National Centers for Environmental Information Maine State Climate Summary

November is the wettest, with an average of four inches of rain. Flooding tends to occur in late winter and early spring when melting snow and rain encounter frozen soils and ice jammed rivers and streams.[4] Downeast Maine, which includes Washington County, is the only place east of the Rocky Mountains, except for the lee side of the Great Lakes, which receives more precipitation during the winter than the summer. Coastal storms provide the abundant winter precipitation, whereas the cool ocean water and sea breeze help to limit convective activity during the summer, thus inhibiting abundant thunderstorm activity that is responsible for so much of the summer precipitation in the rest of the central and eastern parts of the country.

Prevailing Winds: Prevailing wind direction varies across the state with both season and location. Local influences such as orientation of a valley also may play a key role in dictating prevalent wind direction at anyone location. Most of the state is under northwest to west-northwest winds throughout much of the year and particularly during the winter. During the summer, southwest to southerly winds may become quite frequent across the state. In fact, southerly winds prevail along the Downeast portions of the state during the summer. Part of the reason for the prevalence of winds from these directions during the summer is the frequent formation of a sea breeze. A sea breeze can occur anywhere along the coast during the spring, as well. The formation of a sea breeze especially occurs when regional winds are weak during the summer months. The sea breeze produces the cool, refreshing temperatures during the summer along the coast.

Topographic Features: Overall, the terrain across much of Washington County is hilly. The present- day landscape is a direct result of glacial erosion and deposition from the large ice sheets that completely covered Maine as recently as about 14,000 years ago. A variety of glacial deposits cover the state providing a rich variety in the overall landscape as well as abundant sand and gravel for construction material. Many of these deposits also are excellent sources of ground water (that is, aquifers) for household and industrial water supplies. In addition, glacial deposits and erosion are directly responsible for the lakes found in Washington County.

Extensive wetland areas that provide habitat for many ecosystems are also a result of past glaciation in combination with existing climatic conditions. Maine is the most forested state in the United States with 90% of its land area in woodland (about 85% in Washington County). Historically, this has supported a considerable lumber and paper products industry. Many logging roads provide the only access into vast unsettled areas. These forests also provide habitat for abundant wildlife, and together with the large number of lakes are a great resource for sports and recreation.

The Maine coast is famous for its ruggedness and scenic views resulting from the many inlets, bays, harbors, promontories, and rocky islands found along almost its entire length.

Climate Change

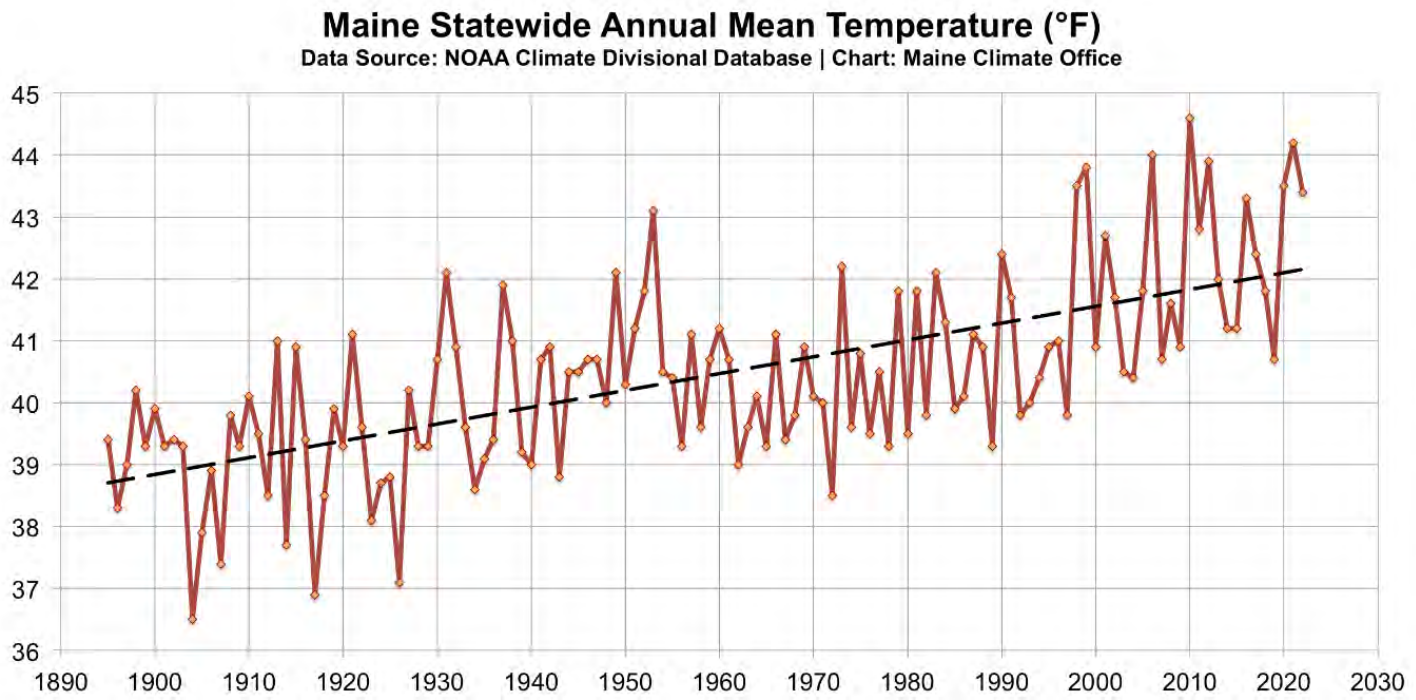
According to Maine's Climate Office:

> "Climate change is causing increasing impacts on natural and human systems worldwide. In Maine, we are seeing warmer temperatures, diminished winters, summer weather extending into the fall, increasing annual precipitation in conjunction with a shift towards more extremes, rising sea level along the coast, and warming waters in the Gulf of Maine. These changes in turn affect both terrestrial and marine ecosystems and environments, and carry profound adaptation and management challenges for agriculture, forestry, fisheries, aquaculture, outdoor tourism, as well as human, animal, and ecosystem health…

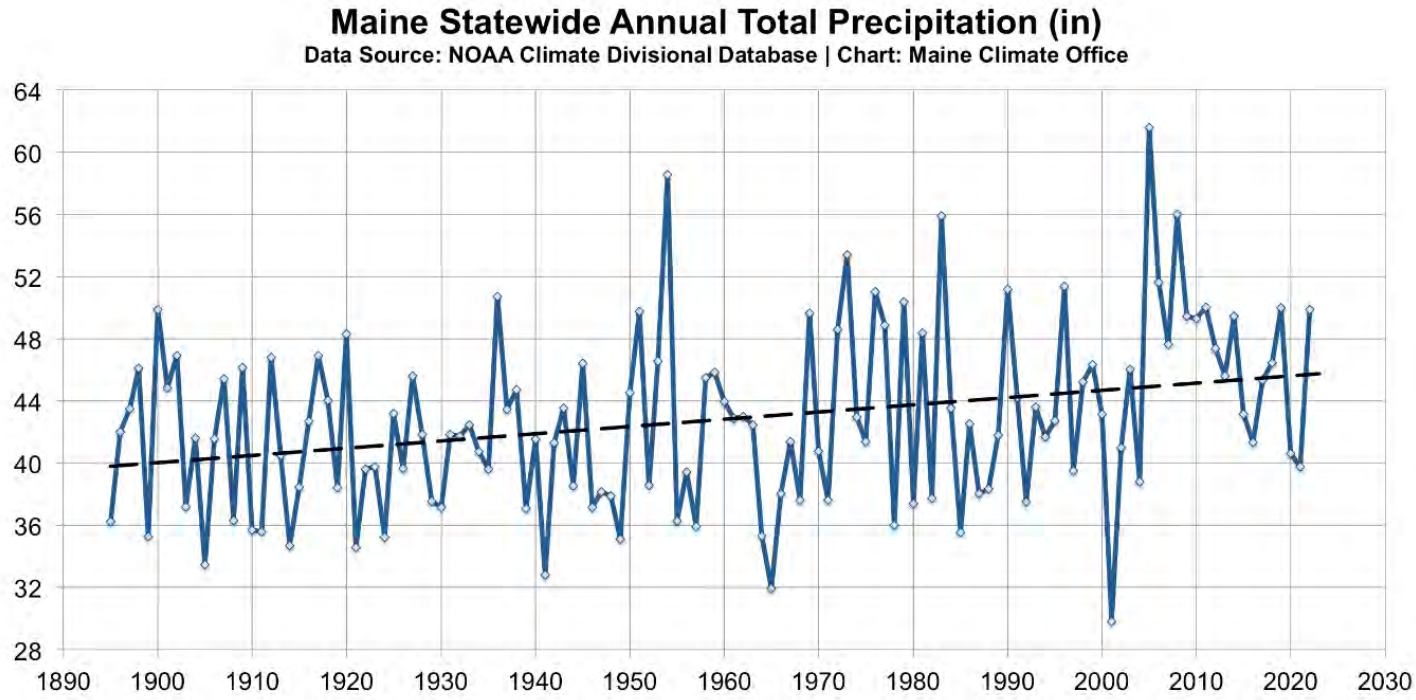
"Over the past century, Maine's statewide mean annual temperature has increased by about 3°F (MCC 2020), and the eight warmest years have all occurred since 1998. This warming is associated with seasonal climate shifts. For example, since the early 1900s, the average duration of winter in terms of temperature and snow cover has declined by about 2 weeks, while the relative length of summer has increased (Birkel and Mayewski 2018; Fernandez et al. 2015). A similar trend is found in the growing season, where an analysis of first and last frost dates based on daily minimum temperatures for sites across Maine found an average increase of 16 days since 1950 (Fernandez et al. 2020). Most of the additional growing season days are due to warmer temperatures in late summer/early fall, especially since the late 1990s. Climate model projections indicate that Maine's mean annual climate could warm 2–4°F by 2050 and up to 10°F by 2100 depending on future greenhouse gas emissions

[4] Maine's Seasonal Weather and Climate Patterns

worldwide. With this warming, the number of summer days with high heat index (e.g., > 95°F) are also expected to at least double by mid-century (Fernandez et al. 2015).



"In conjunction with warming temperatures, the average amount of annual precipitation has increased by about 6 inches since 1895. More frequent heavy precipitation events, primarily in summer and fall, have also been observed since the late 1990s across the northeastern U.S. (Easterling et al. 2017; Huang et al. 2017; Howarth et al. 2019; Fernandez et al. 2020). Likewise, an analysis of daily precipitation measurements from Farmington, ME shows that for the decade centered on 2010 had the greatest number of 2 and 3-inch per day rainfall events for the record period beginning in 1900 (Fernandez et al. 2020). On average, 10 to 15 more heavy precipitation events occur per year compared to the previous century.



"It is notable that after a historically wet decade (2005–2014), recent years have seen impactful drought (e.g., 2016 and 2020). The 2020 drought in particular stands out as in its occurrence May–September during the growing season, and USDA drought disaster declaration for Aroostook and adjoining counties in September of that year (Lombard et al. 2021; MCC 2021). However, despite this recent dryness, climate models project that annual precipitation will increase across Maine this century, particularly during winter and spring (Easterling et al. 2017). Warming temperatures are driving an enhanced hydrologic cycle, which in turn increases the potential for the development of extreme weather, including

heavy precipitation events. However, it remains uncertain how this might affect drought frequency, as more rainfall could be offset by increased evaporation and near-surface soil moisture deficits caused by higher temperatures (e.g., Wehner et al. 2017; Hayhoe et al. 2007; MCC 2020).

"Temperature impacts include diminished winter season with less snowfall and shorter periods of ice cover on lakes and rivers; warming temperatures facilitate northward spread of … vector-borne diseases such as Lyme; warming temperatures lead to increased evaporation and can exacerbate drought or dryness; warmer temperatures will lend to more high heat index days and heat related impacts,

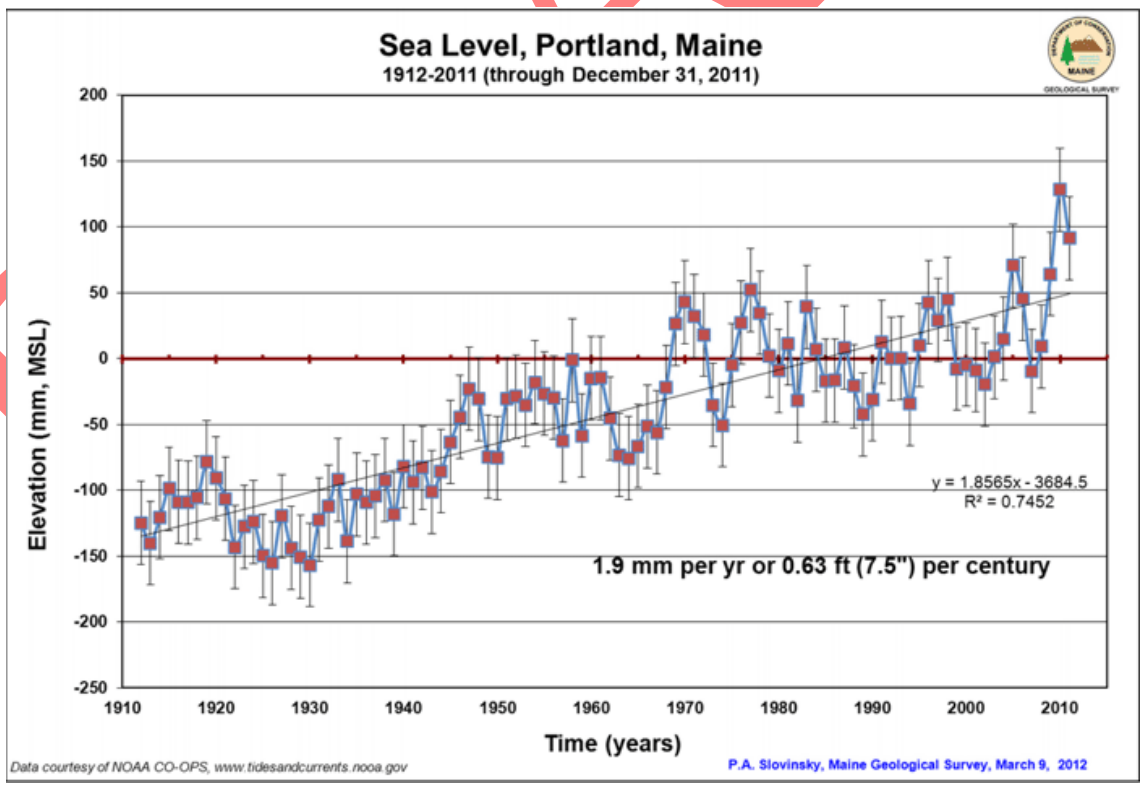
"Precipitation impacts include heavy precipitation events can produce excessive runoff, creating potential for erosion and…crop damage, flooding and damage to civil infrastructure."

Sea Level Rise

The longest record of sea level on the Maine coast is from a tide gauge in Portland, where since 1912 the annual water level has risen about 7.5 inches (Fernandez et al. 2020). Sea level by the end of this century is projected to rise 3–5 feet based on an intermediate scenario of glacier melting and thermal expansion in the world oceans. In its 2020 climate assessment report, the Scientific and Technical Subcommittee (STS) recommends to the Maine Climate Council to commit to manage for 1.5 ft of sea level rise by 2050 and 3.9 ft by 2100. However, based on the largest uncertainties in sea-level rise projections, the STS also suggests preparing to manage for 3 ft of sea level rise by 2050 and 8.8 ft by 2100.

The STS highlights the following:

"A 1-foot increase in sea level in the future will lead to a 15-fold increase in the frequency of 'nuisance' flooding. Nuisance flooding in Portland in the last decade was about 4 times more frequent than the 100-year average. A 1-foot increase in sea level, which could occur by 2050, would cause a '100-year storm' flood level to have a probability of occurring once in every 10 years. Not accounting for changes in storm intensity or frequency, this would result in a 10-fold increase in coastal flooding in Maine in the next 30 years."



Sea level rise impacts expected include increased coastal flooding and erosion, damage to civil infrastructure, increased potential for saltwater intrusion of coastal drinking water aquifers, loss of coastal beaches, dunes, salt marshes and bluffs (or shifts landward).

Another consequence of sea level rise is damage occurring from storm surges. Storm surges is water that is pushed toward the shore by the force of the winds swirling around the storm as well as low barometric pressure. Wind driven waves can be superimposed on the storm tide. This creates a rise in water level causing severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides. The following illustration shows how storm surge can increase flooding risk.

Description of Hazards	
Requirement §201.6(c)(2)(i): (The plan shall include) a description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.	
Element	B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction?
	B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction?

Description of All Natural Hazards potentially affecting Washington County

The Washington County Hazard Mitigation Planning Team identified several natural hazards that are addressed in this Washington County Hazard Mitigation Plan Update. These hazards were identified through an extensive process that utilized input from members of the Hazard Mitigation Planning Team, public input, researching past disaster declarations in the county, and a review of current maps.

The following table identifies the natural hazards to be profiled as well as the hazards that were eliminated from further consideration in the plan, due to a lack of historical evidence, lack of overall county-wide severity or a low likelihood for the event to occur. However, although these disaster events were not profiled in the hazard mitigation plan, it does not certify that any of these events will not or could not occur and cause great damage.

Summary of All Natural Hazards Profiled in this Plan		
Natural Hazard	**Determination of Applicability to Washington County**	**Comment**

Severe Winter Storms and extreme cold	Review of past disaster declarations, Committee and local knowledge, records from 1998 ice storm, 2013 State of Maine Hazard Mitigation Plan, local historic data, residents.	Maine is frequently hit with blizzards and major "northeaster" storms. In 1998, a major ice storm hit Maine, knocking out power in many locations for days. The impacts of winter storms include coastal erosion and wind damage.
Flooding	Review of FEMA flood studies, flood maps, state data on disaster declarations, 2013 State of Maine Hazard Mitigation Plan, review of repetitive losses, and Committee knowledge.	There is a history of flooding in many parts of the county. The county contains 10 rivers, many streams, and lakes, and is located along the coast. Several communities experience flooding during winter storms.
Tornado, severe winds	Review NWS records, State Plan	On average, one to two tornadoes occur in the State of Maine every year, but there has been no loss of life or major damage in many years (but see profiles of severe winter and summer storms for high wind damages).
Landslides	Review of Maine Geological Survey records, 2013 State of Maine Hazard Mitigation Plan.	Included in profile for severe winter storms and severe summer storms.
Drought	Drought Advisory Committee and local input, 2013 State of Maine Hazard Mitigation Plan.	Severe, multi-year droughts occurred in Maine in the 1960's, 1980's and from 2000 to 2003. Drought also occurred in 2016. However, the effects of drought, such as wells running dry in some areas, have never been sufficient to create disaster conditions in Washington County, although they have increased the danger of wildfires.
Hurricanes	Review of past disaster declarations, historical data, Committee input, 2013 State of Maine Hazard Mitigation Plan.	Maine is hit by a hurricane about every 10-20 years. However, the hurricanes are not very powerful by the time they hit the cooler waters of Washington County. Strong, localized, and brief gusts exceeding hurricane strength are sometimes experienced with winter and summer storms (See profile for severe summer storms).
Pandemic	Review of past disaster declarations, Committee input	Maine has experienced five pandemics since written records were kept. These include the smallpox pandemic (1500-1900) which had a mortality of 80% among the Wabanaki People, cholera (1830-1850), tuberculosis (1900-1950), polio (1900-1960)[5] and Covid-19 (2020-present). The Covid-19 sickened up to 1/3 of Washington County and killed 88 people.

[5] Pandemic_Informational_Chart PDF (mainestatemuseum.org

Summary of All Natural Hazards Potentially Affecting Washington County		
Natural Hazard	**Determination of Applicability to Washington County**	**Comment**
Tornado, severe winds	Review NWS records, State Plan	On average, one to two tornadoes occur in the State of Maine every year, but there has been no loss of life or major damage in many years (but see profiles of severe winter and summer storms for high wind damages).

Summary of All Natural Hazards NOT Profiled in this Plan		
Natural Hazard	**Determination of Applicability to Washington County**	**Comment**
Blight/Infestation	State Plan, Committee, and local knowledge, 2023 State of Maine Hazard Mitigation Plan.	Even though the county is heavily dependent on blueberry production, forestry and fishing, state government, private businesses and the general public have responded to incidents of blight and infestation with spray programs, surveys, and restrictions on plant/aquaculture cultivation and plant importation.
Earthquake	Maine Geological Survey, historical records, 2023 State of Maine Hazard Mitigation Plan.	Although earthquakes are common in Maine, no significant motion has been shown for any fault since the last ice age about 20,000 years ago. The largest earthquake in Maine was recorded near Eastport in 1904, but there are no records of any significant damage, and no indication that this area is threatened. All the earthquakes that occur in Maine are intra-plate earthquakes. Maine is far inland from the boundaries of the North American plate which extends from the Mid- Atlantic ridge on the east to the western boundary of the U.S. Maine is near the middle of the plate and is therefore not subject to the frequent, deep, and large earthquakes that are generated by the edges of the tectonic plates bumping into each other.
Landslides	Review of Maine Geological Survey records, 2013 State of Maine Hazard Mitigation Plan.	Landslides are virtually unknown in Washington County. Washington County does not have any mountains or areas of steep terrain that could potentially be subject to landslides.

Subsidence	Review of Maine Geological Survey records	There have been no known cases of land subsidence in Washington County.
Hurricanes	Review of past disaster declarations, historical data, Committee input, 2013 State of Maine Hazard Mitigation Plan.	Maine is hit by a hurricane about every 10-20 years. However, the hurricanes are not very powerful by the time they hit the cooler waters of Washington County. Strong, localized, and brief gusts exceeding hurricane strength are sometimes experienced with winter and summer storms (See profile for severe summer storms).
Landslides	Review of Maine Geological Survey records, 2013 State of Maine Hazard Mitigation Plan.	Landslides are virtually unknown in Washington County. Washington County does not have any mountains or areas of steep terrain that could potentially be subject to landslides.
Subsidence	Review of Maine Geological Survey records	There have been no known cases of land subsidence in Washington County.

The following table rates the natural hazards to be profiled.

Key to rating:

3	Severe	Multiple deaths, mass casualties, or millions of dollars in damages
2.5	High	Deaths or injuries; or $100,000's in damages
2	Moderate	Single death or injuries, or $10,000's in damages
1.5	Low	Injuries; or $1,000's in damages
1	Slight	No deaths, single injury, or $100s in damages

A. Very likely
B. Possible
C. Very Unlikely

Rating of Hazards by Hazard Mitigation Planning Team

Hazard	Damages	Rating	Priority
Severe Winter Storm	Downed power lines, blocked roadways, and heavy snow damage to structures	3A	1
Pandemic	Businesses affected by lockdowns, human illness, and deaths	3A	2
Flooding	Damages to structures, roads, bridges, culverts, utility infrastructure	3A	2
Severe Summer Storm	Localized flooding, high wind damage to utility lines, trees, roads, and buildings	2.5A	3
Wildfires	Damage to timber, homes, and businesses	2A	4

Drought	Damage to crops, failure of municipal and home wells	2A	5

Severe Winter Storms

Washington County is subject to severe winter storm events including "Northeaster" winter storms that include very high winds. Severe winter storms do not ordinarily have an immediate impact on flooding. However, they add to the snowpack, which in the January thaw or springtime can lead to rapid snowmelt, runoff, and flooding. Ice jams can exacerbate flooding by temporarily blocking, then releasing, large volumes of water, often with disastrous downstream impacts.

General Definition: Severe winter weather conditions that are characterized by low temperatures, strong winds, and often large quantities of snow.

Types of Winter Storms in Washington County: A single winter storm may include one or more of the following:

- **Blizzard:** Sustained winds of 40 mph (miles per hour) or more or gusting up to at least 50 mph with heavy falling or blowing snow, persisting for one hour or more, temperatures of ten degrees Fahrenheit or colder and potentially life-threatening travel conditions. Blizzards can create poor visibility and dangerous wind chill.
- **Ice storm:** Rain which freezes upon contact. Ice coatings of at least one-fourth inch in thickness are heavy enough to damage trees, overhead wires, and similar objects and to produce widespread power outages.
- **Northeaster:** Northeasters (or nor'easters) are extra-tropical coastal storms that can produce tremendous amount of precipitation and strong winds that can cause coastal flooding damage. When the precipitation is in the form of snow, sleet, or freezing rain, it can damage overhead utility lines and become a highway driving hazard.
- **Southeaster:** Southeasters (sou'easters) are extra-tropical coastal storms with wind that originates from the southeast direction. These are generally weakened hurricanes and tropical depressions. Sweeping over the Gulf of Maine, they typically bring heavy rain, strong winds, and rough seas. Because of their high winds, heavy rains, and northward movement, they can cause significant coastal flooding. These storms are expected to increase as long-term projections show hurricane season is extending now beyond November 30th into December and early January.
- **Sleet storm:** Frozen rain drops (ice pellets) which bounce when hitting the ground or other objects, but in accumulated depths of two inches or more, produces hazardous driving conditions.
- **Heavy snowstorm:** A snowfall of fifteen inches or more within 12 to 24 hours, which disrupts or slows transportation systems and the response time of public safety departments.

Location of the Hazard

The entire county is subject to severe winter storms every winter. Neither the State of Maine nor the National Weather Service provides data on snowfall and ice storm on a town-by-town basis unless a town has a trained "weather spotter" who is available to report.

While the entirety of Washington County is subject to major snowfall events, its northern half is typically prone to higher precipitation amounts. The entire county can experience a major ice storm, as it did in January 1998. However, the coastal communities experience icing conditions more frequently. Finally, the entire county is very susceptible to "Nor'easter" winter storms and severe coastal storms, especially from the very high winds that are involved in such a storm.

Location of municipal severe winter storm impact areas. The following is a summary of areas that are impacted by severe winter storms in specific jurisdictions, as identified in the Washington County Hazard Mitigation Planning Municipal Survey as well as responses to the Community Survey in 2024.

Town	Location	Description
Addison	Cape Split	Cape Split and Mooseneck are supported by only these two transmission lines, these locations have a greater propensity for the frequency and duration of power outages. During the winter, the power loss is of a more severe impact with the cold.
	Mooseneck	Cape Split and Mooseneck are supported by only these two transmission lines, these locations have a greater propensity for the frequency and duration of power outages. During the winter, the power loss is of a more severe impact with the cold.
Alexander	Davis Rd	Should have trees and brush cut back from the road to prevent power outages, and blocked roads. 400±' on the Davis Rd starting at the Route 9 end
	Spearin Road	Should have trees and brush cut back from the road to prevent power outages, and blocked roads. 400±' on the Davis Rd starting at the Route 9 end
Beals	Alley Bay Rd	Entire Island loses power often during winter storms and experiences outages and damage to wharf on Alley Bay Rd.
Calais	Pikes Park	Ice jams occur at extreme high tides during winter
	Calais City Cemetery	Tree branches fall during storm events
Charlotte	Charlotte Road near Round Pond	
	Damon Ridge Road.	
Cherryfield	Upper Corner Bridge	Ice jams
	Spragues Falls Rd.	Power outages
Columbia	Saco Road Bridges and Waterfalls	Prone to ice jams during winter storms
Cutler	Cutler Fire Department/ Post Office	Damaged in Jan '24
Danforth	Greenland Cove Road	Winter damage
East Machias	Means Cottage Road	Problems obstructions during storms
	Hanscom Road	Prone to obstruction from winter storm debris
	Scotts Hill Road	Prone to obstruction from debris during winter storms
	Chases Mill Road	Prone to obstruction from winter storm debris
	Dwelley Road	Prone to obstruction from winter storm debris
Eastport	Wastewater treatment plant and pump stations	

	Deep Cove Road.	
Jonesport	Jonesport Marina	Shore and marina infrastructure susceptible to storm damage
Lubec	Lead Mine Road,	
	Boot Cove Road,	
	North Lubec Road	
	Lyons Road.	
	Maple Tree, Straight Bay Road, roads off Straight Bay Road, Jim's Head Road	
	Coastal infrastructure damage on Johnson St.	
Machias	Grove Street & Fremont Street	Large trees in the area create significant hazards
	Ames Way and Elm Street	Narrow roads, tight turn by Grange and large trees create significant traffic hazards
Meddybemps	Route 191 northeast	Significant risk of obstruction during winter storms
	Route 191 west	Significant risk of obstruction during winter storms
	Route 214	Significant risk of obstruction during winter storms
Milbridge	Bayview Area	Significant winter storm impacts
	Route 1 & Wyman Road Intersection	Significant hazard during winter storms
	Kansas Road near Marsh	Winter storm hazards
Machiasport	Beach Road	Frequent washouts during storms
	Pettigrow Point Road	Flooding, washouts, and road damage
	Area around Port Road at Mill Creek	Prone to flooding and erosion
	Port Road	Many locations where roads are obstructed or eroded during winter storms
Northfield		Subject to widespread power outages which leave residents without heat for days
Passamaquoddy Tribe – Pleasant Point	Causeway	storms have caused ocean water to blow across the road.
Steuben	Bogus Meadow Rd	Frequent power outages
	Number Seven Road	Frequent power outages
	Dyer Bay Road	Frequent power outages
	Mogador Road	Frequent power outages
	Stanley Point Road	Frequent power outages
	Eastside Road	Frequent power outages
	Pigeon Hill Road	Frequent power outages
Steuben	Boat Ramp at Pinkham Bay	Debris & ice jams

Waite	Bingo Road	Entire area prone to debris, obstruction, and outages
Whitneyville	Route 1A and Machias River	Ice jam and flood risk
	Sunrise Trail and Machias River	Ice jam and flood risk
	Whitneyville Village	Hard hit with storms due to power outages and obstructions
	Canal Road Area	Remote, wooded road prone to obstruction and power outages

Extent (Severity) of the Hazard

Washington County is subject to severe winter storm events in the form of ice storms and blizzards, accompanied by high winds, wave action, coastal erosion, and flooding. Winter storms can threaten Washington County any time from November through April. The Gulf Stream follows a path up the eastern seaboard, bringing major storms with it to the Gulf of Maine. Air streams containing much colder air flow down from Canada and collide with the Gulf Stream over the New England region. Nor'easters, the most severe storm in Washington County, occur during the winter, spring, and fall. They rarely develop during the summer.

Precipitation amounts can exceed several inches of water equivalent (20-30 inches of snow or more), while wind speeds can be equal to or greater than those for hurricanes that reach Maine.

Total snowfall in the coastal region ranges from between 50 and 80 inches in the Coastal region, and 60 to 90 inches in the Southern Interior region. January is usually the snowiest month throughout the state, with many stations averaging over 20 inches of snow during that month, with December usually averaging out to be the second snowiest month.

The snowpack makes an important contribution to both surface and groundwater supplies, and years with a low snowpack can lead to water shortages by late summer. Melting of the snowpack in March and April is often gradual enough to prevent serious flooding, but in Washington County, melting snow, combined with rainstorms, often overwhelms watersheds, ditches, and culverts, which can lead to road washouts.

On average, the length of annual maximum snow cover ranges from about 50 days along the coast, to over four months in the interior parts of the county.

Previous Occurrences

The following table contains a summary some of the most severe winter storms that have occurred in Washington County, as reflected primarily in Emergency Declarations and/or Presidential Disaster Declarations.

Key: DR: Disaster Declaration EM: Emergency Declaration

Historical summary of Major Winter Storm Events in Washington County Since 1972			
Year	**Month/Day**	**General Description**	**Presidential Declaration #**
1972	19-Feb	Winter storm	State aid
1978	10-Jan	Rain, snow, ice	n.a.

1993	Mar 13 14	Blizzard, severe winds, and snowfall,	FEMA EM-3099
1998	Jan 5-25	"Great Ice Storm of "98"; power outages, forestry damage	FEMA DR-1198
2001	Mar 5-31	Severe winter storm	FEMA EM-3164
2003	Jan-March	Extreme winter weather, severe cold and deep frost	FEMA DR-1468
2004	Dec 6-7	Winter storms and extreme cold	FEMA EM-3190
2004	Dec 14-15	Winter storms and extreme cold	FEMA EM-3194
2005	Feb 10-11	Snow, winter storms, extreme cold	FEMA EM-3206
2013	Feb 8-9	Severe winter storm (blizzard)	FEMA DR-4108
2013	Dec 21-26	Severe ice storm, extensive power outages, extreme cold from the "Polar Vortex"	Declaration denied
2017	13-Feb	Blizzard closed state offices; public was warned to avoid any unnecessary travel	None requested
2017	14-Mar	Blizzard closed state offices at 2PM; public warnings to avoid any unnecessary travel	None requested
2018	4-Jan	Blizzard: high winds statewide, 10-15 inches of snow in western Maine, coastal flooding, and erosion	N/A
2018	13-Mar	Blizzard: 12-24 inches of snow across York County and western Maine, some reports of 30 inches in eastern Maine, several hours of blizzard conditions on the coast	N/A
2019	17-Oct	Bomb cyclone with guests up to 60 mph caused 219k power outages	N/A
2020	10-Apr	Damaging winds, heavy snow, coastal flooding	N/A
2023	Dec. 17-23	Sever storm and flooding	DR-4754-ME
2024	Jan. 9-13	Maine Severe Storms and Flooding	(DR-4764-ME)

Source: MEMA records and FEMA website

While the final totals are not yet fully calculated the January 2024 storms are expected to be the most destructive storms that have ever hit Washington County. These storms severely damaged municipal coastal infrastructure as well as privately owned wharfs and piers causing an

estimated 8.75 million damages. This dwarfed the most severe winter storm previously recorded -- the ice storm of January 1998, which caused over $1.5 million ($2,894,539.88 in 2024 dollars) in damages throughout the county.

The January 2024 storms resulted in the highest water levels ever recorded in Machias--more than one foot over base flood elevation. Some towns lost historic infrastructure, such as Milbridge, which saw four or five of its eight piers damaged. In Machias, frozen chunks of ice and seaweed flooded the downtown as the dike and temporary bridge over the Middle River were overtaken by the storm surge. In Addison, the East Side Road flooded as the sea rushed across. Around the county, high water level records were set. Cutler reached its highest-ever recorded water level at 18.89 feet, and Calais hit its second highest at 15.99 feet. Eastport reached its fourth-highest water level at 23.92 feet.

The following table provides a town-by-town summary of damages resulting various Federal Disaster or Emergency Declarations since 1993. The table includes only public assistance losses and does not include individual and business losses which can be substantial. By far, the largest losses were from the ice storm of 1998.

Severe Winter Storm Losses in Dollars by Municipality or Sovereign Nation and Federal Disaster or Emergency Declarations since 1993												
	1993 #3099 -EM	**1998 #1198-DR**	**2001 #3164-EM**	**2003 #1468-DR**	**2004 #3190-EM**	**2004 #3194-EM**	**2005 #3206-EM**	**2007 #1693-DR**	**2010 #1953-DR-**	**2013 #4108-DR**	**2023 #4754 DR**	**2024 #4764 DR**
Addison		9,066						2,565.17				
Alexander		20,443						11,059.56	11,668.23		4941.48	15000
Baileyville	1,095	74,512	8,212		5,818	7,743				12376.56		
Baring Plt		3,306							3,116.96			
Beals		10,433						4,575.60				
Beddington		5,278										
Calais	1,437	51,996	20,672	$7,199	9,293	10,539	$16,104		221,909.73	15244.77	109254.96	
Charlotte		18,364						7,171.89	18,684.66			
Cherryfield		32,821										
Columbia		19,718						2,256.	13,419.8			

								18	1			
Columbia Falls		3,643										
Cooper		7,785	1,442						16,747.17			
Crawford		8,874										
Cutler		3,456										
Danforth		5,456							19,470.77			
Dennysville		22,011							12,278.27			
East Machias		70,105							32,792.01			
Eastport	1,052	63,917		18,547	4,456	5,371	7,490	19,086.57	58,452.75	10185.53		
Grand Lake Stream Plt		3,705									47,240.00	
Harrington		26,980										
Jonesboro		19,432					1,809					
Jonesport		25,166	3,450									46,256.25
Lubec	1,455	33,834	4,766				4,718		36,230.24	8005.78	15,384.54	122,979.93
Machias	793	36,331	5,155		3,239	4,103	3,164	42,266.73	3,266.89	10145.64		
Machiasport	1,336	41,024			7,592	10,045		3,710.70	16,200.05	15053.14		
Marshfield		15,420							2,382.39			
Meddybemps		5,993							5,799.09			
Milbridge	766	7,267	16,130	1,030	2,126	2,566	2,914			5790.56		

Northfield		12,120										
Pembroke		17,103							11,657.26		4,550.00	
Perry	1,424	20,693							90,234.33	5913.92		
Princeton		20,475							4,639.89		24,477.54	
Robbinston		17,925							29,764.85		154,406.27	
Roque Bluffs		13,584					6,771	4,510.75				169,560.00
Steuben		22,805						1,590.57				
Talmadge									20,910.28			
Topsfield									14,445.69			
Wesley		10,200										
Whiting		10,904										
Whitneyville		14,185	3,172									
Unorganized		70,815							37,003.83			
Sovereign Nation												
Indian Township		70,537										
Pleasant Point		50,637						465.00				
Other*		591,494*	1,368*	61,721*				46,500.00	39387.24	3,549.96		
Washington Co.	**$9,458**	**$1,590,083**	**$64,366**	**$88,497**	**$32,523**	**$40,366**	**$42,970**	**$145,758.72**	**$777,277.32**	**$86,265.86**	**$360,254.79**	**$173,964.67**

*See next table; Source for table - MEMA

Severe Winter Storm Losses by Other Entities And Federal Disaster or Emergency Declaration since 1993			
	1998 #1198-DR	**2001 #3164-EM**	**2003 #1468-DR**
M.S.A.D. #14	$14,995		
M.S.A.D. #37	4,331		
SAU #107		$1,368	
E. Me. Electric Corp.	549,392		
Pleasant R Sol. Wtr.	1,953		
Addison Pt Water District	1,275		
Danforth Water District			$13,080
Lubec Water & Electric	3,087		
Milbridge Water District			5,370
Quantabacook Water District	2,230		5,068
Passamaquoddy Water Dist.			38,203
Downeast Comm. Hospital	12,907		
Harrington Family Health	1,324		
Total	**$591,494**	**$1,368**	**$61,721**

Source: MEMA

Probability of Occurrence

No probability studies have been done, but Washington County's location in the Northeast, and its long experience with winter storms, indicate that between November and April of every year, there is a high probability that such storms will occur. The locations where such storms are the most intense will vary from year to year. Climate models suggest that Maine is likely to get more ice storms in the future because of warmer temperatures, but it is not known whether the severity of ice storms will be affected by warmer temperatures. If colder temperatures prevail, the precipitation will be in the form of snow, as was the case in the record-breaking "snow year" of 2014-2015 that blanketed the Northeast.

Pandemics

General Definition: The global spread of a pathogen or variant that infects human populations with limited or no immunity through sustained and high transmissibility from person to person, overwhelming health systems with severe morbidity and high mortality, and causing social and economic disruptions, all of which require effective national and global collaboration and coordination for its control.[6] The World Health Organization declares a pandemic when a disease's growth is exponential. This means the growth rate skyrockets, and each day cases grow more than the day prior. The WHO defines pandemics, epidemics, and endemic diseases based on a disease's rate of spread. Thus, the difference between an epidemic and a pandemic is not in the severity of the disease, but the degree to which it has spread. A pandemic cut across international boundaries, as opposed to regional epidemics. This wide geographical reach is what makes pandemics lead to large-scale social disruption, economic loss, and general hardship. It is important to note that a once-declared epidemic can progress into pandemic status. While an epidemic is large, it is also generally contained or expected in its spread, while a pandemic is international and out of control.

Types of Pandemics in Washington County

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[6] *"Zero draft of the WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response ("WHO CA+")" (PDF). World Health Organization – Intergovernmental Negotiating Body. 1 February 2023. Retrieved 7 June 2023.*

Because of their broad, international scale, pandemics are not localized like other hazards addressed in this document. This means, in the event of a pandemic, the entire county will be affected as well as the state and the entire county. The extent of the disaster will mean sever resource restrictions, and these will be most felt potentially in rural and remote regions such as Washington County, as simple mathematics will demand a de-prioritization of areas like Washington County.

Location of Pandemic Hazard

Pandemic spread and disease severity are affected by several factors which influence the development of localized hot spots. After a spark or importation, the risk that a pathogen will spread within a population is influenced by pathogen-specific factors (including genetic adaptation and mode of transmission) and human population-level factors (such as the density of the population and the susceptibility to infection; patterns of movement driven by travel, trade, cultural practices, migration; and speed and effectiveness of public health surveillance and response measures.[7] Denser concentrations of population, especially those living in overcrowded settings or informal settlements, can act as foci for disease transmission and accelerate the spread of pathogens.[8] Moreover, social inequality, poverty, and their environmental correlates can increase individual susceptibility to infection significantly.[9] Further, comorbidities and the age of the population have a strong impact on mortality rates. Thus, Washington County's rural nature protects it from pandemics on one level, but the County's endemic poverty, limited housing, large elderly population, high proportions of community members with comorbidities and extremely limited medical facilities all create vulnerabilities.

During the Covid-19 Pandemic, these intersectional found the following communities with the highest per capita rates of infection:

Robbinston: 10% higher number of persons per household as in the rest of Washington County

Machias: 10% older than the rest of Washington County and double the poverty rate

Princeton and the Passamaquoddy Tribe at Indian Township: Double Washington County's poverty rate with 25% more people per household in Indian Township

Baileyville: 10% higher number of persons per household as in the rest of Washington County

Milbridge: 10% higher number of persons per household and higher poverty rate than the rest of Washington County

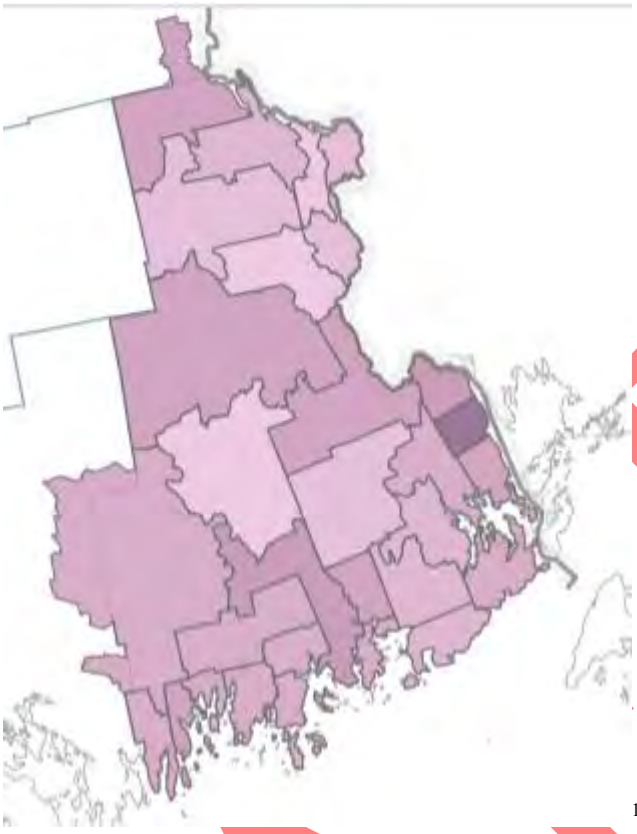
Danforth: 1.5 times the poverty rate as the rest of Washington County[10]

[7] Sands P, Turabi A El, Saynisch P A, Dzau V J. 2016. "Assessment of Economic Vulnerability to Infectious Disease Crises." The Lancet 388 (10058): 2443–48.

[8] Neiderud C J. 2015. "How Urbanization Affects the Epidemiology of Emerging Infectious Diseases." Infection Ecology and Epidemiology 5: 27060. doi:/10.3402/iee.v5.27060.

[9] Farmer P. 1996. "Social Inequalities and Emerging Infectious Diseases." Emerging Infectious Diseases 2 (4): 259–69.

[10] ACS 2022 5-



[11]

Extent and Severity of the Hazard

Based on the experience of the Covid-19 Pandemic in Washington County, similar severity can be expected. While the COVID-19 pandemic may be the deadliest pandemic in more than a century, statistically these events are not terribly rare. The probability of a pandemic with similar impact to COVID-19 is about 2% in any year and that probability is growing. Based on the increasing rate at which novel pathogens such as SARS-CoV-2 have broken loose in human populations in the past 50 years, it is estimated the probability of novel disease outbreaks will likely grow three-fold in the next few decades. Population growth, changes in food systems, environmental degradation and more frequent contact between humans and disease-harboring animals all may be significant factors. This points to the importance of early response to disease outbreaks and building capacity for pandemic surveillance at the local and global scales.[12] The extend of a projected pandemic can be assumed to be like the Covid-19 Pandemic, with 20% of the population sickened, 225 people hospitalized, and up to 88 deaths.

Not only does a pandemic sicken and kill people, but from the Covid-19 pandemic, but statistics show the pandemic increased overall mortality rates. While older age groups experienced significant COVID-related mortality during 2020 and into the winter surge of early 2021**, data show that the virus can explain only about half of the excess deaths.** Excess mortality skyrocketed in the last half of 2021, with COVID-related deaths rising as well as non-COVID causes, even though COVID-19 vaccination was widely accepted. Most striking is that, while Mainers aged 30 to 49 experienced few COVID-related deaths for most of the pandemic, those jumped in the last quarter of 2021 to drive 26% excess deaths, while non-COVID causes also spiked to contribute another 46% excess. Overall, 73% more Mainers aged 30-49 died during the last three months of 2021 than would be expected.

[11] Maine Center for Disease Control & Prevention, Division of Disease Surveillance https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/airborne/coronavirus/data.shtml

[12] Intensity and frequency of extreme novel epidemics Marco Marani , Gabriel G. Katul, William K. Pan , and Anthony J. Parolari *Proceedings of the National Academy of Sciences* August 23, 2021

Maine Annual Excess Mortality By Age Group, 2020-21				
	2020		2021	
15-29	-1.8	-0.97%	9.2	4.98%
30-49	111.4	16.49%	293.4	43.43%
50-64	153.4	9.30%	405.4	24.58%
65-74	319.4	12.05%	695.4	26.24%
75-84	322.8	9.05%	741.8	20.80%
85+	159	3.25%	281	5.74%
All Ages	**1065.2**	**7.79%**	**2403.2**	**17.57%**

Centers for Disease Control and Prevention (CDC)

This overall damage to human health can be explained by deferred medical care when hospitals are overrun with pandemic patients and increased isolation leading to depression, drug and alcohol use as well as suicide.[13] Analysis shows Covid lockdowns led to up to an 8% uptick in domestic violence as well.[14]

Communities with more than 10% greater than average household densities, and/or those with higher than the county's average poverty rates will be impacted most strongly. These communities include:

Robbinston: 10% higher number of persons per household as in the rest of Washington County

Machias: 10% older than the rest of Washington County and double the poverty rate

Princeton and the Passamaquoddy Tribe at Indian Township: Double Washington County's poverty rate with 25% more people per household in Indian Township

Baileyville: 10% higher number of persons per household as in the rest of Washington County

Milbridge: 10% higher number of persons per household and higher poverty rate than the rest of Washington County

Pembroke: 10% higher number of persons per household as in the rest of Washington County

Danforth: 1.5 times the poverty rate as the rest of Washington County[15]

The current tight housing and rental market will continue a trend towards larger numbers of people living in a single household, and those households will be increasingly multigenerational, thus exposing elders to younger family members who may have more numerous close contacts at work and school.[16] [17] Further , the increasingly tight housing marker will raise levels of homelessness.[18] Unhoused individuals, whether living in encampments or 'couch surfing' have less consistent access to nutritious food, good hygiene, sufficient rest and to capacity to social

[13] "Fatal conceit: mortality in Maine during the Covid-19 era" Maine Policy Institute, Nick Murray, Director of Policy October 2022

[14] Piquero AR, Jennings WG, Jemison E, Kaukinen C, Knaul FM. Domestic violence during the COVID-19 pandemic - Evidence from a systematic review and meta-analysis. J Crim Justice. 2021 May-Jun; 74:101806. doi: 10.1016/j.jcrimjus.2021.101806. Epub 2021 Mar 9. PMID: 36281275; PMCID: PMC9582712.

[15] ACS 2022 5-

[16] Lautz. J, "Full House: The Rise of Multi-generational Homes During COVID-19" National Association of Realtors. February 23, 2021

[17] Li Y, Tan J, Tan S, Zhou Y, Sai B, Dai B, Lu X. Infection rate and factors affecting close contacts of COVID-19 cases: A systematic review. J Evid Based Med. 2022 Dec;15(4):385-397. doi: 10.1111/jebm.12508. Epub 2022 Dec 13. PMID: 36513958; PMCID: PMC9877962.

[18] Horowitz, A Hatchett, A. & Staveski, A. "Housing Costs Drive Levels of Homelessness" Pew Charitable Trust August 2022.

distance.[19] All these factors place unhoused and housing insecure people at greater risk for contracting disease and having poor outcomes during a pandemic.

Previous Occurrences

The following table contains a summary some of the pandemics that have occurred in Washington County.

Year	General Description	Presidential Declaration #
1900-1950	Poli	
1900-1960	Tuberculosis	
1918-1919	Influenza	
2020-2023	Covid-19	Maine Covid-19 **EM-3444-ME**, Passamaquoddy Tribe at Pleasant Point Covid-19 EM-3498

Source: MEMA records and FEMA website

While there is not yet data broken out by county enumerating the economic damage done by the Covid-19 Pandemic, at the state level it is clear the economic impacts of COVID-19 were highly disproportionate across socioeconomic and demographic groups. Job loss was, and continues to be, concentrated among Maine's lowest earners, consistent with nationwide trends. Beyond the medical costs of Covid-19, the mandated shutdowns had a huge impact on Washington County's economic systems. In December 2020, low-wage jobs were down over 28%, while middle- and high-wage jobs grew by 2.2% and 10.0% compared to pre-pandemic levels, respectively.[20] With a poverty rate of 17.5 and 6% of the labor force in Washington County employed by the recreation and hospitality industry, Washington County took a terrible blow to its economy.

Probability of Occurrence

Probability studies indicate an 2-3% chance of a global pandemic on par with Covid-19 in any given year. Potential outbreaks could include A(H5N1) avian influenza, which is rising in mammal populations and causing new human infections, and a new form of m-pox that has led to deaths of children.[21] Climate change, international travel, and a growing global population are all among the factors scientists are citing for the increased likelihood of a severe pandemic occurring again within the next decade. British risk modeling suggests that there is a 27.5% chance that a pandemic as deadly as COVID-19 could occur by 2033. However, if lessons from the coronavirus pandemic are taken on board, the risk of another comparative pandemic can be reduced by as much as 71%. These responses include a fast vaccine rollout, strong delivery infrastructures, and other "pandemic preparedness strategies. Vaccines are paramount, if they can be rolled out within 100 days of the discovery of pathogen, the likelihood of a pandemic as deadly as COVID-19 in the next decade drops from 27.5% to 8.1%.[22]

Flooding (includes flooding from potential dam failure)

[19] Population At-Risk: Homelessness and the COVID-19 Crisis, Homeless Research Institute. 2020

[20] Hallowell, A., Rector, A. State Economist Maine's Economy during COVID-19: 2020 Year in Review" Maine Dept of Administrative and Financial Services 2020

[21] "World is woefully unprepared for another pandemic, experts warn"
BMJ 2024; 385 doi: https://doi.org/10.1136/bmj.q1355 (Published 19 June 2024) Cite this as: BMJ 2024;385: q1355

[22] "Disease forecasters are convinced there's a 27% chance of another COVID-like pandemic within 10 years—but experts believe there's a silver bullet Apr 18, 2023, Global Center for Health Security

General Definition: A temporary inundation of normally dry land because of 1) the overflow of inland or tidal waters; and/or 2) the unusual and rapid accumulation or runoff of surface waters from any source. Note: the nature of Washington County's geology and hydrology is such that flooding is usually fast rising but of short duration.

Types of Flooding in Washington County: There are several different types of potential flooding in Washington County:

- **Beaver Dam Flooding:** Flooding resulting from back-up and overflow of water resulting from beaver dams. In Washington County, flood damages from beaver dams have been serious, and have included washouts of roadways and other properties.

- **Coastal Flooding:** The temporary inundation of beaches and other land areas by the sea, either because of coastal storms, hurricanes or erosion or landslides. Coastal flooding comes with two significant components: still water and storm surge. The typical high winds associated with coastal flooding exacerbate the flooding by "pushing" more water toward land. A nor'easter can cause a storm surge along the coast of Maine. Fetch, or the distance the wind can blow toward the shore from out at sea is a significant factor in coastal flooding depths. The shape of the ocean floor just offshore is another variable.

- **Erosion/coastal erosion:** As defined in FEMA's Coastal Construction Manual, this includes a) beach erosion; b) bluff erosion; and c) coastal landslides. Under the National Flood Insurance Program, is defined as the gradual wearing a way of land masses. In general, erosion involves the detachment and movement of soil and rock fragments during a flood or storm or, over a period of years, through the action of wind, water, or other geologic processes. Episodic erosion is induced by a single storm event.

- **Dam failure:** The sudden release of water resulting from structural collapse or improper operation of the impounding structure. Dam failure can cause rapid downstream flooding, loss of life, damage to property, and the forced evacuation of people.

- **Flash flood:** A flood event occurring with little or no warning where water levels rise rapidly due to heavy rains, ice jam release, or rapid snow melt.

- **Ice jam:** An accumulation of floating ice fragments that blocks the normal flow of a river. During a thaw or rainstorm, the rapid increase in discharge from snow melt and/or rainfall can rapidly lift and break up a thick ice cover and carry it downstream as an ice run. Ice runs can jam in river bends or against the sheet ice covering flatter reaches. The resulting ice jams can block flow so thoroughly that serious flooding may result within an hour of their formation. Failure of an ice jam suddenly releases water downstream. Damages from ice jam flooding usually exceed those of clear water flooding because of higher than predicted flood elevations, rapid increase in water levels upstream and downstream, and physical damage caused by ice chunks. Moving ice masses can shear off trees and destroy buildings and bridges above the level of the flood waters.

- **Lacustrine:** (Lake Flooding) occurs when the outlet for the lake cannot discharge the flood waters fast enough to maintain the normal pool elevation of the lake. During a base flood event, normal increases in water surface elevations on most Maine lakes and ponds range from 1 to 5 feet. However, in Maine there are some examples where the base flood event will reverse the flow of the outlet stream. In such instances, river and base flood elevations can

  rise more than 15 feet above normal pool. While this can impact individual sport camps built near the water's edge, there are no records of major damages so this type of flood will not be further addressed in the Plan.

- **Riverine/riparian:** Periodic overbank flow of rivers and streams, usually the result of spring run-off, but can also be caused by major rainstorms.

- **Tsunami:** A wave produced by a disturbance that displaces a large mass of water – usually a result of geologic activities such as earthquakes, volcanic eruptions, underwater landslides, or in rare geologic cases, meteor strikes. After such a disturbance, displaced water travels outward from its site of origin as a series of unusually large waves at great speeds (Komar, 1996). All areas with an elevation less than 100 feet and within a mile of the coast could be impacted by a tsunami. Based on information obtained from the Maine Geological Survey, the chances of a catastrophic event are minimal. Moreover, with the presence of the relatively shallow Georges Bank offshore, Maine remains protected from the full force of an Atlantic Ocean tsunami.

- **Urban:** Overflow of storm sewer systems, usually due to poor drainage, following heavy rain or rapid snow melt. The combined sanitary and storm water systems that some urban areas installed years ago cause flooding of sanitary sewerage when riparian or coastal floods occur. Runoff is increased due to many impervious surfaces such as roof tops, sidewalks, and paved streets.

Location of Flooding Hazard

The county EMA has reviewed the county's Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies to compile a profile of the flooding hazard in the county. Flood zones are shown on some of the municipal base maps included in this Plan. Floods are described in local flood hazard studies in terms of their extent, including the horizontal area affected, and the related probability of occurrence. Flood studies use historical records to determine the probability of occurrence for different extents of flooding. The most widely adopted design and regulatory standards for floods in the United States is the 1-percent annual chance flood and this is the standard formally adopted by FEMA. The 1 -percent annual flood, also known as the base flood, has a 1 percent chance of happening in any particular year. It is also referred to as the "100-year flood."

Washington County's susceptibility to flooding is further exacerbated by the wide-ranging weather variables as discussed in the climate section. Due to seasonal (and regional) factors such as heavy rains, rapidly melting snowpack and/or ice jams, major flooding most frequently occurs between December and May. Based on MEMA data, the most flood prone months are April, January, and March, in order of severity. Floods can also be caused by hurricanes.

Location of municipal flooding areas. The following is a summary of areas that are subject to flooding and/or that have had repeated flood damages in specific jurisdictions, as identified in the Washington County Hazard Mitigation Planning Municipal and Community Surveys 2024.

- **Addison:** East Side Road crosses over the Knowles Brook at the Lot Norton Bridge (located at 44°36'00.2"N 67°44'16.5"W) which has flooded multiple impassibly multiple times and has impacted the capacity of emergency response to and from South Addison.
- **Alexander:** Crawford Rd near 311 experiences slight flooding and erosion during severe rain. There is also flooding and erosion on the Cooper Rd (State maintained road) at the low spot where there is a beaver dam is, just north of the Arm rd. (sixteenth stream and adjacent low land).
- **Baileyville:** South Princeton Rd. culverts are undersized; Staples Rd. has low terrain where roadbed is within the flood zone. Wastewater treatment facility on the St. Croix River is also vulnerable.
- **Beals:** Storms and big tides combine to causing flooding along the shores and erosion.
- **Columbia:** All homesteads along the Pleasant River, Addison Rd Culvert, and Georgetown Woods Rd. two bridges on Saco Rd. flood and many road shoulders in town.
- **Calais:** Pikes Park, Waterfront Walkway, Nash's Dam access road, North St. Public Safety Building, and Hardscrabble Rd. ditch/culvert overflow
- **Cutler:** Potential flooding concerns at Walters Beach access, Destinay Bay Rd, Wharf Rd. Boat Landing, Cove Rd. and Bridge, and Turner's Stream Beach access.

- **Danforth:** Bancroft Rd. as it follows the river is prone to flooding. Greenland Cove Rd floods at Greenland Brook—this road dead ends if it is cutoff there is no way to get them out. A large population of citizens live in Greenland Cove – if the brook culvert system fails there is no way to get them out of that area.
- **Dennysville:** Shipyard Rd., Milwaukee Rd. Smithridge Rd,
- **Eastport:** Wastewater treatment plant Middle Street pump station (vulnerable); Toll Bridge Road (repeated flooding); Battery/Middle (vulnerable).
- **East Machias:** Water and Willow Sts. are prone to flooding
- **Lubec:** All the coastline is susceptible to flooding damage. Whole neighborhood flooding areas would be Lower Water St, Dewey-Mowry St., and Pleasant St (South of Washington St) Following are non-coastal areas that are also susceptible to flood damage: Boot Cove Rd (East of Bailey's Mistake Beach) Straight Bay Rd (Morong Stream Crossing), Dixie Rd (Just North of Jones Rd), South Lubec Rd (just West of Carrying Place Cove Rd), South Lubec Rd (just East of Carrying Place Cove Rd), South Lubec Rd (just North of Alan Brooks Salt Pond), North Lubec Rd (Pirate Creek Bridge), and North Lubec Rd (just South of 888 North Lubec Rd). All these roads have had repeated flood damages such as road overtopping, culvert damages and erosion.
- **Machias:** Main Street Route 1 from Machias Hardware to causeway; Kilton Drive sewer plant; Lower Court Street; Water Street from Route 1 to Spring Street.
- **Machiasport:** Beach Road, Pettegrow Point Road, Port Road
- **Milbridge:** Intersection of Rt1 and Wayman Rd at the Wyman Office flooded during the 2024 winter storms, Bayview Rd. also has been undermined by floodwaters
- **Roque Bluffs:** Both Rogue Bluffs roads have been simultaneously cut off by flooding. Shoppee Point Road was severed by the January 10, 2024, storm, cutting off access to 30 residences, the Roque Island pier, and the town's only public working waterfront. The same storm cut off access to 64 residences on Johnson Cove Road when waves broke over the approaches to the bridge, piling riprap on the road. Duck Cove was cut off by a major washout of the Duck Cove Road
- **Steuben:**
  - Pigeon Hill Road – 1st set of cross culverts experience flooding, erosion & road overtopping. Stream originates at Freemans Meadow and drains to Pinkham Bay
  - Pigeon Hill Road – Marsh area just past Joe Leighton Road floods over the road, road is low lying
  - Pigeon Hill Road – Intersection with Leighton Circle & Petit Manan Point Road experiences flooding and erosion during heavy rains
  - Colson Lane – Repeat flooding and erosion, road is low lying
  - Mogador Road – Marsh near 512 Mogador Road repeat flooding and overtopping, road is low lying
  - Eastside Road – 1st set of cross culverts experience flooding, erosion & road overtopping. Stream originates from Ponderosa and drains to Tunk Stream, then to Joy Bay.
  - Rogers Point Road – End gravel section is extremely vulnerable to storm surge, flooding and erosion
  - Quarry Road – Flooding due to run off
- **Waite:** Bingo Rd. culverts were overwhelmed in three places during the December 2023 and March 2024 storms. One was so severe the road was undermined it partially collapsed.
- **Whitneyville:** Flooding occurs on the Machias River at Rt1A, Canal Rd. Sunrise Trail, Dan Hill Brook Rt1A, Dan Mahearn Broo, Marshfield Rd. and Rt1 A.

Extent (Severity) of the Hazard

Severe flooding can cause loss of life, property damage, disruption of communications, transportation, electric service and community services, crop and livestock damage, health issues from contaminated water supplies, molds and mildew within structural components, and loss and interruption of business.

Most of the flood damage in the county is caused by winter runoff in the springtime, which undercuts or overtops local roads. When Washington County has above average snowfall for the winter, and then warmer temperatures and rainfall suddenly arrive in the spring, the snowpack melts off more quickly than the watersheds can handle. This causes local water bodies to overflow their boundaries and flood

nearby road surfaces. Usually, the road damage is not major, but it can be significant, in which case it absorbs or exceeds a major portion of a municipal road budget.

Flood damages to roads, bridges and ditches continue to be a common occurrence throughout Washington County. Most washouts are quickly repaired, but often are not mitigated due to lack of funding for proper studies and / or additional costs. As a result, replacement culverts, ditching and fill are just as susceptible to future flood damages as they were before the storm event.

Nature of Coastal Erosion Hazard: While flooding does cause erosion, wave action generated by winter storms, particularly northeasters is the most threatening and of a short-term emergency response type of natural hazard. In addition, chronic long-term erosion along many beaches is on the order of a foot per year, so there is a second form of erosion hazard that is more gradual but, nevertheless, a natural hazard that requires mitigation.

In non-beach areas bluff erosion is a natural hazard. This risk is fully described on Maine Geological Survey Coastal Bluffs Maps (Dickson 2003) and is available as a GIS coverage. In this environment, the erosion hazard area can be on the order of 75-100 feet inland of the crest of a coastal bluff.

The gradual rise in the level of the sea is having a profound effect on the nature of coastal flooding. The sea has risen about seven and a half inches since 1900 and is conservatively projected by the Maine Geological Survey to rise by roughly two additional feet by 2100. Along the Washington County Coast, if the 10-year and 100-year storm elevations are only one foot apart, a sea level rise of one (1) foot means that a storm that had a 1% chance of occurring in any one year (the 100-year storm) at the original elevation will have a 10% chance of occurring in any one year (the 10-year storm) at the new elevation. As a result, more homes, businesses, public infrastructure such as roads, and entire

communities will be subject to more devastating coastal storms, as well as coastal erosion and landslides, on a more frequent basis. There is also concern in the scientific community that global warming may be increasing the intensity of coastal storms.

A lack of detailed, accurate mapping of flood hazards along the coast has been an issue for many years. However, there have been several major mapping initiatives dating from the mid-2000s. In 2016 the US Army Corps of Engineers completed a set of Hurricane Surge Inundation Maps for all coastal Maine counties. LIDAR mapping by the Maine Geological Survey for Washington County will allow more detailed topographic maps to be prepared.

Dam Failure Risk: Maine dams were constructed incrementally over a period of 300 years. Businesses harnessed the abundant fast flowing rivers and rocky rapids for the development of energy and transportation. Many dams throughout the country are now aged, and in Maine most of these structures are nearly 100 years old and beyond the normal design life of civil engineering works. Many are low head dams constructed using local materials of stone, timber, and earth. Some old dams have now been removed or lie in ruins. Unfortunately, some of the old (or unmonitored) sites have been built upon by beavers, impounding enough water to cause road washouts when they breach after heavy rains.

Regarding the possibility of flooding from dam failure, MRSA Title 37-B, Chapter 24, also known as Maine's Dam Safety Law, classifies dams into three hazard potential ratings: high, significant, and low. Each rating carries different responsibilities for the dam owners and situational awareness on the part of downstream residents and businesses. Dam owners with "high" or "significant" potential hazard ratings must produce an emergency action plan (EAP) and forward it to MEMA for compliance with the law. The primary purpose of the EAP is to alert and warn potentially affected residents and businesses in the listed "call down area" when there is a threat of failure or actual breach. Copies are kept by the owner, relevant local, county and state agencies and must be updated regularly. See definition excerpts from the law in the table below:

Hazard Ratings	Excerpts from Dam Safety Law Definition
High	"…will probably cause loss of human life;"

Significant	"…no probable loss of human life but can cause major economic loss…"
Low	"…no probable loss of human life and low economic…losses"

Maine law requires that a state dam inspector shall conduct an inspection every six years of all high and significant hazard potential dams to determine whether the integrity, structural stability, function, or operation of those dams constitutes a threat to public safety. In Washington County, there are three High Hazard dams and five Significant Hazard dams, as shown in the following table.

High Hazard Dams in Washington County						
MEMA ID	**Dam Name**	**Other Name**	**Dam Owner**	**Town**	**Water Body**	**Regulated by**
20	Cherryfield	Narraguagus Ice Control	Cherryfield	Cherryfield	Narraguagus	FERC
19A	Grand Falls Main		Woodland Pulp LLC	Baileyville	St. Croix	FERC
18	Woodland		Woodland Pulp LLC	Baileyville	St. Croix	FERC
Significant Hazard Dams in Washington County						
26	Perry Station Dam	Perry Pump Station Dam	Passamaquoddy Water District	Perry	Boyden Stream	MEMA
24	Upper Little Falls	Pennamaquan	IFW/State of Maine	Pembroke	Pennamaquam River	MEMA
375	Vanceboro		Woodland Pulp LLC	Vanceboro	St. Croix	FERC
391	West Grand Lake	Grand Lake Stream	Woodland Pulp LLC	Grand Lake Stream Plt	W. Branch St. Croix River	FERC
440	Nash's Lake Dam		Calais	Calais	East Branch Magurrewock Stream	MEMA

Source: MEMA

A dam breach of one of the high hazard dams shown in the table could cause loss of life in the following communities:

- Cherryfield Dam: Cherryfield and Milbridge
- Grand Falls Main Dam: Baileyville, Baring Plantation, Calais
- Woodland Dam: Baileyville, Baring Plantation, Calais

A dam breach of one of the significant hazard dams shown in the table could cause property damage in the following communities/portion of the Unorganized Territory:

- Marks Lake Dam: Marshfield
- Perry Station Dam: Perry, Pleasant Point
- Upper Little Falls Dam: Pembroke
- Vanceboro Dam: Vanceboro, Lambert Lake Township, Dyer Township, Fowler Township
- West Grand Lake: Grand Lake Stream Plantation, T27 ED BPP, No 21 Township, Princeton

The St. Croix River has about as much drainage area as the flood-prone Kennebec River, but it is controlled by upstream storage dams. Moreover, the St. Croix does not have the extensive floodplain development that exists in other parts of the state.

Extent (severity) of Flood Hazard other than Dam Failure. The most susceptible communities to flood damage are Beals, Cherryfield, Eastport, Jonesport, Lubec and Machias.

High tides in conjunction with low pressure fronts can cause flooding of low-lying roads such as Deep Cove Road and Toll Bridge Road in Eastport. Flooding from a combination of spring runoff and heavy rains can also flood low-lying areas such as High Street and Middle Street in Eastport. In Machias, a combination of high tides and very high river flows have led periodically to minor flooding of Route 1 in the downtown area.

Flooding in Cherryfield can occur along the entire length of the Narraguagus River. Tidal flooding can be caused by ocean surges at times of extremely high tide and high winds associated with storm systems. Riverine flooding generally occurs in the spring from rapid runoff caused by heavy rains combined with snowmelt.

Beaver dams have caused flooding damage in Steuben, Jonesport, Columbia Falls, Whiting and Cutler.

Most of the flood damage in the county is caused by winter runoff in the springtime, which undercuts or overtops local roads. When Maine has an above average snowfall for the winter and then warmer temperatures and rainfall suddenly arrive in the spring, the snowpack melts off more quickly than the watersheds can handle. This causes local water bodies to overflow their boundaries and flood nearby road surfaces. Typically, the road damage is not major, although it can absorb the municipal road budget for an entire year and does happen in several towns everyyear.

The county's susceptibility to flooding is further exacerbated by the wide-ranging weather variables as discussed in the climate section. Due to seasonal (and regional) factors such as heavy rains, rapidly melting snowpack and/or ice jams, major flooding most frequently occurs between December and May. Based on MEMA data, the most flood prone months are April, January, and March, respectively. Floods can also be caused by hurricanes.

Flood zones are shown on some of the municipal base maps included in this Plan. Floods are described in local flood hazard studies in terms of their extent, including the horizontal area affected, and the related probability of occurrence. Flood studies use historical records to determine the probability of occurrence for different extents of flooding. The most widely adopted design and regulatory standards for floods in the United States is the 1-percent annual chance flood and this is the standard formally adopted by FEMA. The 1-percent annual flood, also known as the base flood, has a 1 percent chance of happening in any particular year. It is also referred to as the "100-year flood."

Previous Occurrences

The following table contains a summary of floods that have occurred in Washington County, as reflected primarily in Presidential Disaster Declarations.

Historical Summary of Major Flood Events in Washington County Since 1961			
Year	**Month/Day**	**General Description**	**Presidential Disaster Declaration #**
1961	May 28	Machias only - $1 million	n.a.
1978	Feb 8	High winds, tidal surge, coastal flooding (Statewide: $20,693,181)	FEMA DR-550

2000	Mar 28-Apr 26	Flooding from heavy rains, spring run-off, ice jams, 8 counties, $2,884,207	FEMA DR-1326
2001	Mar 5-31	Flooding from severe winter storms, record snowfall, high winds, heavy rains and run-off, ice jams, 6 counties, $1,761,573	FEMA DR-1371
2005	Mar 29-May 3	Severe storms, flooding, snow melt and ice jams, 13 counties	FEMA DR-1591
2007	Apr 15-23	(The "Patriot's Day Storm") Severe storms and inland and coastal flooding, 13 counties, $22,000,000	FEMA DR-1693
2009	June 18-July 8	Severe storms, flooding, landslides, 9 counties, $2,500,000	FEMA DR-1852
2010	Dec 12-19	Severe storms and flooding, 3 counties	FEMA DR-1953
2015	Spring	NOTE: Starting in March, the state's River Flow Advisory Commission met a record six times to assess the potential for spring flooding due to that winter's snowpack, extreme cold and dense river ice. The extreme cold continued throughout the spring, however, and thus abated the flood threat through a slow, steady melting of snow and ice.	N/A

Source: FEMA website and MEMA records

Flood losses in dollars by municipality. Flood losses in Washington County have not been as extensive as winter storm losses. The following table contains a summary of flood losses by town for various Federal Disaster Declarations since 2001 (the most recent year for which data by local jurisdiction is available). The table includes only public assistance losses and does not include individual and business losses which can be substantial.

Flood Losses in Dollars by Municipality or Sovereign Nation and Federal Disaster or Emergency Declarations since 2001

	2001 #1371-DR	2005 #1591-DR	2007 #1693-DR	2009 #1852-DR	2010 #1953-DR
Addison			$2,151	$2,524	
Alexander			9,276	28,519	$7,222
Baileyville	$8,575				
Baring Plt					2,597
Beals			3,838		
Calais	10,937	$1,663			294,107
Charlotte			6,015		15,571
Cherryfield		6,602			
Columbia		10,984	1,892	9,696	11,183
Cooper				9,646	13,956
Cutler		10,352			
Danforth				10,435	16,226
Dennysville		4,571			6,971
East Machias	5,568	11,481			27,327
Eastport		53,487	16,008	25,339	48,711

Harrington		18,700		28,460	
Jonesboro		10,801			
Jonesport	4,661				
Lubec	34,822	100,973			30,192
Machias		2,203	35,450	5,735	2,722
Machiasport	6,048	21,787	3,112	8,959	13,500
Marshfield				5,080	1,985
Meddybemps					4,833
Milbridge	19,133	26,624			
Pembroke		1,787			9,714
Perry		4,815			75,175
Princeton					3,867
Robbinston					24,804
Roque Bluffs		13,067	3,783		
Steuben		26,963	1,334		
Talmadge					17,425
Topsfield					12,038
Unorganized					1,615
Sovereign Nation					
Indian Township					47,346
Pleasant Point			390		
Other*	4,637*		39,000		31,208
Washington Co.	**$89,738**	**$331,496**	**$122,249**	**$134,394**	**$690,851**

Source: MEMA

Probability of Occurrence

Washington County has a major risk from flooding which is only expected to rise over the next 30 years. Currently more than 16 % of all properties are at risk, and that risk will only grow[23]. The most extreme community impact from flooding will be to infrastructure (including not just roads and bridges, but also hospitals, police, and fire), and this will have a major impact on social facilities such as schools, places of worship and government buildings. Washington County is now experiencing what were once 1-in a-100-year floods multiple times *each year*. FEMA base flow maps seem to already be out of date regarding current conditions and can only be expected to become more so.[24]

Severe Summer Storms

Severe summer storm damage typically involves downed overhead utility lines, flooding from heavy rains, debris in the roads, and often erosion, particularly along the immediate coast.

General Definition: A violent weather phenomenon producing winds, heavy rains, lightning, and hail that can cause injuries and destruction of property, crops, and livestock.

Types of Summer Weather Events: There are several different types of summer weather events in Washington County:

- **Hurricane:** An intense, tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74 miles per hour or more and blow in a large spiral around a relatively calm center called the "eye." Hurricanes are categorized on a Saffir-Simpson Scale; category one has wind speeds 74-95mph, category two with winds 96-110mph, category three from 111-130mph to category five with winds over 155mph (see Saffir Simpson Scale on page 4-26).

[23] FirstStreet.org. Climate and Financial Risk Assessment.

[24] Cough, K. "Maine's Decades Old Flood Maps Don't Always Factor in Sea Level Rise and Climate Change" *The Maine Monitor* 12-11-2022.

Damage varies considerably; damage to unanchored mobile homes in a category one storm, to evacuation of structures during a category five storm.

- **Lightning:** An electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lighting appears as a "bolt." This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit in a split second. The rapid heating and cooling causes thunder.

  NOTE: Lightning strikes kill more people annually than tornadoes and hurricanes combined.

- **Microburst:** A small, extremely intense downdraft which descends to the ground creating strong wind divergence. Microbursts are typically limited to areas less than 2.5 miles across. This weather phenomenon can produce damaging surface winds more than 100 mph. Generally, a microburst event will last no longer than 15 minutes.

- **Thunderstorm:** A storm formed from a combination of moisture, rapidly rising warm air, and a force capable of lifting air such as a warm or cold front or sea breeze. All thunderstorms have lightning and can occur singly, in clusters or in lines.

- **Tornado:** A violently rotating column of air extending downward from a thunderstorm to the ground. The distinctive, slender, funnel shaped cloud, with wind velocities up to 300 miles per hour at the central core, destroys everything along its narrow ground path. See Fujita Scale on page 4-27.

Location of Hazard

The entire County is vulnerable to one or more severe summer storms each year, usually in the form of thunderstorms. The effects of summer storms are usually more common in the inland areas of the county, and less noticeable along the coast where the cooling effects of the ocean tend to suppress thunderstorm activity.

Location of municipal severe summer storm impact areas. The following is a summary of areas that are impacted by severe summer storms in specific jurisdictions, as identified in the Washington County Hazard Mitigation Planning Municipal and Community Surveys in 2024.

- **Addison:** South Addison, and specifically Cape Split and Mooseneck are supported by only these two transmission lines, these locations have a greater propensity for the frequency and duration of power outages.
- **Alexander:** Overhanding trees on Tommy Long Rd, and the Spearin Rd. make them vulnerable to power outages
- **Calias:** DiCenzo Athletic Complex Flooding
- **Columbia:** Whole town is susceptible to power outages.
- **Cutler:** Whole town is susceptible to power outages.
- **Lubec:** Power outages and debris removal could happen anywhere. There is a higher risk of these in the outlying areas as they are more wooded and remote. We have a lot of long driveways in remote wooded areas. There are some subdivisions off town-maintained roads. One example is Coffins Neck Rd.
- **Machias:** Town wide; power outages in Kennebec, flooding of downtown.
- **Machiasport:** Beach Road, Pettegrow Point Road, Port Road
- **Milbridge:** Flooding on Rt1 at Wyman's Rd. and on Bayview Rd.
- **Northfield:** Entire town experiences power outages.
- **Roque Bluffs:** Nearly everywhere in town is vulnerable to power disruptions due to ice and downed trees. The problem is most severe (judged by frequency of outages) on Johnson Cove Road. This winter, power was frequently out toward the east end of the road, with two incidences of more than five days each and several 1–2-day outages. The bridge over Johnson

Cove Road is vulnerable to breaking waves and flying rocks during severe storms out of the south. Shoppee Point Road was heavily damaged when high surf washed away the dunes separating the state beach from the road and further along where cliff erosion has begun to affect the road.

- **Steuben:** Power Outages (Most frequent outages occur on Bogus Meadow Rd, Number 7 Rd, Dyer Bay Rd, Mogador Rd, Stanley Point Road, Eastside Road and Pigeon Hill Road. Boat Ramp at Pinkham Bay – Debris
- **Whitneyville:** Power outages and flooding on Rt. 1A crossing the Machias River and on the Sunrise Trail.

Extent (Severity) of the Hazard

Washington County is subject to summer storms. During summer months, southwest to southerly winds become quite prevalent across the state. Because of the frequent formation of sea breezes, southerly winds are prevalent. When severe summer storms arrive in Washington County, high winds can fell trees and branches onto power lines, causing power and communication outages. Heavy rains that often accompany thunderstorms can result in flash flooding or erosion. Lightning strikes can start fires. Any of these weather events can cause personal injury or property damage.

The impact of summer storms in Washington County is usually restricted to flooding and erosion caused by the large amounts of moisture these storms can carry. Summer storms can cause damage to low lying coastal roads, boats, beaches, seawalls, and land areas.

Previous Occurrences

The most damaging types of summer storms in Washington County are hurricanes that can cause storm surge, widespread flooding, and damaging winds. The following tables provide information on various categories of hurricanes.

Saffir-Simpson Hurricane Scale		
Category	**Wind Speed**	
	mph	**Knots**
5	>156	>135
4	131-155	114-134
3	111-130	96-113
2	96-110	84-95
1	74-95	65-83
Non-Hurricane Classifications		
Tropical Storm	39-73	34-64
Tropical Depression	0-38	0-33

The following table contains a summary of hurricanes that have occurred in Washington County going back to 1954. Historically, of all Maine's natural hazards, hurricanes are the most likely to cause deaths. The impacts would vary widely, depending on whether it struck a rural or urban population.

Historical Summary of Hurricanes in Washington County			
Year	**Incident Period**	**Description**	**FEMA Disaster Declaration #**
1954	Sept 2 -15	Hurricane Edna: Statewide- 8 deaths, power outages, $7 million in damages	Presidential #24
1963	Oct. 29	"Ginny" - Statewide – unknown Damages	-

2023	Sept. 15-17	Hurricane Lee	Federal Disaster Notice 3598

Sources: MEMA records and FEMA website

Maine's experience with hurricanes in prior decades raised awareness of the state's vulnerability, but event memories and lessons learned often fade within a period of only two or three years. However, public awareness became heightened in September of 2011, as Hurricane Irene tracked into New England resulting in record breaking damages and multi-state declarations. When it reached Maine as a tropical storm, Irene still resulted in declaration DR-4032 because of the extensive flooding to roads from the heavy rains and the debris cleanup and power outages from the high winds. The four counties of Franklin, Lincoln, Oxford, and York were part of the declaration. In 2012, Hurricane Sandy devastated much of the northeast coast, but spared Maine.

Through repeated warnings and advice via all social media prior to Irene, the general population was very aware of the impending storm. Stores were busy as customers stocked up and utility crews were prepositioned. However, the lack of recurrent Cat 1-5 hurricanes for the last four decades tends to moderate local attitudes toward making extensive preparations. To date, the worst hurricane damage occurred in 1954 when Hurricanes Edna and Carol swept into the state within a two-week period. Maine suffered a total of eleven deaths and damages of $17 million because of these two storms. The winds downed trees, limbs, and power lines. The resulting flooding from the heavy rains washed cars into ditches.

While not directly hitting Maine, Hurricanes Ida, and Lee (2021 and 2023 respectively) caused wide scale power outages that in some situations endured for more than a week.

There is also the potential for a tornado to occur in Washington County. The following is taken from MEMA's website:

> "The scale used to measure tornado damage is the Enhanced Fujita Scale (named after Theodore Fujita, a famous tornado damage expert). The scale is commonly referred to as the E-F Scale. Based on scientific studies of tornado damage, the original Fujita Scale was modified, and the new "Enhanced Fujita Scale" was officially implemented in 2007."

The Enhanced Fujita Tornado Scale (abbreviated)

Tornado Category	Wind Speeds	Typical Effects
EF-0	65 to 85 mph	Light damage
EF-1	86 to 110 mph	Moderate damage
EF-2	111 to 135 mph	Considerable damage
EF-3	136 to 165 mph	Severe damage
EF-4	166 to 200 mph	Devastating damage
EF-5	166 to 200 mph	Incredible damage

The only recorded EF-2 tornado reported in Washington County was in 1961.

Probability of Occurrence

There have been no probability studies to indicate the frequency of summer storms. However, Washington County's location in the northeast, and its long experience with summer storms, indicate that each summer, there is a high probability that summer storms will occur. However, the most severe forms of summer storms, hurricanes, and tornadoes, occur very infrequently in Washington County. The last hurricane to cause significant damage in Washington County was Hurricane Edna in 1954. In terms of tornadoes, there have been no F3, or greater tornadoes reported in Maine. The only recorded EF-2 tornado reported in Washington County was in 1961. EF-2 tornadoes include winds of 111 to 135 miles per hour and are considered significant tornadoes. F2 tornadoes can tear roofs off frame houses, lift and move frame houses with weak foundations, demolish mobile homes and snap or uproot trees.

Wildfire

General Definition: A wildfire is a fire that burns vegetative cover such as grass, timber, or slash. A wildfire is a natural phenomenon initially finding its origin in lightning. However, humans have become the greatest cause of wildfires in Maine.

Types of Wildfires: there are two types of wildfires:

- Wildland fires burn vegetative cover or forest fuel.
- Wildland Urban Interface Fires are created where homes meet with highly volatile forest fuels.
-

With an increase in drought and other extreme conditions driven by climate change and seen across the state, wildland fires could originate anywhere, potentially placing a large burden on the state's limited resources. Maine Forest Service uses several different scales to measure the intensity of wildfire

Wildfire intensity scale	Definition/use
Energy Release Component (ERC) [5]	Available energy in BTU per unit area within the flaming front at the head of a fire, incorporating all live and dead fuels available.
Initial Spread Index [6]	Integrates conditions of fuel moisture and surface windspeed to estimate the potential for wildfire spread.
Keetch-Byram Drought Index (KBDI) [7]	A drought index designed specifically for wildfire potential assessment, representing the net effect of evapotranspiration ad precipitation in producing cumulative moisture deficiency in deep duff and upper soil layers.
Probability of Ignition [8]	Probability of wildfire ignition estimated from temperature, shading from forest canopy/cloud cover, and 1-hour fuel moisture content.

Location of Hazard

All parts of the county are potentially subject to wildfire. Nearly 85% of the county is forest land and the accessibility by vehicle to many areas is limited. The most northern portion of the county has the least accessibility to the productive forestland due to the lack of roads and development and the central and southern portion of the county has a larger number of homes and businesses within the Urban-Wildland Interface.

The most common causes of wildfire are man-made due to debris burning (this includes permitted burns such as the burning of blueberry barrens), machine uses, campfires, arson, and smoking. The Maine Forest Service has made great strides in educating the public, through the internet and media outlets, on the dangers of wildland fires and mitigation activities.

Location of municipal wildfire impact areas. The following is a summary of areas that could be impacted by wildfires in specific jurisdictions, as identified in the Washington County Hazard Mitigation Planning Municipal and Community Surveys in 2024.

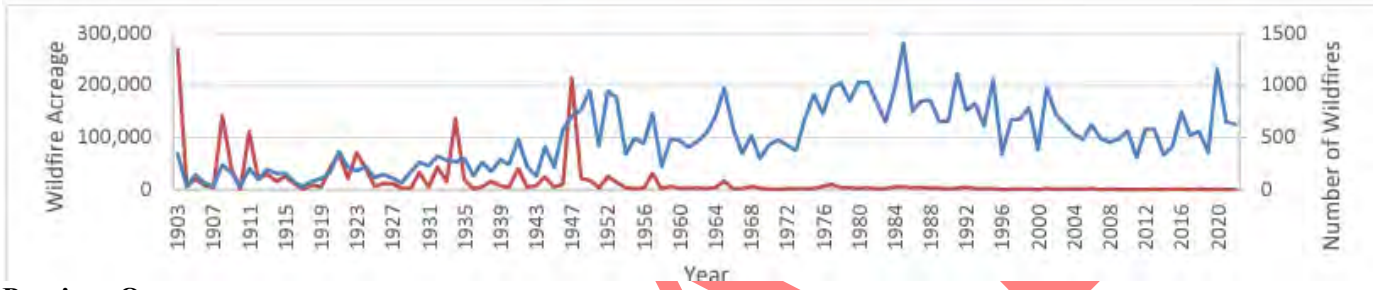
- **Baileyville:** Most of town susceptible
- **Beals:** The entire town is subject to wildland forest fires. Large amounts of debris and blowdowns would complicate firefighting. Of particular concern are the Sea Duck Preserve, backfield Park and Carver Industry Rd.
- **Calais:** Moosehorn Wildlife Refuge, Devil's Head Conservation Area, Nash Lake recreation area, Transfer Station wood brush storage area.
- **Columbia:** Large amounts of slash on the ground could make it difficult for fire crews to respond effectively.
- **Danforth:** Town is heavily forested, a fire on Great Cove Rd. could trap many residents.
- **East Machias:** Mostly wooded and susceptible to fires.
- **Lubec:** All South Lubec area is susceptible to wildfires/forest fires. Quoddy Head State Park is in this area. All the area West, North and South of the intersection of South Lubec Rd and Rt 189 out until you reach Trescott Twp line is susceptible to wildfires/forest fires. These are heavily wooded areas with multiple park/conserved land areas.
- **Machias:** Entire area outside the downtown is vulnerable.
- **Northfield:** Entire town if vulnerable, many homes and the municipal buildings are surrounded by trees. There are large amounts of debris on the forest floor.
- **Roque Bluffs:** Virtually the entire town of Roque Bluffs is highly vulnerable to wildfire. Access to and egress from the town could easily be cut off during a major fire. Most of the residences in town are part of subdivisions served by only one privately-owned, sub-standard dirt road. Fires near the base of Cow or Calf Point, along the eastern 2/3 of Johnson Cove Road, at the Nepp Point Rd, or around the Duck Cove Road could each cut off access to or egress from many residences. There is nowhere on Cow Point for residents to be taken off by boat during an emergency, and nowhere for a helicopter to land. Virtually all forested areas of town are unnaturally dense and have a large fraction of dead or dying trees; in short, dangerously high fuel loads. Roads are not cleared far enough back to be effective fire breaks. Few homes have a sufficiently wide, cleared defensive perimeter around them. A significant fire at any one of these locations could be catastrophic for the town
- **Steuben:** Unionville Road – A large section of this road is undeveloped and has been logged repeatedly. Slash and remnants left behind have created dry kindling for the spread of a wildfire. There are no homes on this property, but the property is used frequently by hunters & ATV riders.
- **Whitneyville:** Hanscom Subdivision and Village areas on Rt 192

Extent (Severity) of the Hazard

A wildfire in October 1825, burned 3,000,000 acres in Maine and New Brunswick. The most severe wildland fire in the state's history occurred in October of 1947. This fire burned 205,678 acres and caused 16 deaths.

Several demographic factors make Washington County's rural areas vulnerable to the threat of wildfires. Out-migration from rural areas often leaves an older, more vulnerable population and shrinking tax bases to fund local, usually volunteer fire departments. In Washington County, as in all New England, Maine's housing stock is also aging. When old farm homes and wood frame buildings are in remote areas, it can be very challenging for volunteer fire fighters to respond before the structures are destroyed. It should be noted that three municipal fire stations have closed (Baring, Cooper, and Topsfield) and it is likely that several more could close during the next five years.

Well-distributed rainfall normally reduces forest fire risks, but seasonal variations, rapidly draining soils and unusually dry periods can induce major blazes. In addition, insect damage (such as the hemlock woolly adelgid and spruce budworm) diseases, severe weather, and residential and commercial developments in wooded areas greatly increase the potential for catastrophic fires. Over time, a considerable fuel supply can accumulate from dead trees left standing on the forest floor after insect infestations or from logging operations.



Previous Occurrences

Historically, forest fires were one of the state's most significant hazards. Maine averages about 700 low acreage forest fires annually. Today, about 90% of all forest fires are caused by human activity, while 10% are caused by lightning. During dry periods, fire danger increases rapidly. The following table summarizes the most significant wildfires that have occurred in Washington County, beginning with the disastrous 1947 fire that affected much of Maine.

Historical Summary of Major Wildfires in Washington County

Year	Month	Day	State-Estimated Acres Affected	Declaration
1947	Oct	7-29		no
1960	Sept	5		no
1965	Aug			no
1978	Aug	23	10,000 acres - Machias	no
1985	May	1	1,000 acres near Whiting	no
1994	Apr	30	515 acres - Addison	no
1998	Apr	13	657 acres - Addison	no
2001	May	4	495 acres - Addison	no
2007	May	3	750 acres – Centerville TWP	no

Updated by Jeff Currier, Maine Forest Service, 2010.

Probability of Occurrence

While probability studies have not been done, based on historical records of fires, the Maine Department of Conservation, Maine Forest Service, Forest Protection Division, anticipates that there will be between 600 and 700 low acreage fires (from all causes) each year. During the drought in 2020 there was a 170 percent increase in wildfires over 2019, resulting in the highest fire count in 10 years. More smaller fires are expected as the residence continue to be built in forested areas, and as diseases and high winds increase the levels of dead wood in Washington County's forests.

Drought

Maine is overall considered a “wet” state; however, drought conditions can occur about every decade or so. These conditions can lead to a very high forest fire thread during the late summer and early fall. Further it possesses a significant risk to the agricultural economy. In extreme cases it can cause significant changes in the groundwater table drying up wells making homes and potentially entire towns unlivable. Unlike other disasters that unfold quickly, droughts take place over weeks, months or even years, yet significant property damage can be attributed to them.

> “Drought is the number one risk factor for the State's agricultural economy, as it is the basis of over 1.2 billion dollars of food and fiber products annually. It employs 22,000 workers across the state, preserves a lifestyle for over 5,500 Maine families, and provides stewardship of over 1.5 million acres of land and wildlife habitat. Since approximately 45% of the state's population relies on dug or shallow wells, a prolonged drought period increases the risk of dry wells also." Maine Emergency Management Agency.

Definition

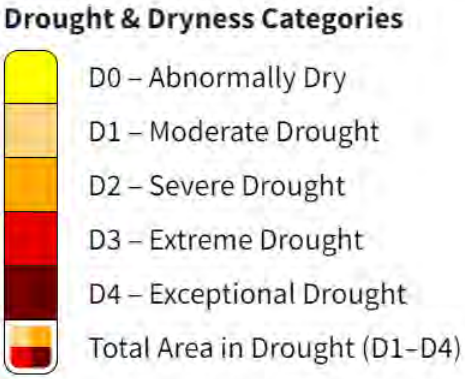
A drought is defined as "a period of abnormally dry weather sufficiently prolonged for the lack of water to cause a serious hydrologic imbalance in the affected area." - Glossary of Meteorology (1959)11.
In easier-to-understand terms, a drought is a period of unusually persistent dry weather that persists long enough to cause serious problems such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area.

There are four different ways that drought can be defined.

Types of Droughts in Washington County:

- **Meteorological -** a measure of the departure of precipitation from normal. Due to climatic differences, what might be considered a drought in one location of the country may not be a drought in another location.
- **Agricultural -** refers to a situation where the amount of moisture in the soil no longer meets the needs of a particular crop.
- **Hydrological -** occurs when surface and subsurface water supplies are below normal.
- **Socioeconomic -** refers to the situation that occurs when physical water shortages begin to affect people." Drought definitions.

Another sub-type of drought is Snow drought, a form of meteorological drought that occasionally occurs in Maine and other regions that normally accumulate snowpack in winter. Snow drought is a period of abnormally low snowpack for the time of year that can occur under two separate conditions. First, a "dry" snow drought is caused when a lack of winter precipitation leads to a reduced snowpack. Second, a "warm" snow drought is caused when there are unseasonably warm temperatures combined with winter precipitation that occurs as rainfall that does not contribute, and may even reduce, the total snowpack. A reduced snowpack will eventually contribute less snowmelt in spring, potentially contributing to early-season drought.
The Palmer Drought Index is used for activating the Drought Emergency Plan. The Drought Severity Index (Palmer 1965) was developed to measure the departure of the moisture supply at specific locations. The objective of the Palmer Drought Index is to provide measurements of moisture conditions that were standardized so that comparisons using the index could be made between locations and between months.



Nature of Hazard

Drought is a normal recurring feature in all of Maine's climatic regions. While all droughts originate with a deficiency of precipitation, drought is a unique hazard due to the usually slow progression of the phenomenon. Drought impacts respond to precipitation anomalies on varying timescales. This makes it difficult to determine a clear beginning or end to any drought

event, particularly ones that are prolonged. The duration of drought can vary from several weeks to several years. (Maine State Hazard Mitigation Plan).

Location of Hazard
Since drought classification is relative to average local precipitation and surface, and groundwater levels, the entire county is susceptible to drought. Most of Washington County was affected by severe drought conditions in 2020. During early September of that year, the entire county was experiencing moderate drought and nearly of the county was in severe drought.[25][26]

Location of municipal drought areas. While the whole county is vulnerable to drought the agriculturally based communities are most vulnerable to economic damage. The following is a summary of areas that are most impacted by drought because of this intersection.

Town	Location	Description
Columbia	115 Pea Ridge Rd	Dry well during drought
East Machias	East Machias Fishway on Gardner Lake	Fishway dries up during drought
Lubec	North Lubec	Susceptible to drought hazards
	Coffins Neck and Straight Bay Road	Susceptible to drought hazards
	Lead Mine Road	Susceptible to drought hazards
Machias	659 Kennebec Road	Reported dry well
	Schoppee Farm	Reported dry well during drought
Northfield	Fulton Lake	Water levels affected by drought and may impact area wells
	Bog Lake	Water levels affected by drought and may impact area wells
Waite	Southwestern streams	Area map did dry up completely in 2019 or 2020
Whitneyville	Blueberry Barrens	Irrigated barrens affected by drought conditions
	Blueberry Barrens- North	Commercial barrens affected by drought
	Blueberry Barrens- South	Commercial barrens affected by drought conditions

Extent (Severity) of the Hazard
The extent of drought can vary significantly from localized events in a specific watershed to a statewide occurrence, from short-term (one summer) to long-term duration (several years), or from an abnormally dry spell to a drought of exceptional intensity.

Previous Occurrences
Since Maine is 90% forested, drought years tend to affect the whole state. Some of the most severe droughts happened in the late 1940s, mid-1960s and more recently during the 2001-2003 period. The U.S. Geological Survey has identified the following drought periods in Maine:

- 1938-43
- 1947-50
- 1955-57
- 1963-69
- 1984-88
- 1999-2002

[25] Cromartie, J. "Net Migration Spurs Renewed Growth in Rural Areas of the United States" *Rural America at a Glance 2023.* USDA. **https://www.ers.usda.gov/amber-waves/2024/february/net-migration-spurs-renewed-growth-in-rural-areas-of-theunitedstates/#:~:text=The%20chart%20below%20shows%20that,locations%20continued%20in%202021%E2%80%9322.**

[26] https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx

The drought years 1999-2002 were the driest period of hydrologic drought in more than 50 years of record in Maine. Record lows were set in April 1999, and in September 2001 and 2002. Although stream flows recovered to normal levels during 2000, ground-water levels indicate that the drought carried over through 2000 into 2001 and 2002 in some locations. According to a recent study by the Department and the Soil and Water Conservation Districts, Maine farmers lost over $32 million dollars because of the drought, causing to be the most damaging drought to date. Aroostook and Washington Counties were the hardest hit.

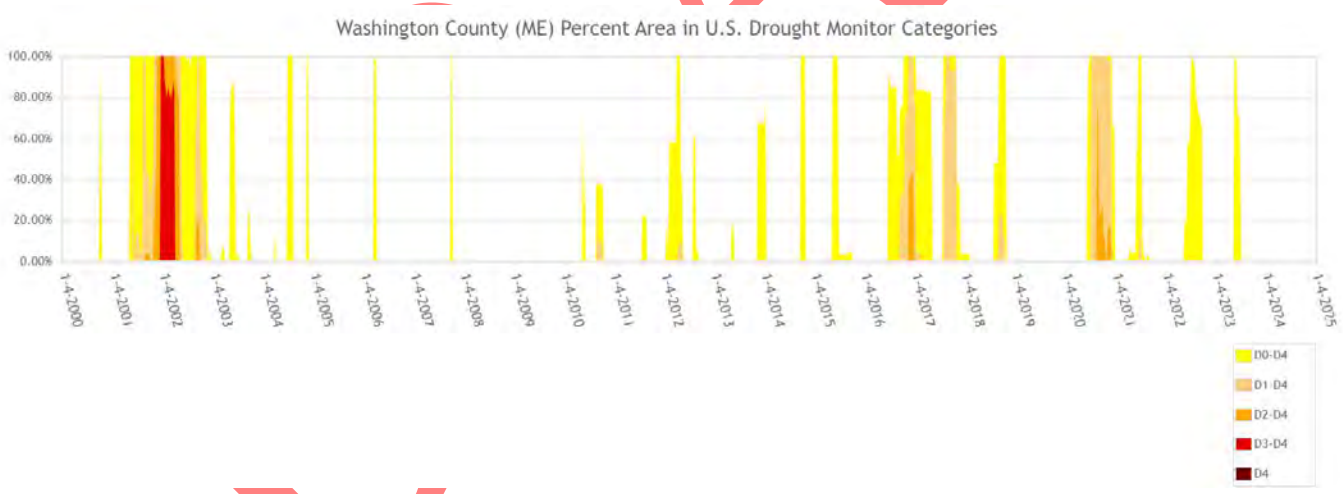
The period from 1947 to 1950 may have been the only comparable period of drought to the 1999-2002 period, in Maine. The 1960s drought, although extreme in the far northern and far southern regions of the State, was most exceptional for its duration from 1963 to 1969.[27]

Since 2012, the U.S. Drought Monitor at the USDA has measured and shared the extent of drought events as they occur. In 2020, Washington County began experiencing drought conditions in June further extending to severe drought conditions into October. Impacts throughout the county included private wells going dry, public water systems being strained, and crop yields diminished. The Maine Department of Environmental Protection reported that water levels in many streams, rivers, lakes, ponds, and wetlands were below the summer season August median since early June.
The following table contains a summary some of the most severe droughts that have occurred in Washington County, as reflected primarily by the USDA.

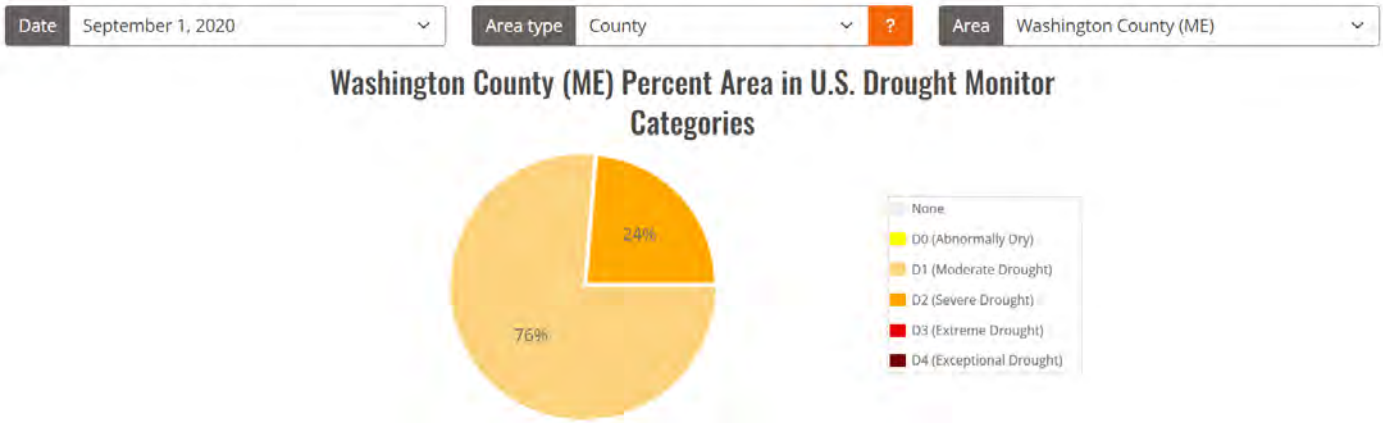
Historical summary of Droughts Affecting in Washington County Since 2012

Year	Month/Day	General Description	Declaration #
2020	Aug 18, 2020		S4837
2023	April 30, 2023—Oct 15, 2023		S5654

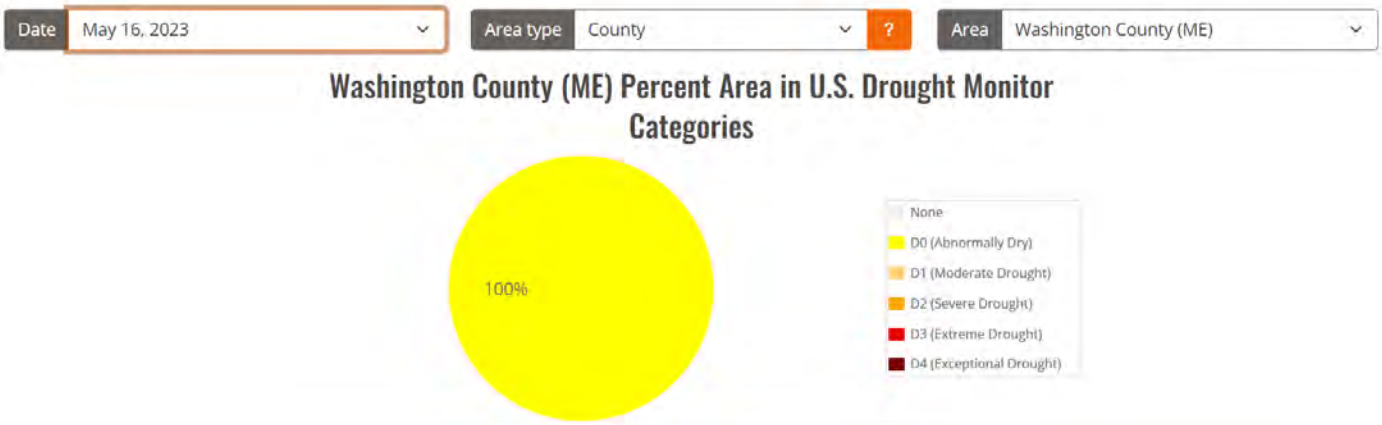
Source: USDA Farm Service Agency Website



[27] Lombard, P. J. Drought conditions in Maine, 1999-2002: A historical perspective. 2024 10.3133/wri034310



Dry weather persisted in much the Northeast, although Hurricane Teddy grazed eastern Maine with some gusty winds and mostly light rain on September 22-23. However, cooler weather replaced previously warm conditions, with many locations reporting an end to the growing season due to sub-freezing temperatures. Sub-freezing, daily-record lows for September 19 included 21°F in Saranac Lake, New York, and 27°F in Montpelier, Vermont. In areas where pastures are stressed by drought and hard freezes occurred, significant re-growth of grass may not occur this autumn even if widespread precipitation returns. On the same date, USDA topsoil moisture was rated 100% very short to short in Maine and New Hampshire. Streamflow in many areas of the Northeast is very low for this time of year. Some of the areas hardest hit by drought are reporting wells going dry and new wells needing to be dug. Given the mounting drought impacts, significant deterioration was shown in several areas from Pennsylvania to Maine. Notably, a new area of extreme drought (D3) was introduced in southern sections of Maine and New Hampshire.



With dry weather dominating areas from Pennsylvania and New Jersey northward, there was a focus on emerging dryness, especially in northern New England. In fact, abnormally dry conditions (D0) were introduced in much of northern and eastern Maine, as well as the northern tip of New Hampshire. On May 14, the U.S. Department of Agriculture reported that topsoil moisture was rated 39% very short to short in Maine, up from 29% the previous week. From March 1 – May 16, precipitation in northern Maine totaled just 3.97 inches (54% of normal) in Houlton and 4.12 inches (55%) in Caribou.

Probability of Occurrence

In this historically water-rich state, rising summer temperatures coupled with little change in summer rainfall are projected to increase the frequency of short-term (one- to three-month) droughts and decrease summer stream flow, particularly if higher emissions prevail. By late century, for example, short-term droughts are projected to occur annually under the higher-emissions scenario (compared with once every two to three years, on average, historically), while summertime conditions of low stream flow (detrimental to native fish such as the Atlantic salmon) are projected to last an additional month, increasing stress on both natural and managed ecosystems. By contrast, little change in either drought or stream flow is expected under the lower-emissions scenario.[28]

Mitigation

[28] *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*, Northeast Climate Impacts Assessment (NECIA, 2007).

Early identification of drought threats is important to educate the public in conservation measures and minimize damage. The Department of Agriculture, Conservation and Forestry and the Department of Environmental Protection have programs, regulations, policies, and educational materials to assist in minimizing this hazard.

Assessing Vulnerability: Overview	
Requirement §201.6(c)(2)(ii): (The risk assessment shall include a) description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of: (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate. Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.	
Elements	**B3.** Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction?
	B4. Does the Plan address NFIP insured structures within each jurisdiction that have been repetitively damaged by floods?
	D1. Was the plan revised to reflect changes in development?

B3. Vulnerability of Washington County to each Hazard and impacts of each Hazard on the County

Vulnerability of Washington County to each Hazard

Severe Winter storms. Washington County's location in Northern New England places it in a high- probability area for winter storms. While most winter storms in Washington County occur during the winter season of December through March, there are occasional winter storms in the late fall (November and early December) and in the spring (March – April). However, the severity of storms is typically most serious in January and February, with storms in the earlier and later parts of the seasons usually being of lesser magnitudes.

The time of day at which storms occur is also important, as overnight storms allow for the closure of schools and businesses, whereas storms during the day force people to travel home during storm conditions. Based on experience, storms are most likely to occur overnight or during the morning, but afternoon storms are still somewhat likely.

A major ice storm of the severity that occurred in 1998 could impact nearly all of Washington County and threaten the overhead electric and telephone lines. Roads may be closed due to debris from fallen branches and utility lines.

As noted earlier in this Assessment, Washington County has been included in several Presidential Disaster Declarations for winter storms. Washington County contains at-risk populations that could be impacted by a major winter storm.

Flooding. Some of the county's most serious flooding is caused by winter runoff in the springtime when water undercuts or overtops local roads. Coastal beach and bluff erosion are also an issue in several locations. Most of the developed areas in Washington County are located outside of designated flood plains and are thus not very vulnerable to flooding. On the other hand, many parts of the county are very rural in nature and are served by a network of rural roads that do not have proper storm drainage systems. These roads are very vulnerable to flooding caused by heavy downpours and/or the blockage of drainage systems by ice or debris, even though these roads may not be in an identified flood plain. Complicating precipitation driven flooding is sea level rise. Infrastructure on or near the coast can be sandwiched by intense rain events paired with high tides and storm surges.

Severe Summer Storms. The entire county is vulnerable to thunderstorms, microbursts, and high winds, especially from the very high winds that often accompany severe coastal summer storms. Heavy rains that often accompany such storms can erode vulnerable shoreland areas. Severe high winds can fell trees and branches onto power lines, causing power and communication outages. Heavy rains can cause considerable damage to roadways and infrastructure as well as loss of utilities. Any critical facility could be affected by severe summer storm conditions.

Wildfires. Washington County is heavily forested and could be vulnerable to wildfires from a variety of causes. However, most of the organized municipalities in Washington County are served by capable fire departments that also have active mutual aid agreements with surrounding municipalities to increase response capabilities. The Maine Forest Service has been very active in forest fire prevention activities, and, through meetings convened by the Washington County Emergency Management Agency, meets periodically with municipal fire chiefs on matters related to wildfire prevention and response activities.

Impacts of each hazard on Washington County

Severe Winter storms. The impacts of severe winter storms include road closures (and the subsequent inability of emergency vehicles to provide help), the loss of power for extended periods of time, high costs to local governments for snow removal/ice treatment efforts, and loss of income to businesses and individuals due to business closures. Roof collapses, both residential and commercial, are rare but they can occur when snow loads become extreme.

Loss of electrical power and communication services can impede the response of ambulance, fire, police, and other emergency services, especially to remote or isolated residents. Roads can become impassable as the result of snow accumulation and drifting. Business closings can occur due to road conditions and loss of power. Structural failures are possible as the result of snow loads on roofs. This is of particular concern with respect to older structures built prior to the advent of snow-load design standards. Heavy snow loads can also result in the formulation of ice dams on roofs, leakage, and damage to building interiors.

Along the coast, high winds associated with northeasters can also cause damage. The majority of coastal storms cause damage only to low coastal roads, boats, beaches, and seawalls. Occasionally, a major storm accompanied by strong onshore winds and high tides results in surge and wave activity that causes property damage and erosion.

The ice storm of January 1998 had a major impact on Washington County, in part because the entire electrical grid feeding power from Bangor Hydro Electric was damaged. Ice accumulated on the utility lines, causing them to break. The costs of the ice storm were substantial. Utility crews from Maine and throughout the East Coast worked around the clock to clear downed trees and replace power lines.

In November of 2004, high winds associated with a coastal storm in Milbridge caused a salmon barge to break loose, which in turn smashed into the town pier, causing about $40,000 in damage to the pier.

Flooding. Damages resulting from flooding in Washington County can include damages to roads and their respective drainage systems. Historically, flood damages have included partial or complete road washouts, as well as severe erosion of roadside ditches, resulting in hazards to motorists if their vehicles go off the road.

Severe flooding can cause loss of life, property damage, disruption of communications, transportation, electric service and community services, crop and livestock damage, health issues from contaminated water supplies, molds and mildew within structural components, and loss and interruption of business.

Most of the flood damage in the county is caused by winter runoff in the springtime, which undercuts or overtops local roads. When Washington County has above average snowfall for the winter, and then warmer temperatures and rainfall suddenly arrive in the spring, the snowpack melts off more quickly than the watersheds can handle. This causes local water bodies to overflow their boundaries and flood nearby road surfaces. Usually, the road damage is not major, but it can be significant, in which case it absorbs or exceeds a major portion of a municipal road budget.

Severe Summer Storms. The damages from severe summer storms typically involve the washout of roads, downed utility lines and debris clearance. If severe enough, this can result in the loss of income to businesses and individuals due to business closures.

Wildfires. The primary impacts include damages to homes located in the wildland-urban interface and loss of valuable timberland. A larger percentage of homes in rural towns are in the wildland-urban interface than homes in village areas.

B4. Repetitive Loss Properties

The National Flood Insurance Program (NFIP) maintains a file of repetitive loss properties (properties that have experienced more than one flood loss). Based on a review of repetitive loss properties contained in an Excel spreadsheet from the NFIP dated 11 September 2015, as well as an updated tabled dated 28 November 2016, there are no repetitive loss properties in Washington County.

Assessing Vulnerability: Identifying Structures

This section of the Plan identifies existing buildings, infrastructure and critical facilities within the county and the hazards to which these facilities are susceptible. A critical facility is defined as a facility in either the public or private sector that provides essential products and services to the public, is otherwise necessary to preserve the welfare and quality of life in the county, or fulfills important public safety, emergency response, and/or disaster recovery functions.

The Washington County Hazard Mitigation Planning Teams used GIS map data, information contained in local comprehensive plans, state data bases, and local knowledge to locate the county's buildings, infrastructure and critical facilities and determine which are most likely to be affected by hazards. The four hazards most likely to impact the county are winter storms, flooding, summer storms and wildfires. The analysis revealed the following:

Vulnerability of Existing Buildings, Infrastructure and Critical Facilities Severe Winter Storms

- **Buildings.** All buildings in Washington County could be vulnerable to winter storms. Damages can include burst water pipes during power outages, interior water damages due to ice dams forming on roofs, and occasionally, roof collapses due to heavy snow loads.
- **Infrastructure.** A "Northeaster," blizzard, ice storm or severe coastal storm of the severity that occurs once every 3-5 years, and/or a winter storm with severe winds, could have a negative impact on all roads in the county and on all overhead electrical power and telephone lines. Roads may be covered in snow, washed out or blocked with tree debris. Utility lines and poles could be felled. A coastal storm could cause general erosion to local roads and beach areas and wind damage to coastal buildings, as well as flooding of some roads.
- **Critical Facilities.** All critical facilities in Washington County could be vulnerable to winter storms in the same manner that individual buildings are vulnerable. However, some of the critical facilities throughout the county have back-up generator systems which allow heating systems to continue operating during a power outage.

Flooding.

- **Buildings.** The only critical facilities in buildings in Washington County that are known to be in the 100-year floodplain include four buildings located at the Port Authority in Eastport. The most likely flooding of these buildings will occur as the result of coastal storms. The following table summarizes Information on the four buildings at the Port Authority.

Buildings with Potential Vulnerability to Flooding

Property Name	Street Address	Town	Content Value	Building Value	Total Value
Administration Building	16 Deep Cove Road	Eastport	$123,500	$3,491,978	$3,615,478
Boiler Building	16 Deep Cove Road	Eastport	$100,000	$698,396	$798,396
Pier	16 Deep Cove Road	Eastport	0	$800,000	$800,000
Classroom and Shop	16 Deep Cove Road	Eastport	$947,500	$3,491,978	$4,439,478

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- **Infrastructure.** In other areas, the most likely flooding will come from spring snow melt, as well as coastal flooding that occurs during a severe storm or a category 1 hurricane. A major coastal storm could impact the downtown roadways in Machias and on the island community of Beals.
- **Critical facilities**. All critical facilities in Washington County are vulnerable to flooding in the same manner that individual buildings are vulnerable. However, some of the critical facilities throughout the county have back-up generator systems, which allow building systems to continue operating during a power outage. The municipal base maps that are included in this Plan update identify the location of critical facilities.

Severe Summer Storms

	Town Office	Fire/Rescue	Police	Public Works*	School	Library	Assisted Care, Hospital/Health	Sewage Treatment	Water Supply	Dams	Bridges	Airport, Landing Strip	Hazardous Facility	Other
Addison	1	2			1	1			1	1	5			3
Alexander	1	1			1									
Baileyville	1	1	1	1	2	1		1	1	1	1		1	
Baring Plt		1								6		1		
Beals	1	1			1									3
Beddington	1	1								2	1			
Calais	1	2	1	1	3	1	1	1	1	10	1		1	1**
Centerville		1												
Charlotte	1	1												
Cherryfield	1	1			1	1				1	3			
Codyville Plt											4			
Columbia	1	1									7			
Columbia Falls	1	1			1						3			
Cooper		1									2			
Crawford		1								2				
Cutler	1	1			1	1						1		
Danforth	1	2		1	1	1	1			1	3			
Deblois	1	1		1							2	1	2	
Dennysville	1	1												
East Machias	1	1	1		3	1				1	3		1	
Eastport	1	1	1	1	3	1	2	1	1			1		4**
Epping		1												
Grand Lake Stream		1								1	2			
Harrington	1	1			1		1		1					
Indian Township	1	1	1	1	1		1	1	1		2			1**
Jonesboro	1	1			1					2	2			1**
Jonesport	1	1			2	1	2			2				1**
Lubec	1	1		1	1	1	2	1	1		4	1		10**
Machias	1	1	1	1	2	1	3	1	1		1	1	1	
Machiasport	1	1		1	1						1			2**
Marshfield	1	1								1	1			
Meddybemps	1	1								4	1	1		
Milbridge	1		1	1	1	1		1			2			
Northfield	1										1			
Pembroke		1			1					3	7			1**
Perry	1	1		1	1				1		2	1		
Pleasant Point	1	1	1	1	1		1							1**
Princeton	1	1		1	1	1	1				1	1		
Robbinston	1	1		1	1									
Roque Bluffs	1										2			1
Steuben	1	1		1	1	1				1	6			
Talmadge		1												
Topsfield	1	1				1					3			
Vanceboro		1		1	1						1			

Waite		1			1					1	2			
Wesley		1			1					1	2			
Whiting	1	1			1					3	4			
Whitneyville	1	1				1					4			
Washington Co.	**36**	**47**	**8**	**16**	**38**	**15**	**15**	**7**	**9**	**44**	**84**	**9**	**6**	**28**

- **Buildings.** All buildings in Washington County could be vulnerable to severe summer storms. Damages can result from debris like tree limbs, and from high winds and interior water damages due to wind-driven heavy rain.
- **Infrastructure.** A summer storm could cause erosion to local roads and beach areas and wind damage to coastal buildings, as well as flooding of some roads.
- **Critical Facilities.** No critical structures were identified as being in danger from a severe summer storm. All critical facilities in Washington County could be vulnerable to summer storms in the same manner that individual buildings are vulnerable. However, some of the critical facilities throughout the county have back-up generator systems which allow heating systems to continue operating during a power outage.

Wildfires

- **Buildings.** Forest fires could have a large impact on homes located in the wildland/urban interface as well as some commercial structures. Damages can include fire, smoke, and water from fire-fighting efforts.
- **Infrastructure.** Wildfires could have a lesser impact on overhead electrical and telephone transmission lines. Roads and their storm drainage systems are much less vulnerable, although road access to certain areas could be blocked by fires and by emergency fire- fighting vehicles.
- **Critical Facilities.** There have been relatively few large wildfires in Washington County. These have not been a threat to critical facilities. In the event of a very large wildfire, some critical facilities could be damaged by fire and smoke.

Critical Facilities. The critical facilities identified in Washington County are:

- Municipal offices
- Fire and police stations
- Post offices
- Town garages and salt/sand sheds
- Hospitals and clinics
- Schools that have been identified as shelters
- Electrical and communication utilities
- Water and wastewater treatment facilities
- Airports
- Dams
- Bridges
- Hazardous material sites

County Asset Inventory

The following chart identifies the type and number of critical facilities in each town in Washington County.

County Asset Inventory by Municipality

* Many smaller towns contract for public services
**Eastport: Other critical facilities: the Federal Building, senior center, municipal fuel supply, Coast Guard Station and Estes Head Marine Terminal
**Indian Township: Other critical facilities: Recreation building
**Jonesboro: Other critical facilities: Senior citizen's complex
**Lubec: Historical Society (County Road), 5 churches, Quoddy Lighthouse, housing for seniors and disabled (Bayview Apts., Sunrise Apts., Quoddy View Apts.)
**Pembroke: Other critical facilities: the R.H. Foster Petroleum Tank Farm
**Pleasant Point: Other critical facilities: Homeless shelter

Washington County contains at-risk populations that should be factored into the vulnerability assessment. These include a relatively large population of elderly residents who live alone in very rural areas and who have limited mobility.

Vulnerability of Future Buildings, Infrastructure and Critical Facilities

While there has been some growth since the Covid-19 pandemic according to the American Community Survey, between 2000 to 2010, Washington County's population declined from 33,941 people to 32,856, a loss of 1,085 people or 3%. From, 2010 to 2020 there was a further population decrease, from 32,856 to 31,095, a loss of 5%.

Maine's Population Outlook for 2020 to 2030 from the Office of the State Economist estimates that Washington is projected to see the greatest rate of population growth, 8.0%. These projections assume a continuation of the robust in-migration seen in recent pre-pandemic years. By 2035, the county is expected to have about 33,555 individuals. Despite this population growth, because population has been declining for some time, the communities have a fair number of underutilized buildings, infrastructure, or critical facilities. It is expected that only a small amount of new construction would occur which would be vulnerable to the identified hazards.

Assessing where future development will occur in the towns in Washington County is difficult due to a lack of municipal plans and ordinances. Most municipalities in Washington County are very small and rural and do not have planning departments, building codes or even a full-time code enforcement officer. Many towns lack a town office. There is very little in the way of commercial, industrial, or public construction in many of these communities. There is increasing residential development in coastal communities, including second home development. In most communities, the rules guiding residential development is limited to the state's subdivision law, shoreland zoning ordinances, floodplain management ordinances and the state's subsurface wastewater disposal rules.

Severe Winter Storms

- **Buildings.** Improvements in building construction due to the state's building code will help protect future buildings against damage from heavy snow loads and ice buildup. Damages may include burst water pipes, but many newer buildings will be better insulated than older ones, thus being better able to retain heat during longer periods of time when there is a power outage. There will be less interior water damage due to ice dams forming on roofs because the roofs of newer buildings generally are properly vented, which allows the roofs to remain cold. Roof collapses due to heavy snow loads will be very rare because newer roofs are designed to withstand heavy snow loads.
- **Infrastructure.** This hazard primarily impacts local roads and overhead utility lines. Roads and power lines will continue to be the most vulnerable category of infrastructure. New roads can be just as easily blocked on a temporary basis due to heavy snowfall, ice building up on the road surface, and debris such as tree limbs during a storm event. Through the federal Bipartisan Infrastructure Bill Washington County is experiencing significant road improvements centered on expanding undersized culverts and upgrading bridges. This work should significantly decrease flooding on roads, icy low spots, and areas were blocks of river ice wash onto roads. Few new roads are expected to be developed except for small road segments serving subdivisions.
- **Critical facilities**. Future critical facilities in Washington County will be vulnerable to winter storms in the same manner that individual buildings will be vulnerable. However, some of them will have back-up generator systems which will allow heating systems to continue operating during a power outage.

Flooding

- **Buildings.** Because of sea level rise and more intense rain events damages from flooding is increasingly affecting structures. Municipalities follow state shoreland zones requirement that provide some control over development in flood prone areas and regulate to some degree the location of future buildings. Never-the- less, buildings located outside of flood mapped zones are becoming increasingly vulnerable to flooding. This includes municipal buildings.
- **Infrastructure.** Sea level rise as well as more intense rains events with associated storm runoff will make road infrastructure increasingly vulnerable to flooding. Through the federal Bipartisan Infrastructure Bill Washington County is experiencing significant road improvements centered on expanding undersized culverts and upgrading bridges. This work should significantly decrease flooding on roads, washouts, and road undermining. However, the number of impacted roads is expected to grow.

- **Critical facilities**. With shoreland zoning requirements and an increasing awareness of flooding in all communities, future critical facilities will continue to be located outside floodplain areas. This will include wastewater treatment plants despite the need to locate these facilities at low elevations.

Severe Summer Storms

- **Buildings.** It is unlikely that a severe summer storm will have any impact on future structures, apart from a hurricane which is a very rare event in Washington County. New buildings in Washington County will be less vulnerable to severe summer storms because they are built to meet modern code requirements. State-mandated shoreland zoning ordinance regulations for areas within 250 feet of the shoreline of the coast, lakes, and ponds, and within 75 feet of streams, limit the location of new buildings in areas prone to coastal erosion and storm surges that often result from severe summer storm events. Damages may include roof damage from falling trees and debris. There will be less interior water damage due to wind-driven heavy rains because the roofs of newer buildings generally are properly designed, and roofing materials are more resistant to water infiltration. Unfortunately, a fair number of buildings currently exist within these zones and remain vulnerable.
- **Infrastructure.** Roads will continue to be the most vulnerable category of infrastructure. New roads can be blocked on a temporary basis due to heavy rainfall, and debris such as tree limbs accumulating on the road surface during a storm event. However, in the present economy, it is unlikely that Washington County will experience much new road construction, apart from small road segments serving subdivisions.
- **Critical facilities**. Future critical facilities in Washington County will be vulnerable to summer storms in the same manner that individual buildings will be vulnerable. However, an increasing number of them have back-up generator and battery systems which will allow buildings to continue operating during a power outage. The municipal base maps that are included in this Plan update identify the location of critical facilities.

Wildfires

- **Buildings.** Forest fires in Washington County primarily threaten residential structures in the wildland/urban interface. In most Washington County communities, homes are allowed to be constructed in most locations in the community. Given the current housing shortage, it is expected more homes will be in this wildland/urban interface.
- **Infrastructure.** Future power, phone and cable lines can be damaged during a wildfire, although the level of future development is expected to be modest.
- **Critical facilities.** Future critical facilities may be vulnerable to a very large wildfire. However, the expectation is that there will be very few new critical facilities constructed during the life of this plan.

The Maine Forest Service ‘s (MFS) Forest Protection Division provides forest fire protection services for all of Maine’s forest lands. MFS’ goals are to keep the number of forest fire starts to less than 1,000 and annual acreage loss to less than 3,500. Since 2002, MFS has met those goals because of:

- Quick and effective initial attack on all fires.
- Effective air detection and aerial suppression.
- Modern forest fire-fighting equipment.
- Strong emphasis on fire prevention, including state control of statewide burning permits.
- Aggressive training and preparation.
- Improved access to remote areas of the state.
- Northeast Forest Fire Compact membership, providing resources during periods of high fire danger.
- Proactive public information campaigns.
- Law enforcement; and
- Extensive automated weather stations providing accurate daily information used to assist in planning fire operations.

In 2001, the MFS developed a Wildland Urban Interface Committee. This committee was assigned the responsibility of assessing the risk of wildfire to homes within and near forested areas. MFS has printed and distributed over 4,000 brochures and has developed public service announcements alerting homeowners to the potential threat of wildfire in interface areas and what they can do to limit their exposure to the threat of wildfires. MFS has also partnered with the National Park Service to deliver software that can determine risk in Maine communities.

MFS has also launched a community assessment program aimed at focusing its fire prevention efforts on geographical areas of the state with relatively high occurrences of wildfires. The assessment involves working with local officials and the public to identify vulnerable homes in the urban/wildland interface. MFS then prepares a community wildfire protection plan that contains guidelines that homeowners can use to protect their homes. The emphasis is on maintaining a 30- foot defensible *sp*ace around homes.

Assessing Vulnerability: Estimating Potential Losses

Overview. This section of the Plan relies on historical damages as the basis for estimating future losses, subject to the following:

- Historical damage estimates have been updated, using the Consumer Price Index shown below.
- Presidential Disaster Declarations have been used where possible, updated for inflation using the Consumer Price Index below.
- Where statewide or county damages are used to determine damages for a specific jurisdiction, the damages are pro-rated using the 2010 Census.

The average annual Consumer Price Index for various years is shown below based on a value of 100 for the years 1982-1984.

Consumer Price Index 1982-1984 = 100		
1947 = 22.3	1995 = 152.4	2011 = 224.9
1980 = 82.4	1996 = 156.9	2012 = 229.6
1981 = 90.9	1997 = 160.5	2013 = 233.0
1982 = 96.5	1998 = 163.0	2014 = 236.7
1983 = 99.6	1999 = 166.6	2015 = 237.0
1984 = 103.9	2000 = 172.2	2016 = 240.0
1985 = 107.6	2001 = 177.1	2017 = 244
1986 = 109.6	2002 = 179.9	2018 = 251
1987 = 113.6	2003 = 184.0	2019 = 255
1988 = 118.3	2005 = 195.3	2020 = 257
1989 = 124.0	2006 = 201.6	2021 = 272
1990 = 130.7	2007 = 207.3	2022 = 295
1992 = 140.3	2008 = 215.3	2023 = 304
1993 = 144.5	2009 = 214.5	2024 = 314
1994 = 148.2	2010 = 218.1	

Severe Winter storms

This plan uses worst-case, real-life damages to calculate potential winter storm damages, and assumes that historic patterns will hold for the future. For Washington County, the worst storm is the ice storm of 1998, which resulted in a statewide Presidential Disaster Declaration of $47,748,466. The actual damages were closer to $100,000,000 because the Disaster Declaration did not cover damages to power lines and private structures. Using the Consumer Price Index, the $47.7 million in damages would be nearly $92 million in 2024 dollars (multiply $47.7 million by 314 – the CPI for 2024 and divide by 163.0 – the CPI for 1998).

The methodology for calculating potential losses in Washington County is to assume the greater of:

1) Actual damages updated using the Consumer Price Index (column B in the table below), or
2) Winter storm losses based on $68 per capita (column C in the table below). The $68 is calculated by taking the 2020 population of the state (1,362,359) and dividing it into total 1998 ice storm damages in 2024 dollars $9, 9821,707) to get a per capita cost of
$68. Each town's population is multiplied by $68 to get potential damages.

The maximum winter storm loss (column D) is the greater of column B or C. In most cases, column C results in greater potential damages.

Potential Winter Storm Losses in Washington County				
	A. Actual 1998 Ice Storm Damages	**B. Updated Ice Storm Losses Using CPI**	**C. Winter Storm Losses based om $68 per Capitata**	**D. Maximum Potential Winter Storm Loss**
Addison	$9,066	$17,465	$81,056	$81,056
Alexander	20,443	$39,381	$34,068	$39,381
Baileyville	74,512	$143,538	$103,632	$143,538
Baring Plt	3,306	$6,369	$15,368	$15,368
Beals	10,433	$20,098	$34,884	$34,884
Beddington	5,278	$10,167	$1,428	$10,167
Calais	51,996	$100,164	$208,964	$208,964
Charlotte	18,364	$35,376	$27,812	$35,376
Cherryfield	32,821	$63,226	$51,408	$63,226
Codyville Plt	0	0	$1,156	$1,156
Columbia	19,718	$37,984	$38,488	$37,984
Columbia Falls	3,643	$7,018	$27,064	$27,064
Cooper	7,785	$14,997	$10,540	$14,997
Crawford	8,874	$17,095	$6,868	$17,095
Cutler	3,456	$6,658	$35,156	$35,156
Danforth	5,456	$10,510	$43,248	$43,248
Deblois	0	0	$3,264	$3,264
Dennysville	22,011	$42,402	$12,988	$42,402
East Machias	70,105	$135,049	$92,752	$135,049
Eastport	63,917	$123,128	$82,348	$123,128
Grand Lake Stream Plt	3,705	$7,137	$11,628	$11,628
Harrington	26,980	$51,974	$57,460	$57,460
Jonesboro	19,432	$37,433	$40,324	$40,324
Jonesport	25,166	$48,479	$82,008	$82,008
Lubec	33,834	$65,177	$82,824	$82,824
Machias	36,331	$69,987	$137,020	$137,020
Machiasport	41,024	$79,028	$62,832	$79,028
Marshfield	15,420	$29,705	$33,116	$33,116
Meddybemps	5,993	$11,545	$7,888	$11,545
Milbridge	7,267	$13,999	$93,092	$93,092
Northfield	12,120	$23,348	$21,420	$23,348
Pembroke	17,103	$32,947	$62,220	$62,220
Perry	20,693	$39,863	$50,728	$50,728
Princeton	20,475	$39,443	$52,292	$52,292
Robbinston	17,925	$34,530	$42,568	$42,568
Roque Bluffs	13,584	$26,168	$24,956	$26,168
Steuben	22,805	$43,931	$84,864	$84,864
Talmadge		$0	$3,060	$3,060
Topsfield		$0	$14,280	$14,280

Vanceboro		$0	$10,472	$10,472
Waite			$3,536	$3,536
Wesley	10,200	$19,649	$12,580	$19,649
Whiting	10,904	$21,005	$35,904	$35,904
Whitneyville	14,185	$27,326	$11,900	$27,326
Unorganized	70,815	$136,417	$79,900	$136,417
Indian Township	70,537	$135,881	$44,676	$135,881
Pleasant Point	50,637	$97,546	$39,304	$97,546
Total			**$2,115,344**	**$2,566,806**

Flooding

This plan uses worst-case, real-life damages to calculate potential flood losses, and assumes that historic patterns will hold for the future.

- Statewide, the worst-case flood is the April Fool's Day flood of 1987, which resulted in a Presidential Disaster Declaration of $100,000,000 in damages to 10 counties. Using the consumer Price index (CPI), the damages in 2024 dollars would be $276,883,802.82.
- In Washington County, the worst flood was the flood of December 12-19, 2009, which resulted in county-wide damages of $690,851, or $1,012,880 in 2024 dollars.
- The January storms in 2024 caused $70.3 million damage to public infrastructure alone in the eight coastal counties.

The methodology for calculating potential losses in Washington County is to divide the damages reported in the 2024 storm into eights for the eight counties affected, then divide that number by the population of Washington County to get a per capita level of damage of $283. It is important to keep in mind the damages from the January 2024 storms at the time of writing only take *public infrastructure* into account, while private and commercial properties also suffered severe damage. Thus, this calculation is guaranteed to massively undercount the damage suffered by possibly as much as 50%.

Potential Flooding Losses in Washington County		
Community	**Flood Losses based on $283 per Capitata**	**2024 Population**
Addison	$337,336	1,192
Alexander	$141,783	501
Baileyville	$431,292	1,524
Baring Plt	$63,958	226
Beals	$145,179	513
Beddington	$5,943	21
Calais	$869,659	3,073
Charlotte	$115,747	409
Cherryfield	$213,948	756
Codyville Plt	$4,811	17
Columbia	$160,178	566
Columbia Falls	$112,634	398
Cooper	$43,865	155
Crawford	$28,583	101

Cutler	$146,311	517
Danforth	$179,988	636
Deblois	$13,584	48
Dennysville	$54,053	191
East Machias	$386,012	1,364
Eastport	$342,713	1,211
Grand Lake Stream Plt	$48,393	171
Harrington	$239,135	845
Jonesboro	$167,819	593
Jonesport	$341,298	1,206
Lubec	$344,694	1218
Machias	$570,245	2,015
Machiasport	$259,644	924
Marshfield	$137,821	487
Meddybemps	$32,828	116
Milbridge	$387,427	1,369
Northfield	$89,145	315
Pembroke	$258,945	915
Perry	$211,118	746
Princeton	$217,627	769
Robbinston	$177,158	626
Roque Bluffs	$103,861	367
Steuben	$353,184	1,248
Talmadge	$12,735	45
Topsfield	$59,430	210
Vanceboro	$43,582	154
Waite	$14,716	52
Wesley	$52,355	185
Whiting	$149,424	528
Whitneyville	$49,525	175
Unorganized	$332,525	1,175
Indian Township	$185,931	657
Pleasant Point	$163,574	578
Total	**$8,801,716**	**31,108**

Severe Summer Storms

Wildfires

This plan uses worst-case, real-life damages to calculate potential wildfire losses, and assumes that historic patterns will hold for the future. The 1947 fire was the worst on record, although it was a series of wildfires that flared over Eastern and Southern Maine. The 1947 fire caused an estimated
$30,000,000 in damages to Cumberland, Hancock, Oxford, and York Counties. The damage in 2024 dollars would be about $423,492377. While there is significantly more development in each of these counties today than there was in 1947, fire-fighting capabilities have also increased substantially since that time so there may be no need to further increase the damage estimate. The probability that a wildfire such as the 1947 fire will hit Maine during the five- year period covered by this Plan is not high.

The methodology for calculating potential wildfire losses in Washington County is based on the damages that occurred in the 1947 fire in Cumberland, Hancock, Oxford, and York Counties. The population of the four counties is 558,900. Divide $423,492377 million (the 1947 fire in 2024 dollars) by 558,900 to get a per capita cost of $757. Multiply each town's 2024 population by $757 to get potential wildfire damages.

Potential Wildfire Losses in Washington County

Community	Wildfire Losses based on $757 per Capitata	2024 Population
Addison	$902,344	1,192
Alexander	$379,257	501
Baileyville	$1,153,668	1,524
Baring Plt	$171,082	226
Beals	$388,341	513
Beddington	$15,897	21
Calais	$2,326,261	3,073
Charlotte	$309,613	409
Cherryfield	$572,292	756
Codyville Plt	$12,869	17
Columbia	$428,462	566
Columbia Falls	$301,286	398
Cooper	$117,335	155
Crawford	$76,457	101
Cutler	$391,369	517
Danforth	$481,452	636
Deblois	$36,336	48
Dennysville	$144,587	191
East Machias	$1,032,548	1,364
Eastport	$916,727	1,211
Grand Lake Stream Plt	$129,447	171
Harrington	$639,665	845
Jonesboro	$448,901	593
Jonesport	$912,942	1,206
Lubec	$922,026	1218
Machias	$1,525,355	2,015
Machiasport	$699,468	924
Marshfield	$368,659	487
Meddybemps	$87,812	116
Milbridge	$1,036,333	1,369
Northfield	$238,455	315

Pembroke	$692,655	915
Perry	$564,722	746
Princeton	$582,133	769
Robbinston	$473,882	626
Roque Bluffs	$277,819	367
Steuben	$944,736	1,248
Talmadge	$34,065	45
Topsfield	$158,970	210
Vanceboro	$116,578	154
Waite	$39,364	52
Wesley	$140,045	185
Whiting	$399,696	528
Whitneyville	$132,475	175
Unorganized	$889,475	1,175
Indian Township	$497,349	657
Pleasant Point	$437,546	578
Total	**$23,548,756**	31,108

Assessing Vulnerability: Analyzing Development Trends

> **Requirement (201.6(c)(2)(ii)(C):** (The plan shall describe vulnerability in terms of) providing a general description of land uses and development trends within the community, so that mitigation options can be considered in future land use decisions.

There has been a strong and increasingly accepted change in the vulnerability in Washington County over the past five years focused primarily on flooding from climate change. This does not just include coastal flooding but also the recognition that more intense storm events are impacting inland infrastructure damaging culverts and bridges.

There is very little land use regulation in Washington County. Land use controls consist primarily of municipal and state-imposed shoreland zoning ordinances, floodplain management ordinances, and some subdivision and site plan review ordinances. Seven communities have zoning ordinances: Baileyville, Columbia Falls, East Machias, Machiasport, Milbridge, Pembroke and Robbinston. The state's Land Use Planning Commission (LUPC) has adopted a comprehensive set of land use regulations for the 34 townships that comprise Washington County's portion of the Unorganized Territory. LUPC's land use controls include land use districts that are comparable to town-wide zoning. In December of 2010, a statewide building code went into effect which regulates methods of construction in all jurisdictions and have been updated in 2015, 2016 and 2021.

A total of 40 communities have prepared comprehensive plans which have been found consistent with the state's Comprehensive Planning and Land Use Regulation Act (an increase of nine communities since 2005). These plans can be used to support municipal zoning ordinances if these communities choose to enact such controls.

Towns with Consistent, locally adopted Comprehensive Plans include

Addison	Deblois	Passamaquoddy Tribe at Pleasant Point
Alexander	East Machias	Pembroke
Baileyville	Eastport	Perry
Beals	Harrington	Princeton
Beddington	Jonesboro	Robbinston

Calais	Jonesport	Roque Bluffs
Charlotte	Lubec	Steuben
Cherryfield	Machias	Talmadge
Columbia	Machiasport	Topsfield
Columbia Falls	Marshfield	Waite
Cooper	Meddybemps	Whiting
Cutler	Milbridge	Whitneyville
Danforth	Northfield	
Dennysville	Passamaquoddy Tribe at Indian Township	

According to a report issued by the Maine Department of Administrative and Financial Services Office of the State Economist entitled "Maine Economic Indicators," issued in February 2024 and the Maine Children's Alliance, there are a number of economic challenges impacting Washington County, but Washington County's economic situation is improving.

Positively, Washington County has seen more than 1,400 new jobs created, and now has the highest percent of students enrolled in public preschool in Maine. However economic: high energy costs, slow rural broadband rollout, a declining workforce, lower than state average wages, and distance to large markets

In 2023, Washington County had the highest average annual unemployment rate and 22.5% of children its children lived in poverty. While this is a decline of 3.3% from 2014 families continue to struggle to access to jobs that pay a living wage to support their children.

As noted earlier in this Assessment, Washington County may be in the midst of a population shift. While populations have been falling over the last 20 years, post the Covid-19 pandemic, the population has risen slightly.

Maine's Office of Policy and Management estimates Washington County will gradually increase in population in the coming years. The Office's projections show a 2030 population of 33,555, which is an increase of 2,460 people, or 7.9% from the 2020 population. By 2040, the county's population is expected to further grow to 3,5241, adding 4,146 people, or 13% from 2020.

Despite the projected population growth, because it follows prolonged population loss, a fair amount of underutilized infrastructure exists. It is likely there will only a limited number of new critical facilities built, rather older or underused facilities will be upgraded. Growing acceptance of sea level rise will keep new construction away from identified hazards. The table below shows projected population changes to 2040. Note that by 2040, not all communities shown in the table are expected to grow with Barring Plantation and Topsfield expected to shrink by around 20%.

Community	**2020 Population**	**Projected Population**				**Percent change from previous period**				**Total percent change**
		2025	**2030**	**2035**	**2040**	**2020-2025**	**2025-2030**	**2030-2035**	**2035-2040**	**2020-2040**
Addison	1,148	1,152	1,177	1,185	1,178	2.1%	0.7%	-0.6%	2.6%	3.3%
Alexander	525	569	622	669	709	9.3%	7.6%	6.0%	35.1%	27.5%
Baileyville	1,318	1,291	1,281	1,250	1,201	-0.8%	-2.4%	-4.0%	-8.9%	-5.2%
Baring plantation	201	186	173	157	139	-6.6%	-9.4%	-11.6%	-30.9%	-21.8%
Beals	443	433	431	422	407	-0.7%	-2.1%	-3.5%	-8.2%	-4.8%
Beddington	60	62	65	67	67	4.6%	2.9%	1.3%	12.4%	11.0%
Calais	3,079	3,215	3,416	3,577	3,700	6.2%	4.7%	3.4%	20.2%	16.2%
Charlotte	337	358	386	410	430	7.6%	6.2%	4.9%	27.5%	21.6%
Cherryfield	1,107	1,103	1,118	1,116	1,099	1.3%	-0.2%	-1.5%	-0.7%	0.8%

Codyville plantation	13	13	14	14	15	7.5%	-0.2%	6.9%	14.5%	7.1%
Columbia	435	428	430	425	414	0.3%	-1.1%	-2.6%	-4.9%	-2.4%
Columbia Falls	476	464	458	446	426	-1.3%	-2.8%	-4.5%	-10.6%	-6.4%
Cooper	168	186	205	224	240	10.5%	9.0%	7.3%	42.9%	33.2%
Crawford	93	94	96	97	97	1.9%	1.9%	-0.2%	4.6%	4.8%
Cutler	524	548	591	629	659	7.8%	6.4%	4.8%	25.7%	19.9%
Danforth	587	618	660	694	722	6.7%	5.2%	4.1%	23.1%	18.3%
Deblois	74	76	80	82	83	5.1%	2.3%	2.2%	12.6%	10.2%
Dennysville	300	297	297	291	283	0.1%	-1.9%	-3.0%	-5.7%	-2.9%
East Central Washington UT	724	761	812	855	889	6.7%	5.3%	3.9%	22.8%	18.1%
East Machias	1,326	1,382	1,460	1,520	1,563	5.6%	4.1%	2.8%	17.8%	14.6%
Eastport	1,288	1,334	1,405	1,459	1,497	5.3%	3.8%	2.6%	16.2%	13.3%
Grand Lake Stream plantation	125	129	135	138	141	4.4%	2.7%	1.9%	12.7%	10.6%
Harrington	962	996	1,045	1,083	1,107	5.0%	3.6%	2.2%	15.1%	12.6%
Jonesboro	579	603	642	672	697	6.4%	4.8%	3.6%	20.3%	16.1%
Jonesport	1,245	1,263	1,293	1,305	1,301	2.3%	0.9%	-0.3%	4.5%	4.8%
Lubec	1,237	1,226	1,245	1,244	1,227	1.5%	0.0%	-1.3%	-0.8%	0.6%
Machias	2,060	2,235	2,343	2,424	2,474	4.8%	3.4%	2.1%	20.1%	17.6%
Machiasport	962	992	1,034	1,064	1,081	4.3%	2.9%	1.6%	12.4%	10.6%
Marshfield	528	565	609	645	676	7.7%	6.0%	4.7%	28.0%	22.2%
Meddybemps	139	137	138	135	132	0.5%	-1.7%	-2.4%	-5.1%	-2.7%
Milbridge	1,375	1,448	1,554	1,642	1,713	7.3%	5.7%	4.4%	24.6%	19.4%
Northfield	178	201	229	257	281	14.2%	11.9%	9.4%	57.7%	44.1%
North Washington UT	505	534	574	608	635	7.5%	5.9%	4.5%	25.7%	20.3%
Passamaquoddy Indian Township Reservation	760	819	896	966	1,025	9.4%	7.8%	6.1%	34.9%	27.1%
Passamaquoddy Pleasant Point Reservation	692	700	720	732	733	2.9%	1.6%	0.2%	6.0%	5.8%
Pembroke	788	800	827	845	852	3.4%	2.2%	0.8%	8.2%	7.3%
Perry	802	846	875	893	899	3.5%	2.1%	0.7%	12.1%	11.4%
Princeton	745	738	744	741	727	0.9%	-0.5%	-1.8%	-2.4%	-0.6%
Robbinston	539	538	555	565	568	3.1%	1.8%	0.5%	5.3%	4.8%
Roque Bluffs	296	308	324	336	345	5.3%	3.8%	2.7%	16.6%	13.6%
Steuben	1,129	1,178	1,259	1,326	1,379	6.8%	5.3%	4.0%	22.2%	17.4%
Talmadge	70	75	82	89	95	9.1%	8.3%	7.6%	36.1%	26.4%
Topsfield	179	169	158	145	129	-6.1%	-8.4%	-11.2%	-27.9%	-18.9%

Vanceboro	102	105	110	112	115	4.6%	2.5%	2.4%	12.8%	10.2%
Waite	66	68	71	73	74	4.2%	2.6%	2.5%	12.7%	10.0%
Wesley	122	142	163	184	204	15.3%	12.6%	11.1%	67.5%	50.8%
Whiting	482	509	542	570	591	6.5%	5.1%	3.8%	22.7%	18.2%
Whitneyville	202	207	213	218	220	3.2%	2.1%	1.1%	9.0%	7.8%
Total	**31,095**	**32,099**	**33,555**	**34,598**	**35,241**	**4.63%**	**2.87%**	**1.70%**	**14.03%**	**11.57%**

Impact of Hazards on Future Development

Severe winter and summer storms have the potential to impact all land areas within the two cities, 39 towns, three plantations and 34 townships in Washington County's portion of the Unorganized Territory. These two hazards have the potential to shut down transportation and power which, in turn, could adversely impact businesses, industry, commerce and schools and could stop or impede social and emergency services.

Flooding will continue to have a growing impact on floodplains and on roads in vulnerable locations. This hazard will repeatedly shut down transportation in a growing number of areas, since it is primarily the roads that are the objects of flooding in the county. Flooded roads will impact businesses, industry, commerce, and schools, and also delay many social and emergency services.

Most Washington County communities have joined the Federal Flood Insurance Program (NFIP) and, as a condition of participation in the program, have enacted floodplain management ordinances that limit new development in floodplain areas. According to information obtained from FEMA's Community Status Book, there are 16 communities that are not in the NFIP as shown below.

Towns not in the NFIP		
Beddington	Marshfield	Vanceboro
Columbia Falls	Meddybemps	Wesley
Cooper	Northfield	Whiting
Crawford	Passamaquoddy Tribe Indian Township	Whitneyville
Cutler	Passamaquoddy Tribe at Pleasant Point	
Deblois	Talmadge	

Source: FEMA's Community Status Book, March 17, 2022,

There are some homes and seasonal dwellings in Washington County that are in the 100 -year floodplain. As these properties are sold and mortgaged, owners may be required to upgrade these homes to meet the requirements of local floodplain management ordinances as well as the demands of lenders.

Wildfires will have a growing impact on residential properties located within the wildland/village interface. Because Washington County is a very densely forested, sparsely populated area, there are many homes that are at risk of destruction by forest fires. Currently, no municipality in Washington County has imposed wildfire restrictions on residential development.

Multi-Jurisdictional Risk Assessment	
Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.	
Element	**A.** Does the new or updated plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?

Coastal communities are more susceptible to ice storms and coastal storm surges than the inland communities. The ice storm risk is due to the slightly warmer temperatures that these communities experience from the coastal waters.

Although all areas are at risk from forest fires, it is the less densely populated areas of the inland communities that face extensive acreage losses, while peninsulas with limited road access face the most danger in terms of home loss. Additionally, the resources of municipal fire departments for fighting wildfires are extremely limited, due to the small population base.

Maps

The appendix contains base maps for each of the municipalities in Washington County.

SECTION 5 MITIGATION STRATEGIES SECTION 5 PLAN UPDATE

Mitigation Strategy	
Requirement: §201.6(c)(3): (The plan must include) a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include: (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. (ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. (iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.	
Element	C1: Does the plan document each jurisdiction's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs?
	C2: Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate?
	C3: Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
	C4: Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
	C5: Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction?
	D2: Was the plan revised to reflect progress in local mitigation efforts? **See Maintenance Section**
	D3: Was the plan revised to reflect changes in priorities? **See Maintenance Section**

C1. Existing Authorities, Policies, Programs and Resources

Below is a summary of existing authorities, policies, programs, and resources available to accomplish hazard mitigation. See also the table that follows this summary.

- **Town Manager, Administrator, Administrative Assistant to the Selectmen:** Some towns in Washington County have a town manager, others have an administrator whose duties may vary from those of a town manager,

and still others have an administrative assistant to the selectmen who may serve as staff to the selectmen but may not have the powers of a town manager to hire staff. In the table below, "MGR" indicates town manager; "A" indicates administrator, and "AA" indicates administrative assistant.

- **Board of Selectmen or Board of Assessors:** If a town has no town manager, that role is filled by a board of selectmen, or in the case of a plantation, by a board of assessors. Depending on the community's needs and financial resources, the board might also serve as road commissioner.
- **Staff Resources**: Staff resources, where available, usually consist of a planner or community development director. There are no towns in Washington County with staff resources devoted exclusively to hazard mitigation.
- **Public Works Director or Road Commissioner:** Some of the larger towns have a public works director, but most have a road commissioner. The road commissioner might also be the town manager or board of selectmen.
- **Flood Hazard Ordinance:** All the towns that are in the Flood Insurance Program have a flood hazard ordinance in effect. In the following table, the designation "LUPC" indicates that the plantation's flood plains are under the regulatory jurisdiction of the State's Land Use Planning Commission (LUPC).
- **Shoreland zoning ordinance:** All the towns in Washington County are required to have a shoreland zoning ordinance, whether adopted by the municipality or imposed by the Maine Department of Environmental Protection. The designation LUPC indicates that the plantation's shorelands are under the regulatory jurisdiction of the State's Land Use Planning Commission.
- **Form of Government**: In the following table, the letters "ST" indicate the selectmen/town meeting form of government; a "Council" indicates a council form of government and the designation LUPC indicates that the plantation is governed by the State's Land Use Planning Commission.
- **Resources**: In addition to staffing or other expertise, funding resources are from local taxes and/or grants that are funded by taxes or private donations.

All jurisdictions in Washington County could expand and improve their existing capabilities if additional funds, beyond their existing tax bases, became available to address hazard mitigation projects listed on the following pages.

Key to table on next page
"X" - Yes
"MGR" – Town or City Manager "A" - Administrator
"AA" – Administrative Assistant
"LUPC" – Maine Land Use Planning Commission "ST" – Selectmen/Town Meeting form of government "M" – Mayor
"C" – Council
"AAM" – Assessors/Annual Meeting

Authorities, Policies, Programs and Resources Available to Accomplish Hazard Mitigation

Town	Town or City Manager	Staff involved in Local Planning	Public Works or Road Commissioner	EMA Director	Flood Hazard Ordinance	Shoreland Zoning Ordinance	Form of Government
Addison			X	X	X	X	ST
Alexander			X	X	X	X	ST
Baileyville	MGR		X	X	X	X	C/MGR
Baring Plt			X		LUPC	X	AMM
Beals			Select Board	X	X	X	ST
Beddington			X	X		X	ST
Calais	MGR	X	X	X	X	X	C/M/MGR
Charlotte			X	X	X	X	ST
Cherryfield	AA		X	X	X	X	ST/AA

Codyville Plt			X		LUPC	X	ST
Columbia	A A		X	X	X	X	ST/AA
Columbia Falls			X	X		X	ST/AA
Cooper			Select Board	X		X	ST
Crawford			X	X		X	ST
Cutler	A A		X	X		X	ST/AA
Danforth	M G R		X	X	X	X	ST/MG R
Deblois	A A		X	X		X	ST/AA
Dennysville			X	X	X	X	ST
East Machias	A A		X	X	X	X	
Eastport	M G R		X	X	X	X	ST/AA
Grand Lake Stream Plt			X	X	LUPC	X	AAM
Harrington	A A		X	X	X	X	ST/AA
Jonesboro			X	X	X	X	ST
Jonesport			X	X	X	X	ST
Lubec	A		X	X	X	X	ST/A
Machias	M G R		X	X	X	X	ST/MG R
Machiasport			X	X	X	X	ST

Authorities, Policies, Programs and Resources Available to Accomplish Hazard Mitigation

Town	Town or City Manager	Staff involved in Local Planning	Public Works or Road Commissioner	EMA Director	Flood Hazard Ordinance	Shoreland Zoning Ordinance	Form of Government
Marshfield			X	X		X	ST
Meddybemps			X	X		X	ST
Milbridge	M G R		X	X	X	X	ST/M GR
Northfield			X			X	ST
Pembroke			X	X	X	X	ST
Perry			X	X	X	X	ST
Princeton			X	X	X	X	ST
Robbinston			X	X	X	X	ST
Roque Bluffs			X	X	X	X	ST
Steuben			X	X	X	X	ST
Talmadge			X			X	ST
Topsfield	A A		X		X	X	ST/AA
Vanceboro			X	X		X	ST
Waite			X		X	X	ST

Wesley			X	X	X	X	ST
Whiting	A A		X	X		X	ST/AA
Whitneyville			X	X	X	X	ST
Unorganized			X	X	LUPC	LUP C	

Source: Maine Municipal Association Directory, Washington County, Maine EMA

C2. Participation in the NFIP National Flood Insurance Program

As shown in the table below, all but 16 of the municipalities in Washington County are in the Flood Insurance Program, and as a condition of participation in the program, have enacted floodplain management ordinances that limit new development in floodplain areas. Four of the 11 (Beddington, Cooper, Deblois and Meddybemps) have not been mapped by FEMA (no flood boundary map, no flood insurance rate map).

All the unorganized townships in Washington County's portion of Maine's Unorganized Territory are under the regulatory jurisdiction of Maine's Land Use Planning Commission (LUPC). LUPC has agreed to administer and enforce the NFIP for all plantations and townships that are under its control and has modified its requirements to include floodplain management regulations. The table below summarizes the participation of Washington County municipalities in the NFIP.

Key to Table
FHBM: Flood Hazard Boundary Map FIRM: Flood Insurance Rate Map
(M): No elevation determined; all zone A, C, X NSFHA: No special Flood Hazard Area; all zone C X: Yes
n.a.: Not applicable

Washington County Communities Participating in the NFIP

Town	Initial FHBM[1]	Initial FIRM[1]	Current Effective Map Date[1]	Regular-Emergency Date[1]	Adoption and Enforcement[2]
Addison	10-18-74	17-16-91	7-18-17	7-16-91	X
Alexander	12-6-74	9-4-85	7-18-17	9-4-85	X
Baileyville	1-24-74	4-15-82	7-18-17	4-15-82	X
Baring Plt	1-31-75	3-15-82	7-18-17	3-15-82	X
Beals	8-16-74	5-15-91	7-18-17	5-15-91	X
Beddington[3]	n.a.	n.a.	n.a.	n.a.	
Calais	6-28-74	8-3-94	7-18-17	8-3-94	X
Charlotte	12-17-76	8-1-08	7-18-17	8-1-08	X
Cherryfield	8-2-74	5-4-88	7-18-17	5-4-88	X
Codyville Plt	-	7-18-17	NSFHA	4-30-84	X
Columbia	2-14-75	4-1-11	7-18-17	4-1-11	X
Columbia Falls	4-18-75	9-4-88	7-18-17	n.a.	
Cooper[3]	n.a.	n.a.	n.a.	n.a.	
Crawford	1-17-75	7-18-17	7-18-17	n.a.	
Cutler	2-21-75	8-5-85	7-18-17	n.a.	
Danforth	8-9-74	9-18-85	7-18-17	9-18-85	X
Deblois[3]	n.a.	n.a.	n.a.	n.a.	
Dennysville	1-10-75	8-19-85	7-18-17	8-19-85	X
East Machias	2-14-75	9-4-85	7-18-17	9-4-85	X
Eastport	7-26-74	12-3-87	7-18-17	12-3-87	X
Grand Lake Stream Plt	2-14-75	8-5-85	7-18-17	8-5-85	X
Harrington	2-21-75	9-27-85	7-18-17	9-27-85	X
Jonesboro	2-14-75	8-1-08	7-18-17	8-1-08	X

Washington County Communities Participating in the NFIP					
Town	**Initial FHBM[1]**	**Initial FIRM[1]**	**Current Effective Map Date[1]**	**Regular-Emergency Date[1]**	**Adoption and Enforcement[2]**
Jonesport	10-25-74	5-3-90	7-18-17	5-3-90	X
Lubec	11-1-74	4-15-92	7-18-17	4-15-92	X
Machias	8-2-74	11-18-88	7-18-17	11-18-88	X
Machiasport	7-19-74	8-5-91	7-18-17	8-5-91	X
Marshfield	2-21-75	9-18-85	7-18-17	n.a.	
Meddybemps[3]	n.a.	n.a.	n.a.	n.a.	
Milbridge	8-2-74	5-3-90	7-18-17	5-3-90	X
Northfield	2-14-75	7-18-17	7-18-17	n.a.	
Pembroke	10-18-74	4-1-09	7-18-17	4-1-09	X
Perry	2-28-75	9-4-85	7-18-17	9-4-85	X
Princeton	2-21-75	8-19-85	7-18-17	8-19-85	X
Robbinston	4-11-75	8-19-85	7-18-17	8-19-85	X
Roque Bluffs	2-21-75	9-18-85	7-18-17	9-18-85	X
Steuben	2-21-75	9-1-13	7-18-17	9-1-13	X
Talmadge	12-17-76	7-18-17	7-18-17	n.a.	
Topsfield	3-14-75	3-1-11	7-18-17	3-1-11	X
Vanceboro	2-21-75	8-19-85	7-18-17	n.a.	
Waite	-	7-18-17	NSFHA	4-9-85	X
Wesley	12-27-74	8-18-85	7-18-17	9-18-85	X
Whiting	2-7-75	8-5-85	7-18-17	n.a.	
Whitneyville	6-7-77	7-18-17	7-18-17	2-8-01	X
Unorganized	-	-	NSFHA	4-30-84	X

1 Source: FEMA Community Status Book Report as of March 2022

2 Based on all available information, this community has adopted and continues to enforce a floodplain management ordinance, including regulating new construction in Special Flood Hazard Areas (SFHA). Washington County EMA is not aware of any new construction in the SFHA.

3 Not participating in NFIP; no FEMA mapping

C3. Goals

The Hazard Mitigation Planning Team reviewed the goals contained in the 2018 Hazard Mitigation Plan and determined that these goals should continue to guide this Hazard Mitigation Plan – 2024 Update. The goals relate to the hazards profiled in this plan and include the following:

Severe Winter Storms: Reduce potential damage, injury, and possible loss of life in Washington County caused by severe winter storms and erosion.

Flooding: Reduce potential damage, injury, and possible loss of life in Washington County caused by flooding.

Severe Summer Storms: Reduce potential damage, injury, and possible loss of life in Washington County caused by severe summer storms.

Wildfires: Reduce potential damage, injury, and possible loss of life in Washington County caused by wildfires.

C4. Comprehensive Range of Specific Actions and Projects C5. Action plan

COUNTY-WIDE GOALS AND MITIGATION ACTIONS

The Washington County Planning Team identified and analyzed a number of hazard mitigation measures that would benefit the county. As previously noted in the planning section, these measures were identified through workshops, during meetings

with the elected and appointed public officials, through outreach to the towns and with the County Commissioners who represent the Unorganized Territory.

Note:

- The designation "2024-2029" in the timeframe column indicates that the action does not have a specific beginning and end date (such as a construction project) but is rather a recurring action that cannot be pinpointed to a specific date or dates. It includes actions that will depend on circumstances which cannot be predicted in advance, such as a flooding threat, rapid snowmelt, or thunderstorm activity. The recurring action can occur at any time during the 5-year period covered by this plan.
- Actions over which the county has no control or authority are not included
- Actions which are very broad and apply over multiple jurisdictions are not included
- The responsibility column limits the responsibility to the county.
- FEMA elements C4 and C5 are both addressed in the format of the county actions table below and in the table of projects by municipality.
- **Funding.** The major sources of funding for the county actions are financial support for the operation of Washington County EMA (county taxes, FEMA EMPG grants, Homeland Security funds, and matching funds provided by time spent by local officials on hazard mitigation).

SEVERE WINTER AND SUMMER STORMS (combined because many actions are the same for both kinds of storms)

Severe Winter Storms. In Washington County, the most likely damages caused by a severe winter storm event are the loss of electrical power from downed power transmission lines, the blockage of roads from tree debris or winter snow and ice, washouts and erosion caused by water runoff that overwhelms local drainage systems, and erosion caused by tidal action, high river flows and/or strong winds. There could be injuries or loss of life caused by delayed responses from emergency services, the improper use of back-up heat sources, debris falling on an individual, or from storm-related vehicle accidents resulting from icy conditions, road washouts or erosion. Other types of general damage to personal and real property may be caused by blizzard conditions or high winds. Major winter storms can shut down businesses, resulting in major losses of income to local businesses and individuals.

Severe Summer Storms. In Washington County, the most likely damages caused by a severe summer storms or hurricane are the loss of electrical power from downed power transmission lines, the blockage of roads from tree debris, washouts caused by water runoff that overwhelms local drainage systems, and erosion resulting from wave action, river flow and/or extreme high tide. There could be injuries or loss of life caused by delayed responses from emergency services, debris falling on an individual, or from storm-related vehicle accidents resulting from downed tree limbs, road washouts or erosion. Other types of general damage to personal and real property may be caused by high winds, including damage to fishing fleets and public and private piers and landings. If power is lost for extended periods of time, major summer storms can shut down businesses, resulting in major losses of income to local businesses and individuals.

Goal/Mission Statement: Reduce potential loss of life, injury and property damage in Washington County caused by severe winter storms, severe summer storms and hurricanes, water runoff and erosion.

Strategic Measures (Actions)	Responsibility	Timeframe	Status
A. 404 and 406 Funding. Maximize the use of 406 funds through the Public Assistance (PA) Program. Analysis: This is an important aspect of the PA program for several reasons. Because it is written into the PA scope of work and budget, the work can be completed more quickly than by going through the 404-grant program. Because the State pays a 15% share, and the community pays 10%, this lessens the local financial burden after a disaster for infrastructure protection and improvement.	Washington County EMA	2024-2029 As 406 funds become available	On-going

B. Public Education. Work with the media on public service announcements on hazard mitigation topics and include hazard mitigation information on the EMA website.	Washington County EMA	2024-2029 As needed	on-going

Strategic Measures (Actions)	Responsibility	Timeframe	Status
C. Infrastructure Protection. Inform local officials of training exercises, technical assistance and potential funding opportunities aimed at infrastructure protection. Analysis: Since there is constant turnover of public officials, and funding resources continually ebb and flow, information exchange is critical to keeping current officials up to date.	Washington County EMA	2024-2029 as opportunities arise	New
D. Secondary Power Sources: Assist interested municipalities in applying for grant funds for generators, solar photovoltaic and battery storage systems or microgrid systems at all critical facilities that are not in flood hazard areas. Analysis: As of a FEMA policy supports installation of secondary power sources for critical facilities that are eligible for mitigation funding. These systems can ensure the proper functioning of critical facilities during emergencies, thus making the whole community more resilient.	Washington County EMA	2024-2029 as opportunities arise	New

FLOODING

In Washington County, the most likely damages caused by flooding are the destruction of roads caused by washouts and undercutting. The threat of flooding is most serious in coastal areas, particularly where high winds, heavy rains, and extremely high tides combine to inundate low lying coastal areas. There are few critical facilities in the 100-year floodplain. Most communities that have flooding issues have joined the National Flood Insurance Program and are controlling future development through the enforcement of a local flood hazard ordinance. Some communities have experienced serious flooding and road damage caused by the failure of beaver dams.

Goal/Mission Statement: Reduce potential loss of life, injury and property damage in Washington County caused by flooding.

Strategic Measures (Actions)	Responsibility	Timeframe	Status
A. 406 Funding. Maximize the use of 406 funds through the Public Assistance (PA) Program. Analysis: This is an important aspect of the PA program for several reasons. Because it is written into the PA scope of work and budget, the work can be completed more quickly than by going through the 404-grant program. Because the State pays a 15% share, and the community pays 10%, this lessens the local financial burden after a disaster for infrastructure protection and improvement.	Washington County EMA	2024-2029 As 406 funds become available	New

B. Dam Exercises. Continue to participate in dam safety exercises. Analysis: Because high hazard dams can cause potential loss of life and property damage in the event of a failure, these exercises promote greater awareness of the risk and the need to keep the emergency action plans (EAPs) current.	Washington County EMA	2024-2029 as exercises are scheduled	New
C. Infrastructure Protection. Inform local officials of training exercises, technical assistance and potential funding opportunities aimed at infrastructure protection. Analysis: Since there is constant turnover of public officials, and funding resources continually ebb and flow, information exchange is critical to keeping current officials up to date.	Washington County EMA	2024-2029 as opportunities arise	New

Strategic Measures (Actions)	**Responsibility**	**Timeframe**	**Status**
D. NFIP Participation. Promote continued participation in the National Flood Insurance Program, as well as actions needed to ensure municipal compliance with flood insurance requirements, by providing specific information on the EMA website and at county meetings and training exercises related to hazard mitigation.	Washington County EMA	2024-2029 as meetings are held or as exercises are scheduled	New. Addressed in EMA Directors' meetings
E. Grant and Training Opportunities – Notify communities of grant opportunities, workshops for developing competitive applications and training on best practices.	Washington County EMA	2024-2029 as opportunities arise	New

WILDFIRES

In Washington County, the most likely damages caused by a wildfire are the loss of life, loss of prime timberland, and the destruction of personal and real property, especially homes. The loss of electricity is also possible since many high voltage transmission lines pass through heavily wooded areas. Major wildfires may close commerce, resulting in major losses of income to local businesses and individuals.

Goal/Mission Statement: Reduce potential loss of life, injury and property damage in Washington County caused by wildfires.

Strategic Measures (Actions)	**Responsibility**	**Timeframe**	**Status**
A. Public Education. Notify local officials of fire prevention workshops offered by the Maine Forest Service (MFS). Include fire prevention information on the EMA website. Analysis: The MFS has a wide variety of resources that can be accessed by the communities and businesses. These range from website information to individual consultations on methods for reducing potential damages from wildfires.	Washington County EMA	2024-2029 as needed	New

B. Mutual Aid. Evaluate the status of mutual aid agreements. Aid municipalities to update, as necessary. Analysis: 90 percent of all fire fighters in Maine are volunteers. These volunteers must first leave their regular jobs to access the fire trucks and equipment *before* going to fight fires. Because few communities could support a fully staffed fire department, mutual aid is both a lifesaver, and, cost effective. There is wholehearted support for mutual aid and therefore a great deal of cooperation and support among municipal fire departments. This has bolstered the fire-fighting capabilities of all communities. Washington EMA is actively involved with municipal emergency response capabilities.	Washington County EMA	2024-2029 as needed with EMA Directors and fire departments	New
C. Grant Applications. Notify municipalities of available grants to improve local firefighting capabilities (for example: Fire Grants and Homeland Security grants).	Washington County EMA	2024-2029 as opportunities arise	New

Pandemic

In Washington County, the most likely damages caused by a pandemic are the loss of life. Beyond loss of life, as seen during the 2020 Covid-19 outbreak, were large portions of the population being sickened and absenteeism can be projected to rise to as high as 40%. This high level of absenteeism can affect all levels of the community, including loss of community law enforcement, fire and rescue and medical care capacity. Further, closures of business to prevent disease transmission causing devastating economic contractions. While some industries are increasingly resilient to pandemic lock downs, Washington County's tourism industry remains extremely vulnerable.

Goal/Mission Statement: Reduce potential loss of life, and economic damage in Washington County caused by pandemics.

Strategic Measures (Actions)	Responsibility	Timeframe	Status
A. Public Education. Notify local officials of public health emergency preparedness workshops offered by the Maine Center for Disease Control and Prevention (MCDC). Include DHHS/Maine CDC Emergency Management information on the EMA website. ❖ Maintain and develop public meeting infrastructure which allow social distancing. ❖ Develop mechanisms to reach isolated or underserved communities Analysis: The MCDC has a wide variety of resources that can be accessed by the communities and businesses. These range from website information to individual consultations on methods for reducing illness and death during pandemic events	Washington County EMA	2024-2029 as needed	New

B. Cross-Sector Communication. Evaluate and formalize cross-sector relationships between Washington County EMA, local health care providers and Washington County's Public Health District Liaison. ❖ Before sharing information with the public, public health and emergency management officials should coordinate their messaging with other stakeholders. Analysis: Effective communications and secure information exchange platforms during disasters and emergencies are among the significant factors in inclusive disaster management and can radically contribute to better preparedness, efficient and timely responsiveness, and, finally, maximal reduction of damages and fatalities.	Washington County EMA	2024-2029 as needed with hospital directors and Public Health District Liaison	New
C. Grant Applications. Notify municipalities of available grants to improve local pandemic response preparedness	Washington County EMA	2024-2029 as opportunities arise	New

Drought

In Washington County, the most likely damages caused by a drought are the loss crops. While droughts seldom threaten lives, they can have a devastating impact on agriculture-based businesses while dry wells can make homes unlivable.

Goal/Mission Statement: Reduce potential economic damage in Washington County caused by droughts.

Strategic Measures (Actions)	Responsibility	Timeframe	Status
A. Public Education. Notify local officials of public health emergency preparedness workshops offered by the Maine Drought Mitigation Task Force. Include drought mitigation information on EMA website. Analysis: The Maine Drought Mitigation Taskforce has a wide variety of resources that can be accessed by the communities and businesses. These range from website information including maps of reported dry wells.	Washington County EMA	2024-2029 as needed	New
C. Grant Applications. Notify municipalities of available grants to improve local drought response preparedness and drought relief funding	Washington County EMA	2024-2029 as opportunities arise	New

Rating of Actions and Establishment of Priorities

The Washington County Hazard Mitigation Planning Team established priorities by hazard for the general mitigation actions set forth on the previous pages. The Team used the following criteria to rank each of the actions:

1. Life safety
2. Population benefited
3. Probability of community acceptance
4. Probability of funding
5. Feasibility of implementation

Each strategy was rated high (3 points), medium (2 points) or low (1 point) for each of the criteria, with the result that priorities were established by total score (the higher the points, the higher the priority).

Rating of Severe Winter and Summer Storm Mitigation Actions

	Life Safety	Population Benefited	Probability Community Acceptance	Probability Funding	Feasibility of Implementation	Total Score
A. 406 Funding	2	3	3	2	3	13
B. Public Education	1	1	3	3	3	11
C. Infrastructure Protection	3	3	3	1	1	11
D. Generators	3	2	3	3	3	14

Rating of Flood Mitigation Actions

	Life Safety	Population Benefited	Probability Community Acceptance	Probability Funding	Feasibility of Implementation	Total Score
A. 406 Funding	3	3	3	3	3	15
B. Dam Exercises	3	2	3	3	3	14
C. Infrastructure Protection	3	2	3	1	3	12
D. NFIP Participation	1	1	3	3	3	11
E. Grant and Training Opportunities	3	1	3	3	3	13

Rating of Wildfire Mitigation Actions

	Life Safety	Population Benefited	Probability Community Acceptance	Probability Funding	Feasibility of Implementation	Total Score
A. Public Education	3	2	3	3	3	14
B. Mutual Aid	3	2	3	3	2	13
C. Grant Applications	2	2	3	2	2	11

Rating of Pandemic Mitigation Actions

	Life Safety	Population Benefited	Probability Community Acceptance	Probability Funding	Feasibility of Implementation	Total Score
A. Public Education	3	2	2	2	2	11

B. Cross-Sector Communication	3	2	2	2	2	11
C. Grant Applications	2	2	2	2	2	10

Rating of Drought Mitigation Actions						
	Life Safety	**Population Benefited**	**Probability Community Acceptance**	**Probability Funding**	**Feasibility of Implementation**	**Total Score**
A. Public Education	1	1	1	2	2	7
C. Grant Applications	1	1	2	2	2	8

Prioritized Local Mitigation Projects in Washington County

Projects listed in priority order. All the municipalities in Washington County identified one or more action items consistent with the county-wide goals, objectives, and actions, to mitigate hazards at the local level. The jurisdictions, as well as the specific actions they will pursue, are listed in priority order in the following table. The time frames shown are based upon the availability of materials and funding.

Criteria for prioritization. The list of local projects was developed separately by each municipality in consultation with the county. Local officials utilized the following criteria to develop and informally prioritize the list of projects:

- local knowledge of the frequency and extent of local damages,
- local knowledge of project priorities, based on frequency and severity of damages,
- local knowledge of the benefits that could result from the projects,
- local knowledge of the weather, the geography and topography of the community, and
- the technical and financial abilities of their respective communities to address hazards and mitigate the impacts of hazards.

How the actions will be implemented. The table below identifies a timeframe for each project and identifies one or more parties who will be responsible for implementation. If the towns apply for grant funds, a benefit/cost analysis will be undertaken.

Use of a cost-benefit analysis. Many of the jurisdictions included in this Plan are small towns run by volunteers. These towns have tight budget constraints. They do not have staff, resources, or funding to prepare cost-benefit analyses for the projects included in this Plan. However, in virtually all cases involving expenditure of local funds for implementation, there will be a very rigorous, line-by-line analysis of cost effectiveness during the budget review process and subsequent public discussion. This review is at least equal to a formal benefit-cost calculation because each expenditure item will be scrutinized rather than simply being plugged into a formula. For purposes of grant applications, however, MEMA and the County EMA have made it clear to local officials that a formal cost benefit analysis will have to be prepared in the event they apply for mitigation funding.

Status of completed, deleted, or deferred projects. The table below contains the prioritized list of town projects, including a status column.

Timeframe. Some of the projects have been completed, as indicated in the table of projects. Some are newly listed. However, most projects are carry-overs from the last plan update, so an approximate time frame has been assigned to each project, subject to the availability of funds which, in most cases, have not been secured as of this writing. The time frames start when funding becomes available and permitting is completed.

- Short Term: 1-2 years
- Medium Term: 3-4 years
- Long Term: 5 years

Community inaction to date does not mean lack of interest. Most communities do not have the funds to implement the projects, in part because scarce local resources are dedicated to winter and summer road maintenance, school costs and county budgets, to name a few, and community finances are also being squeezed by state funding cutbacks in revenue sharing, education, county jails and other areas of government. Therefore, for all the reasons stated above, projects with the status "Deferred – lack of funds" may have to be carried over to the next planning cycle.

The time frames set forth in this plan are subject to change if funding sources become available.

Potential Funding Sources.

Potential funding sources for local projects include, but are not limited to:

- Local tax money
- Maine DOT local road assistance funds
- FEMA Hazard Mitigation Assistance (HMA) grant funds
- Maine Department of Environmental Protection (DEP) culvert grants
- Community Development Block Grant (CDBG) funds
- USDA
- CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement
- Other (e.g., private benefactors, emerging grant programs)

D2. Progress in Local Mitigation Efforts

The table below reflects progress in local mitigation efforts. See status column.

D3. Revisions to Reflect Changes in Priorities

The table below reflects progress in local mitigation efforts. See discussion on how projects were prioritized, page 5-14.

Note: References to culverts on the following pages refer to upsizing or lengthening culverts, unless otherwise stated. Over the years, FEMA has established project useful life standards for typical mitigation project types. FEMA's project useful life standard for culverts ranges from 25-50 years, depending on type of materials used. Other examples are generators - 19 years, elevations – 30 years, and acquisition/demolitions - 100+ years.

Hazard Mitigation Projects by Town 2018-2024

Town	Project (in Priority Order)	Cost	Time Frame	Responsible Agency	Status
Addison	1. East Side Road crosses over the Knowles Brook at the Lot Norton Bridge (located at 44°36'00.2"N 67°44'16.5"W) East Side Road Causeway and Bridge Resiliency Improvement Project.	$7,297,400	Short Term	MDOT	Pending
	2. Culvert Replacements	$50,000	Medium Term	Roads Commissioner	On-going
Alexander	1. Flat Rd; upsize culvert at Elwin Daley.	$20,000	Short Term	Road Commissioner	Deferred; lack of funding
	2. Pokey Road: ditch 4,000', upsize (2) 30" x 50' culverts, (1) 24" x 40' culvert.	$40,000	Medium Term	Road Commissioner	Deferred; lack of funding

	3. Tommy Long Rd: ditch 2,000', upsize (1) 36" x 40' culvert, upsize (1) 24" x 40' culvert.	$40,000	Medium Term	Road Commissioner	Deferred; lack of funding
	4. Spearin Rd; ditch 6,800', upsize (1) 36" x 40' culvert, (2) 24" x 40' culverts, patch paving.	$16,500	Short Term	Road Commissioner	Deferred; lack of funding
	5. Arm Rd: ditch 3,000', upsize (2) 36" x 40' culverts, (2) 24" x 50' culverts, (2) 24" x 40' culverts.	$18,000	Medium Term	Road Commissioner	Deferred; lack of funding
	6. C.E. Davis Rd; elevate 500' x 3' average; upsize (1) 48" x 50' culvert; patch pavement.	$42,000	Medium Term	Road Commissioner	Deferred; lack of funding
	7. Grading: Crawford Rd, Pokey Rd, Spearin Rd, and Berry Rd.	10000	Short Term	Roads Commissioner	On-going
	8. Tree and brush removal to protect power lines--400±' on the Davis Rd starting at the Route 9 end, and the Spearin Rd should have 1000±', (500±' on either side of the stream/bridge).	$10,000	Short Term	Road Commissioner	Pending
	9. Emergency Generators in the School and Municipal building,	$50,000	Medium Term	Selectboard	Deferred; lack of funding
	10. Fiber broadband internet for the entire town,	$50,000	Medium Term	Selectboard	Deferred: lack of funding
	11. Pave the Arm Rd, Davis Rd, Spearin Rd, and the Green Hill Rd.	$50,000	Medium Term	Roads Commissioner	Deferred; Lack of funding
	12. Bridge on the Spearin Rd,	1,000,000	Medium term	Roads Commissioner	Deferred; Lack of funding.
Baileyville	1. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. South Princeton Rd. Culvert on Peeper l Brook is compromised and a temporarily fixed—needs to be replaced	$50,000	Short Term	Road Commissioner	Deferred: Lack of funding
	Staples Rd- Low terrain—raise out of flood zone	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	Wastewater Treatment Plant—adjacent to St. Croix River—possible flood risk—Upgrade scoping study	$35,000	Medium Term	Select board	Deferred; lack of funding

Beals	1. Town Landing: Erosion repair of ramps and pavement	$30,000	Short term	Selectmen	Pending funding
	2. Back Field Park; riprap 500' shoreline to protect turnaround.	$50,000	Short Term	Selectmen	Partially funded, pending further funding
	3. Boat Cove Rd Area on Alley's Bay Rd; rip rap 1,000' of roadway, install stone barrier.	$200,000	Long Term	Selectmen	Deferred; lack of funding
	4. Beals Bridge Approach: Dig out and repair/rebuild to be higher. Riprap and replace guardrail once finished	$25,000	Short term	MDOT	Pending funding
	5. Bayview Drive: Build up low lying road where sloping seaward, repave, riprap and stone barrier	$25,000	Short term	MDOT	Pending funding
	6. Hard Head Rd; rip rap shoreline less than 500'.	$10,000	Short Term	Road Commissioner	Deferred; lack of funding
	7. Town Landing Extension Project- Build concrete wall along easterly side of landing, fill with riprap, pave at the surfaces to match current level of payment	$287,000	Long term	Selectmen	Deferred; lack of funding
	8. Shore Rd; rip rap shoreline, install stone barrier.	$15,000	Short Term	Road Commissioner	Deferred; lack of funding
	9. Repair and/or replace two damaged floats at town wharf		Short Term	Harbor Master	Deferred; lack of funding
Calais	1. Pikes Park ditch/culvert overflow	$100,000	Long Term	Public Works	Deferred; lack of funding
	2. Waterfront Walkway ditch/culvert overflow	$100,000	Long Term	Public Works	Deferred; lack of funding

	3. Nash's Dam access road ditch/culvert overflow	$100,000	Long Term	Public Works	Deferred; lack of funding
	4. Hardscrabble Rd. ditch/culvert overflow.	$100,000	Long Term	Public Works	Deferred; lack of funding
	5. North St. Public Safety Building ditch/culvert overflow	$100,000	Long Term	Public Works	Deferred; lack of funding
	6. Calais High School; catch basin, ledge removal and drainpipe for access road 500'.	$326,000	Long Term	Public Works	Deferred; lack of funding
	7. Beaver Lake Rd; stabilize road for fire control, 150'.	$30,000	Short Term	Public Works	Deferred; lack of funding
	8. Calais Avenue; upsize culvert 36" x 120'.	$100,000	Long Term	Public Works	Deferred; lack of funding
	9. Stabilize City Pier from erosion	$1.2 million	Long Term	Public works	Deferred: Lack of funding
	10. Wastewater Treatment Plant-erosion	$4 million	Long Term	Public works	Deferred: Lack of funding
Charlotte	Oscar Brown road was widened on the corner and new culverts put in.		Complete d	Road Commissioner	
	Larger culverts were installed at Fisher Brook		completed	Road Commissioner	
Columbia	1. Addison Rd. Culvert	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Georgetown Woods Rd. culvert	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding

	3. Saco Rd—both bridges	$200,000	Medium Term	Road Commissioner	Deferred; lack of funding
Cutler	1. Beach Erosion at Walter's Beach, and Turner's Stream Beach	$200,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Flooding at Destiny Bay Rd	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	3. Flooding on Cove Rd and Bridge	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	4. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
Danforth	1. Storm drainage system failing on Main St.	$200,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Bancroft Rd. prone to flooding	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	3. Culvert upsizing, bridge replacement on South Greenland Cove Rd at Greenland Brook.	$200,000	Medium Term	Road Commissioner	Deferred; lack of funding
	4. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
Dennysville	1. Culvert on Smith Ridge Rd.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. The Lane; elevate 1,000' x 1', ditch 2,000', add (3) 18" x 20' culverts and repave.	$66,000	Long Term	Road Commissioner	Deferred; lack of funding
	3. Milwaukee Road; on the side adjacent to Dennysville River, opposite 83 Milwaukee, install rip rap and add 2' gravel for about 800 of this dead-end road to reduce flooding.	$450,000	Long Term	Road Commissioner	Deferred; lack of funding
East Machias	1. Factory Rd; move 1,000' of road, excavate hillside and repave.	$125,000	Long Term	Road Commissioner	Deferred; lack of funding
Jonesboro	1. Repairing boat ramp		Underway	Road Commissioner	Funded through FEMA
	2. Evergreen Point Rd—edge of road is washing out for the last 1/8th mile	500,000	Long Term	Road Commissioner	Deferred; lack of funding
	3. Looks Point Rd. 1st culvert over Bean Brook—needs an overflow pipe—tides overwhelm culverts coming back up	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding

	4. School Rd. upsize culvert behind school	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	5. Upscale Culvert over Ebenezer brook on Whitney St. and on Station Rd.—currently duel round culverts—30 inches.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	6. Culvert 1/10th mile west of Ebenezer Brook	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	7. Culverts at bottom of long hill on Station Rd.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	8. Hillman Brook –Looks Point Rd.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
Jonesport	1. Cross Rd; grade and shape 5,220' of rd., add 24" x 30' culvert, raise road to prevent erosion.	$25,000	Medium Term	Board of Selectmen	Deferred; lack of funding
	Sand River Beach Boat Launch		Medium Term	Board of Selectmen	Deferred; lack of funding
	Maria Way Dock damage—connection brackets damaged		Medium Term	Board of Selectmen	Deferred; lack of funding
	Pier Piling Marina Way Dock—		Medium Term	Board of Selectmen	Deferred; lack of funding
	Richardson Cemetery slope loss		Medium Term	Board of Selectmen	Deferred; lack of funding
	Veteran Memorial Area slope loss		Medium Term	Board of Selectmen	Deferred; lack of funding
Lubec	1. Crow's Neck Road; install drainage improvements.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Improve ditching, upsize culverts as needed—Straight Bay Rd (Morong Stream Crossing)	$50,000	Medium Term	Road Commissioner	Town acquired excavator; some ditching has been done.
	3. North Lubec Rd. (Pirate Creek Bridge)	$250,000	Medium Term	Road Commissioner	Deferred; lack of funding
	4. Address flooding at Boot Cove Rd (East of Bailey's Mistake Beach Dixie Rd (Just North of Jones Rd), South Lubec Rd (just West of Carrying Place Cove Rd), South Lubec Rd (just East of Carrying Place Cove Rd), South Lubec Rd (just North of Alan Brooks Salt Pond),	500,000	Medium Term	Road Commissioner	Deferred; lack of funding

Machias	1.Bridge and Seawall complex needed to protect downtown businesses from storm flooding and high tide events	$20,000,000	Medium Term	Town Manager/ MDOT	Deferred; lack of funding
	2. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
Machiasport	1 Manage erosion and flooding on Beach Road, Pettegrow Point Road, Port Road	100,000	Medium terms		Deferred; lack of funding
Meddybemps	1. Lake bank stabilization behind town hall 12' x 10'.	$6,000	Short Term	Road Commissioner	Deferred; lack of funding
Milbridge	1. Chipman's Wharf stabilization and reconstruction	$300,000	Short term	Private Landowner with Town Assistance	
	2. Inland Lobster Wharf	$200,000	Short Term	Harbor Master	
	3. Sawyer Wharf	$150,000	Short Term	Private Landowner with Town Assistance	
	4. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	
	5. Dorr Lobster Wharf	$100,000	Short Term	Private Landowner with Town Assistance	
	6. Bar Island Rd-Replace gravel in washout, remove concrete block, add a 15-inch overflow culvert, then paved	$6,955	Short Term	Road Commissioner	
Northfield	1. Eastern Ridge Rd; blast ditch line 50', grub and ditch 15,000'.	$38,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Smith Landing Rd; grub and ditch 15,000'.	$32,000	Medium Term	Road Commissioner	Deferred; lack of funding
Robbinston	1. Ridge Road; upgrade 48" culvert (Mill Stream crossing)	$10,000	Short Term	Road Commissioner	Deferred; lack of funding
	2. Ridge Road; raise road surface 24," install (2) 24" culverts 600'.	$35,000	Medium Term	Road Commissioner	Deferred; lack of funding
	3. Brewer Road; upgrade (3) 24" culverts – Eastern Stream crossing	$15,000	Short Term	Road Commissioner	Deferred; lack of funding
	4. Brewer Road; ditch 3,000' along Eastern Stream	$12,000	Short Term	Road Commissioner	
	5. Brewer Road; upgrade (4) 24' culverts on Picnic Hill	$16,000	Short Term	Road Commissioner	
	6. Ridge Road; ditch 1200' (Johnson's Tree Farm)	$10,000	Short Term	Road Commissioner	

	7. Lake Road; upgrade 6' culvert at Mill Stream	$15,000	Short Term	Road Commissioner	
Roque Bluffs	1. Improve ditching, upsize culverts as needed.	$50,000	Medium Term	Road Commissioner	Deferred; lack of funding
	2. Schoppee Point Road; Install erosion control measures past Watts Beach on the left.	$100,000	Long Term	Road Commissioner	New
	3. Raise Approaches to Johnson Cove Rd.	1,000,000	Medium Term	Road Commissioner	Deferred; lack of funding
Steuben	4. Unionville Rd-Stanley Point Rd; ditch 15,000', upsize (1) 24" x 40' culvert.	$31,000	Medium Term	Road Commissioner	Deferred; lack of funding
	Pigeon Hill Road – 1st set of cross culverts experience flooding, erosion & road overtopping. — Culvert upgrades	$31,000	Medium Term	Road Commissioner	Deferred; lack of funding
	Eastside Road – 1st set of cross culverts experience flooding, erosion & road overtopping. Need Culvert upgrades	$31,000	Medium Term	Road Commissioner	Deferred; lack of funding
Waite	1. Old Mill Rd; ditch 5,000', upsize 18" to 36" x 40' culvert.	$12,000	Short Term	Road Commissioner	Deferred; lack of funding
	2. Culverts on Bingo Rd. need to be upgraded	$34,000	Medium Term	Road Commissioner	Deferred; lack of funding
Whitneyville	1. Canal Rd; upsize (3) 15" culverts with 18" x 30' culverts, add 18" x 30' culvert.	$6,500	Short Term	Road Commissioner	Deferred; lack of funding
	2. Back Street Rd; upsize 12' culvert with 18" x 30' culvert.	$1,500	Short Term	Road Commissioner	Deferred; lack of funding
	3. Marshfield Flats Rd; upsize 12" cmp with 24" x 30' culvert.	$2,400	Short Term	Road Commissioner	Deferred; lack of funding

SECTION 6 PLAN MAINTENANCE PROCEDURES

Monitoring, Evaluating and Updating the Plan

Monitoring, Evaluating and Updating the Plan
Requirement §201.6(c)(4)(i): (The plan shall include a plan maintenance process that includes) a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Part 201.6(c)(4) of the Federal Disaster Act Rule requires a formal maintenance process to take place to ensure that the Mitigation Plan remains an active and pertinent document. The plan maintenance process includes a

schedule for monitoring and evaluating the plan at least every five years and continued public participation throughout the plan maintenance process.

Eighteen months prior to the Hazard Mitigation Plan update deadline, Washington County Emergency Management Agency will organize a Hazard Mitigation Planning Committee meeting. Washington County EMA will invite the public, town managers, selectmen, EMA directors and other interested parties to participate.

The Hazard Mitigation Planning Committee will review existing hazards of concern and determine whether any new hazards were presented throughout the past four years. The status of current mitigation projects will be updated, and new projects will be added as needed. Once all hazards, projects, maps, and county information have been updated, the Washington County Hazard Mitigation Plan draft will be submitted to MEMA for review and recommendations before the final draft is forwarded to FEMA for review and approval pending adoption (APA). After APA, the towns will adopt the plan for final approval and start another five-year plan cycle.

Monitoring the Plan

Progress on the plan will be monitored via monthly meetings with MEMA and/or meetings with local EMAs and following every federally declared disaster. On an annual basis, Washington County EMA will meet with EMA directors to conduct a risk assessment and project review. The Washington County EMA is responsible for contacting the Washington County Mitigation Team and organizing a formal review meeting every four years.

Washington County EMA also intends to work with MEMA officials, local units of government and others in periods following disasters to better understand how the region can mitigate future damages to roads, critical facilities, residential structures, and businesses. The mitigation plan and project application process will also be addressed at each federal disaster kick-off meeting and will be reinforced via email announcements for workshops and grant application deadlines.

Evaluating the Plan

Annually, and after each disaster declaration, Washington EMA, in consultation with the Planning Team, will review the risk assessment section of the plan, as well as the strategies contained in the strategy section, to determine their relevance to changing situations in the county, as well as changes in state or federal policy, to ensure that they are addressing current and/or expected conditions. The Team will also review the various implementation actions will report on the status of these actions, and, where applicable, will report on which actions worked well, whether difficulties

have been encountered, how coordination efforts have been proceeding, and which actions should be revised. This is the same method the county used in the prior plan for evaluating the plan.

Updating the Plan

Based on the annual or disaster-related reviews, the County EMA Office will make provisions for updating the plan and submitting it to the State Hazard Mitigation Officer in the fourth year of the planning period. At the beginning of the fourth year of implementation of this Plan, the County EMA will convene a meeting of the local EMA Directors, who will serve as liaisons to other municipal staff and officials. Based on the evaluation of the Plan, proposed changes will be prepared for the following five-year period. The County EMA and the County Hazard Mitigation Planning Team will rely on EMA Directors for input, as well as public input obtained through public workshops, mailings, and phone-in meetings. Proposed changes to the Plan will be submitted to the Maine Emergency Management Agency and the Federal Emergency Management Agency for review. The State Hazard Mitigation Officer will review the plan prior to submittal to FEMA for conditional approval. After the plan has been conditionally approved by both the state and FEMA, the municipalities and tribes will have one year to formally adopt the revised plan.

Incorporation into existing Planning Mechanisms

Incorporating Mitigation into other Planning Mechanisms	
Requirement §201.6(c)(4)(ii): (The plan shall include a plan maintenance process that includes) a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.	
Element	C6. Does the plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?

Identification of Local Planning Mechanisms

County government is very limited in scope and authority to control development within the municipalities in Washington County. Within Maine, most government authority is derived from state statutes and rules and with municipal "Home Rule" ordinances. All the townships in the Unorganized Territory fall under the jurisdiction of the Maine Land Use Planning Commission and are therefore controlled and governed by the State of Maine.

There were very few ordinance-related mitigation measures identified by the Washington County Hazard Mitigation Team. Most of the mitigation measures identified and selected by towns are structural projects, especially regarding roads since they are the lifeline to employment, goods, and services.

Section 5 of this Plan provides the strategies that will make Washington County more resistant to the hazards that were profiled in the previous sections. Municipalities have already incorporated the strategies recommended by this Plan into local planning mechanisms as discussed in the paragraphs below. By adopting this plan, each community, as well as Washington County, is agreeing to continue implementation of these strategies.

Available planning mechanisms at the municipal level, and the extent to which that have incorporated local hazard mitigation, include:

- Local comprehensive plans. Comprehensive plans are policy documents that address a wide range of issues affecting the future of the community, and those relating to public safety and

  environmental protection would be consistent with the strategies contained in this plan. In general, local comprehensive plans do not include recommendations on specific projects, although they may contain recommendations that roads and their associated infrastructure be upgraded as funds become available.

- Local flood plain management ordinances. Washington County's municipalities that have joined the Flood Insurance Program have adopted floodplain management ordinances aimed at managing development in flood-prone areas. In addition, all portions of the Unorganized Territory are in the Flood Insurance Program by virtue of being under the regulatory jurisdiction of the state's Land Use Planning Commission.

- Shoreland zoning ordinances. All the towns in Washington County are required to have a shoreland zoning ordinance, whether adopted by the municipality or imposed by the Maine Department of Environmental Protection. The state's Land Use Planning Commission has adopted shoreland protection controls for the county's portion of the Unorganized Territory. Shoreland zoning ordinances contain requirements for locating structures outside of known flood hazard areas and/or for complying with the requirements of municipal flood plain management ordinances.

- Subdivision review requirements. Maine state law contains criteria that local officials must use in conducting subdivision reviews. In addition, many communities have also adopted subdivision regulations aimed at managing growth in their communities.

- Capital improvement plans. Some of the larger municipalities have capital improvement plans; most of the smaller ones do not, but they do have local budgeting processes which are used to examine potential expenditures in detail and establish overall spending priorities.

- Local Budgeting Processes (which are used to examine potential expenditures in detail and establish overall spending priorities).

- Road maintenance planning efforts. These may include priorities for local improvements, but not necessarily engineering studies or cost benefit analyses.

- Emergency management and mitigation planning.

- Fire prevention planning and coordination, including participation in mutual aid agreements and multi-town wildfire training exercises.

- Grant writing (many of the County's municipalities have been active in applying for grants to address municipal priorities).

In addition, the state has a building code which became effective in December of 2010. This code addresses some hazards, such as heavy snow loads, although it does not govern the location of structures.

All towns in Washington County hold annual town meetings which are an integral part of public planning. These meetings allow all citizens equal opportunity to communicate their concerns and opinions on the state of the town and how to move forward with these concerns. The citizens in attendance at these meetings have a vested interest in the town and how and what is funded annually. Through the municipal budget process and long-term planning based on the identified mitigation actions, towns will be better able to allocate funding for these projects to safeguard their communities.

Note: See Strategy section of this plan for a town-by-town summary of existing authorities, policies, programs, and resources available to accomplish hazard mitigation.

The County EMA Office will monitor the implementation of projects that were listed by the communities. The County EMA Office will also continue to assist municipalities with the completion of FEMA Hazard Mitigation Assistance (HMA) Grant applications.

At the local level, there has been implementation progress in some areas, but no known actions in other areas:

- Local comprehensive plans: no state money for new plans or updates.
- Local budget processes: see list of projects completed with town funds.
- Road maintenance planning efforts: some towns in Washington County are now tracking repair costs and repetitive damages more closely.
- Emergency management and mitigation planning: – This has included dam exercises, ICS/NIMS training.
- Ordinances: no state money for new plans or updates.
- Grant application: when available, the county's municipalities have been active in applying for grants to address mitigation issues. Most of the towns are now aware that 406 mitigation funding can be obtained through the Public Assistance Program after a disaster declaration.

In addition, the County EMA and all municipal EMAs have continued to advise their respective jurisdictions on pending hazard events, such as winter storms, as well as posted public service announcements in public locations such as municipal offices.

The County EMA has notified municipal EMAs and local officials of hazard mitigation workshops such as those related to the Pre-Disaster and Hazard Mitigation Grant programs, and workshops with hazard mitigation content such as those sponsored by Maine Department of Transportation's Local Roads Center for tracking annual road conditions and associated costs.

Continued Public Participation	
Requirement §201.6(c)(4)(iii): (The plan shall include a plan maintenance process that includes) a discussion on how the community will continue public participation in the plan maintenance process.	
	A5. Is there discussion on how the community(ies) will continue public participation in the plan maintenance process?

Element	A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating, and updating the mitigation plan within a 5-year cycle)?

Washington County is committed to involving the public directly in the continued reshaping and updating of the Hazard Mitigation Plan. The Hazard Mitigation Planning Team is responsible for reviewing and updating the Plan. Although the members of the Committee represent the public to some extent, the public will also be given an opportunity to directly comment on and provide feedback about the Plan.

There is constant public access to the mitigation plan via the Washington EMA website. A hard copy of the hazard mitigation plan will also be available at the Washington County Emergency Management Agency for review and comment by the public.

Washington EMA holds quarterly local EMA meetings, participates in municipal select board meetings throughout the county, and attends fire chief meetings throughout the year. After significant natural hazard events there are informational meetings held to review the actions taken during the event and recommended documentation of the event. Annually, we offer preparedness classes to the citizens of our county through adult education and strive to maintain continuous outreach to the public through displays, our website and newspaper articles.

The Washington County EMA Office will continue to provide a public comment period at each meeting of the Hazard Mitigation Planning Team. The purpose of the public comment period will be to provide the public a forum at which members of the public can express concerns, opinions, or ideas about the Plan. The County EMA Office will be responsible for providing public notice for each meeting of the Hazard Mitigation Planning Team, and for including in the notice information about the public comment period.

In Washington County, hazard mitigation is far more than a written plan. It is a critical part of the overall mission of the Washington County Emergency Management Agency (EMA) and its municipalities, and it is fully integrated into all aspects of planning, preparedness, training, response, and recovery. A partial list of Washington County's public outreach efforts includes:

- Maintaining and updating the EMA's website
- Posting draft copies of the Hazard Mitigation Plan on the EMA website
- Communicating with the public on an on-going basis through press releases
- Maintaining emergency communications systems
- Holding meetings and training sessions with local EMA officials
- Participating in public outreach efforts such as the annual Maine Preparedness Conference, the most recent of which was attended by over 500 people

The address and phone number of the Washington County EMA Office is:

Washington County Emergency Management Agency
28 Center St. PO Box 297,
Machias, Maine 04654 Office Phone (207) 255-3931
E-mail: WNEMA@washingtoncomaineema.gov

APPENDICIES

Municipal Surveys

Outreach Washington County Emergency Management Agency

Washington County
Emergency Management Agency
28 Center Street
P.O. Box 297
Machias, Maine 04654
(207) 255-3931

Press Release

For Immediate Release March 28, 2024

Washington County Hazard Mitigation Plan Update Kick-Off meeting

The 2018 Washington County Hazard Mitigation Plan (HMP) expired in October 2023; Washington County Emergency Management has started the process of working on the 2024 HMP Update. Once the plan is approved by FEMA and adopted by the individual municipalities as their own hazard mitigation plan, those municipalities will be eligible for certain federal funding.

Washington County EMA is holding the official "kick-off" meeting for the 2024 HMP Update process on **Wednesday, April 10, 2024 at 6:00 p.m.** Meeting will be held in the Conference room at Sunrise Economic Council,7 Ames Avenue in Machias or by Zoom https://us06web.zoom.us/j/86753987947.

This meeting is intended to be an informative session for the general public, to educate the community on the purpose of the plan, how the municipalities are involved in the process, and the need for the entire community to have the opportunity to provide input.

In the near future, a survey will be made available to the public to help municipal, and county officials understand the concerns of the community. With all the damaging storms we have gone through in the last several years, public participation is even more important than ever. This is a public meeting and everyone is welcome!

Participation

Washington County Hazard Mitigation Plan – 2024 Update Kick Off Meeting AGENDA

April 10, 2024, 6 pm Sunrise County Economic Council

Attending: In person- Lisa Hanscom-Director-Christine Day-Deputy Director-Tanya Rucosky, Emily Philbrook, Philip Pinto, Robin Pinto.

Over Zoom: Brandon Ireland, William Lee, Joanne Champney, Steve Dunham, Linda Beal, Jean Savard, Ardis Brown, Lis Patryn, Tora Johnson, Glenda Beal, Michael Gray, Laura Jackson, and more waiting for List from Joanne Champney.

The meeting started at 6:03 and introductions were made. It was explained in the presentation what we need from all the towns and cities in Washington County to have a new Hazard Mitigation plan. There was talk of explaining more on the BRIC Grants at a future meeting. There was much discussion on Mapping out locations that are a hazard or may become a hazard in their community. Discussion on GPS, Google Earth, and areal maps that can be marked up to show locations of these hazard spots.

Included in this HMP will be its own section on High Hazard Dams in the county.

The Power Point presentation was sent the next morning April 11, 2024, to all contacts for Local EMD's, Selectmen and Councilors, and Town offices we have good accurate contact information for. We have also attached the Community Questionnaire in a JPEG Form, so you may use it on your social media sites.

Meeting concluded at 7:21 pm

Sample Email Sent to All Towns

above average rainfall, new construction obstructing water flow, etc.)

- *Is the property affected public or private property?*
- *Are there photos and/or video that shows the before and after (or even during!) a significant weather event? Who has a copy of the photos, videos, narratives of damage, etc.?*

The **municipal survey,** each town must complete will help you in your process to decide what projects to ultimately include in the 2024 plan. You don't necessarily have to do the survey first, but it may help you in your thought process.

Also, any time your municipal staff, Town Emergency Management Manager, community members/volunteers, long-time residents with historical knowledge, fire departments, and public works **spend any time** reviewing these projects, discussing projects or other parts of the hazard mitigation plan, **you'll need to use the attached attendance roster**. The feds are making this **mandatory** so that we can not only show that we've spent time working on the plan, but also show WHO worked on the plan and WHAT tasks have been completed by which individuals. You will need to provide these rosters to our office. I recommend using one per meeting/work session and then scanning them to us afterwards so you don't forget.

Give us a call if you have any questions.

Lisa M. Hanscom, *Director*
Washington County Emergency Management Agency
Phone: 207-255-3931 Mobile: 207-271-7755
28 Center St, Machias ME 04654
Web: www.washingtoncountymaine.com
Email: wcemadirector@washingtoncountymaine.com

Alexander Hazard Mitigation Plan Update Community Meeting Attendees
April 16, 2024

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: 4/16/24

Hazard Mitigation Planning Meeting Time In: 4:00 Time Out: 8:00 Location: Muni Bolding 50 cooperth

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Kenneth Colson	Alexander	214 5836		5
David Sanford	"	454 3011		10
Foster Carlow	"	454 2600		5
Larry Hill	"	454 3011		30
Carl Oakes	"	454 2344		5
David Davis	"	214 5683		5
Kristy Crawford	"	454 3011	alexander.taxcollector @gmail.com	10

Total Participants 7 Travel Time (Minutes) 70 Meeting Hours: 2hr Total Hours 2 Page 1 of 1

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Beals Select Board Meeting Reviewing the Hazard Mitigation Plan Update

May 14, 2024

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date 5/14/24

Hazard Mitigation Planning Meeting Time In: 6:30 Time Out: 7:30 Location: Beals Town Office

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Glenda Beal	Beals	598-5084	designersdaughter2@gmail.com	6
Lorena Faulkingham	Beals	497-5952	N/A	7
DANIEL F. DAVIS	Beals	497-5958	dfdavis5958@gmail.com	5

Total Participants 3 Travel Time (Minutes) 18 Meeting Hours: 1 Total Hours _____ Page ___ of ___

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Culter Selectboard Meetings

Discussing Hazard Mitigation Plan Update

April 9, 16, and 22, 2024 and May 8, 2024

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: 04/09/2024

Hazard Mitigation Planning Meeting

Time In: 10:00am Time Out: 2:00pm Location: Cutler Town Office

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Kimberly DAVIS	Cutler ME	259-3693	dKimberly765egmail.com	
Cynthia ~~Fates~~ Rowden	Cutler	259-3693	m.illudy@roadrunner.com	
Dave Glidden	Cutler	259-3693		

Total Participants _____ Travel Time (Minutes)____ Meeting Hours: _____ Total Hours _____ Page ___ of ___

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: 4/16/2024

Hazard Mitigation Planning Meeting

Time In: 12:00pm Time Out: 1:30pm Location: Cutler Town office

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Kimberly Davis	Cutler	259-3693	dkimberly26@gmail.com	
Cynthia ~~Bates~~ Rowden	Cutler	259-3693	mailladg@roadrunner.com	

Total Participants _____ Travel Time (Minutes)____ Meeting Hours: _____ Total Hours _____ Page ___ of ___

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: 4/22/24

Hazard Mitigation Planning Meeting

Time In: 10:00 Am Time Out: 1:30pm Location: Cutler Town Office

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Kim Brooks	Cutler	259-3693	dkimberly765@gmail.com	
Cynthia Hewston	Cutler	2596011	Mailady@roadrunner.com	

Total Participants ____ Travel Time (Minutes)____ Meeting Hours: ____ Total Hours ____ Page ___ of ___

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: May 8 2024

Hazard Mitigation Planning Meeting — Time In: 10:45 Time Out: 12:00 PM Location: Cutler Town Hall

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Kimberly Dawe	Cutler	263-7174	dkimberly765@gmail.com	
Cynthia Reuleke	Cutler	271-8107	Mailledy@roadrunner.com	
[illegible]	Cutler	812-2263	Mr.Gliddon5000.gmail.com	–

Total Participants ____ Travel Time (Minutes)____ Meeting Hours: ____ Total Hours _____ Page ___ of ___

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Danforth Comprehensive Plan Committee Meeting

which completed Hazard Mitigation Update Survey

April 23, 2024

Oct 1, 2024 | Machias Hazard Mitigation Meeting
Attendees: Tora Johnson Tanya Rucosky Lisa M Hanscom Ben Edwards, Joey Dennison, Mike Schoppee, Dakota Norton

Notes

- Projects
  - Upper Machias Master Plan, including stormwater for the downtown
  - Stormwater resilience for the aging and over-capacity infrastructure, outflows, and increase size of culverts in replacement
  - Explore problem of dry wells and pursue resources for help

- Comprehensive plan incorporating resilience
- Making the old town office more resilience and pursuing new, resilient municipal complex
- Continued upgrades to the wastewater system and treatment plant, including excess storage capacity

Attendance Roster

Core Capabilities: Mitigation, Physical Protective Measures, Risk Management, Resilience, etc.

Date: 4/23/2024

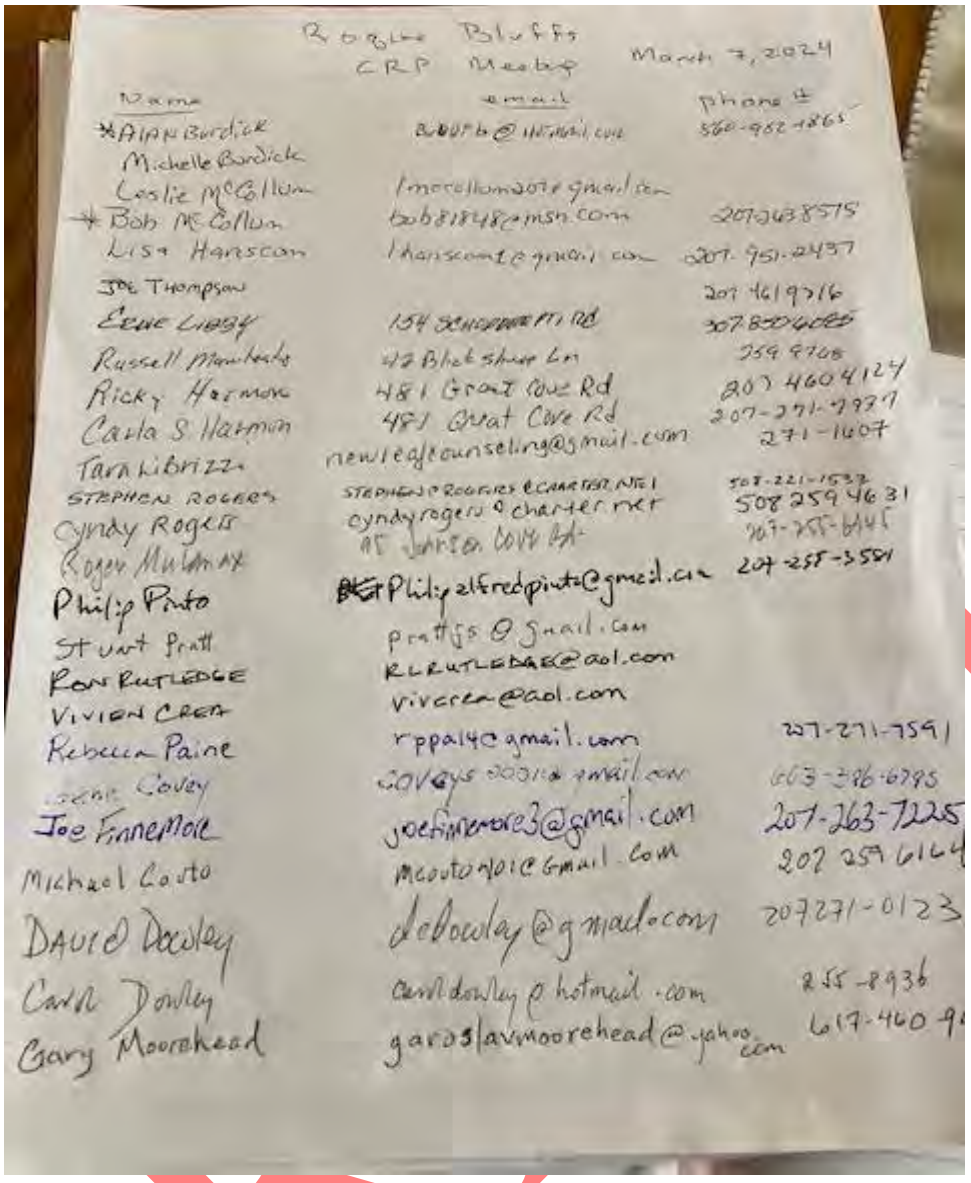
Hazard Mitigation Planning Meeting Time In: 5:30 Time Out: 8:15 Location: Dan forth town office

Name – PRINT	Town	Contact #	Email Address	Round-trip Travel Time in Minutes
Tara Mozdzier	Danforth	207-451-6368	araroscape@yahoo.com	5
Natasha Fuller	Danforth	207-949-1252	tashara83@gmail.com	10
Mara Crane	Danforth	207-521-1279	mara.crane@gmail.com	5
Trevor Noyes	Danforth	207-521-1590	trevorhoyes@yahoo.com	10
David Agar	Danforth	207-448-2431	[illegible]	10
Ardis Brown	Danforth	448-2371	townofdanforth@gmail	10

Total Participants 6 Travel Time (Minutes) 30 Meeting Hours: 1 1/2 Total Hours 17 1/4 Page 1 of 1

Federal Employees please note: Signing this roster confirms that you are aware that the value of any meals received in conjunction with this event must be deducted from your per diem expense reimbursement request.

Roque Bluffs Community Resilience Partnership Meeting
Which outlined hazard community vulnerabilities
March 7, 2024



Plan Review Publicity

PUBLIC NOTICE: Review of Draft 2024 Hazard Mitigation Plan

Washington County is inviting the public to review and provide feedback on the draft of the 2024 Hazard Mitigation Plan. The plan is available for review both online and in person. Feedback is crucial for ensuring the plan is accurate and meets the needs of the community.

In-Person & Zoom Meeting for Review:

An in-person meeting will be held at 28 Center St., Machias, ME on February 12, 2025 between 10 a.m-11:30 a.m. and 6 p.m.- 7 p.m. A Zoom option will also be available for those who cannot attend in person. Details for the Zoom meeting will be provided upon request.

Feedback Submission:

For those unable to attend, feedback can be submitted via email to **WNEMA@washingtoncomaineema.gov** by **February 12, 2025**.

The full draft of the plan is available for review on the Washington County Website under the **Emergency Management Agency** section or at the Washington County Emergency Management agency located at 28 Center St. Machias, ME.

Once any necessary corrections are made, the plan will be forwarded to MEMA and FEMA for final approval, and the five-year renewal cycle will begin in 2025.

For additional information, questions or a Zoom Link, please contact **WNEMA@washingtoncomaineema.gov**

Sent: February 29, 2025

Subject: Draft of 2024 Hazard Mitigation Plan – In-Person & Zoom Meeting for Review

Greetings,

I hope this email finds you well. I'm pleased to inform you that we have completed the draft of the 2024 Hazard Mitigation Plan and are preparing to submit it to FEMA for approval.

To ensure that everyone has the opportunity to review the plan and provide feedback, we would like to invite you to an in-person meeting and a Zoom session to discuss any errors, omissions, or general feedback you may have. Even if you don't find any corrections, we would greatly appreciate a few minutes of your time to confirm that the draft is satisfactory.

We understand that it may be challenging for everyone to attend in person, so we are offering a Zoom option as well for your convenience. The meeting will include Tanya Rucosky (consultant) and/or Washington County Emergency Management Staff, who will be available to answer any questions.

In-Person Meeting Details:

- **Location:** 28 Center St., Machias ME.
- **Date & Time:** February 12, 2025 10 a.m-11:30 a.m. & 6 p.m.- 7 p.m.

Zoom Meeting Details:

- **Zoom Link:** https://us06web.zoom.us/j/88993471569
- **Date & Time:** Feb 12, 2025 10:00 a.m. & 6 p.m. Eastern Time (US and Canada)
-
- Meeting ID: 889 9347 1569
- One tap mobile
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- +16469313860,,88993471569# US
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- • +1 929 205 6099 US (New York)
- • +1 301 715 8592 US (Washington DC)
- • +1 305 224 1968 US
- • +1 309 205 3325 US
- • +1 689 278 1000 US
- • +1 719 359 4580 US
- • +1 253 205 0468 US
- • +1 253 215 8782 US (Tacoma)

- • +1 346 248 7799 US (Houston)
- • +1 360 209 5623 US
- • +1 386 347 5053 US
- • +1 507 473 4847 US
- • +1 564 217 2000 US
- • +1 669 444 9171 US
- • +1 669 900 6833 US (San Jose)
-
- Meeting ID: 889 9347 1569
-
- Find your local number: https://us06web.zoom.us/u/kcOb6uw94x
- **Date & Time:** February 12, 2025 10 a.m.-11:30 a.m. & 6 p.m. – 7 p.m.

For those who are unable to attend, we encourage you to submit any feedback or comments via email to **WNEMA@washingtoncomaineema.gov** by **February 12, 2025**.

The full draft of the plan is attached to this email for your review. It is also available on the Washington County Website under the **Emergency Management Agency** section.

Once any necessary corrections are made, we will forward the updated plan to MEMA and FEMA for approval. After approval, we will request formal signatures from your elected officials, beginning the five-year renewal cycle in 2025.

If you have any questions or need further information, please don't hesitate to reach out.

I look forward to your participation.

Sincerely,

Lisa M Hanscom, Director
Washington County Emergency Management Agency
28 Center Street, P.O Box 297
Machias, ME 04654
Office: 255-3931
WNEMA@washingtoncomaineema.gov

February 10, 2025

Subject: Reminder: Review of Draft 2024 Hazard Mitigation Plan – In-Person & Zoom Meeting

Greetings,

This is a friendly reminder that the deadline to review and provide feedback on the draft 2024 Hazard Mitigation Plan is quickly approaching. We'd like to invite you to an in-person meeting and a Zoom session to discuss any errors, omissions, or general feedback you may have.

If you have already reviewed the plan, we would greatly appreciate a few minutes of your time to confirm that the draft is satisfactory, even if no corrections are needed.

Meeting Details:

In-Person Meeting:

Location: 28 Center St., Machias ME.
Date & Time: February 12, 2025 10 a.m-11:30 a.m. & 6 p.m.- 7 p.m.

Zoom Meeting:

Date &Time: Feb 12, 2025 10:00 a.m. and 6 p.m. Eastern Time (US and Canada)
Zoom Link: https://us06web.zoom.us/j/88993471569

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- • +1 305 224 1968 US
- • +1 309 205 3325 US
- • +1 689 278 1000 US
- • +1 719 359 4580 US
- • +1 253 205 0468 US
- • +1 253 215 8782 US (Tacoma)
- • +1 346 248 7799 US (Houston)
- • +1 360 209 5623 US
- • +1 386 347 5053 US

- • +1 507 473 4847 US
- • +1 564 217 2000 US
- • +1 669 444 9171 US
- • +1 669 900 6833 US (San Jose)
-
- Meeting ID: 889 9347 1569
-
- Find your local number: https://us06web.zoom.us/u/kcOb6uw94x

For those who are unable to attend, please remember that feedback can be sent via email to **WNEMA@washingtoncomaineema.gov** by **February 12, 2025**

The full draft of the plan is attached to this email for your review, and it is also available on the Washington County Website under the **Emergency Management Agency** section. Since the document is large, we've included it as an attachment for convenience.

Once any necessary corrections are made, we will forward the updated plan to MEMA and FEMA for approval. Following approval, we will request formal signatures from your elected officials, beginning the five-year renewal cycle in 2025.

If you have any questions or need further information, please don't hesitate to reach out.

Thank you for your attention, and we look forward to your feedback and participation.

Sincerely,
Lisa M Hanscom, Director
Washington County Emergency Management Agency
28 Center Street, P.O Box 297
Machias, ME 04654
Office: 255-3931
WNEMA@washingtoncomaineema.gov

Maps:

Hazard Mitigation Plan Map: Washington County

Map prepared by Sunrise County Economic Council, 2024

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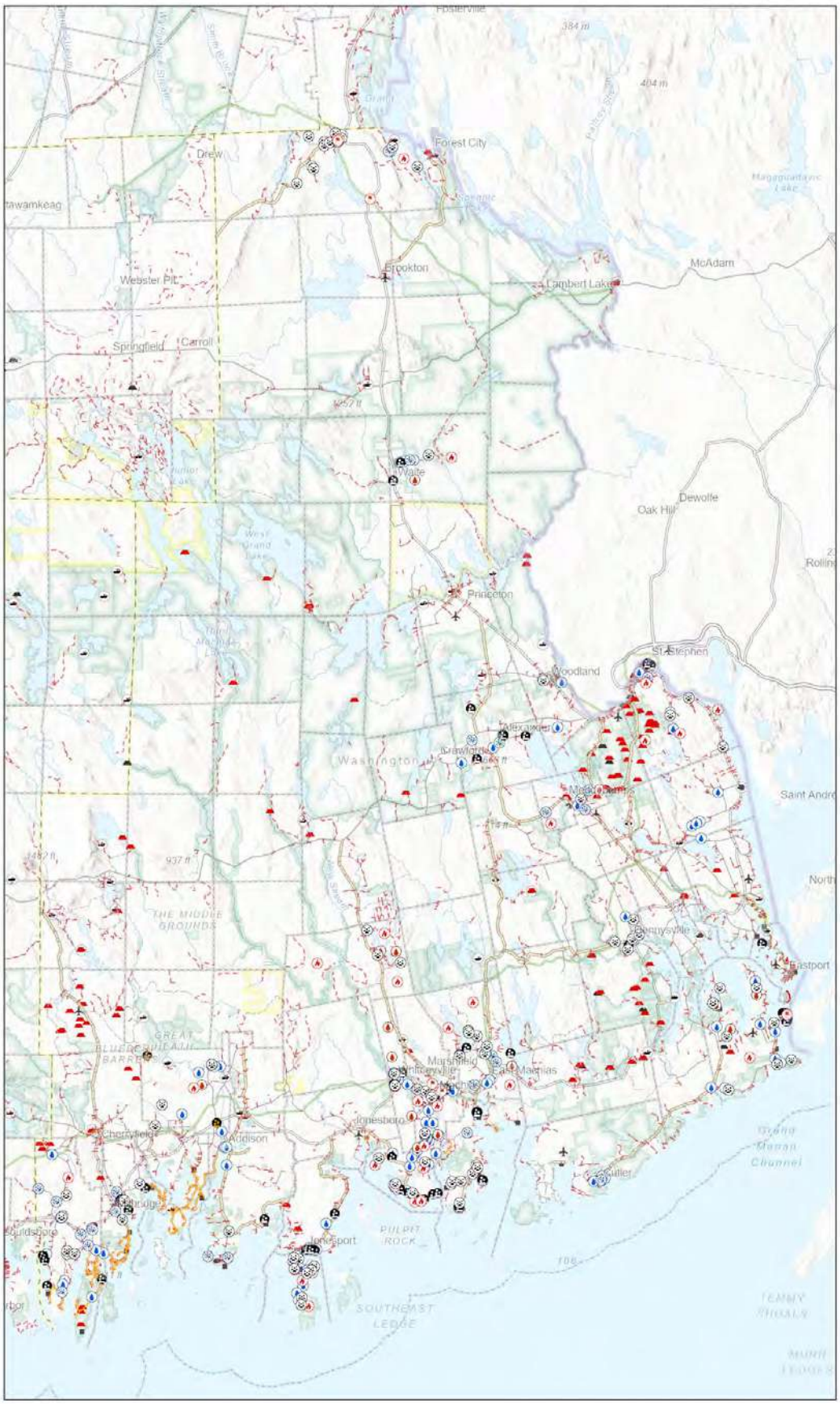


Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

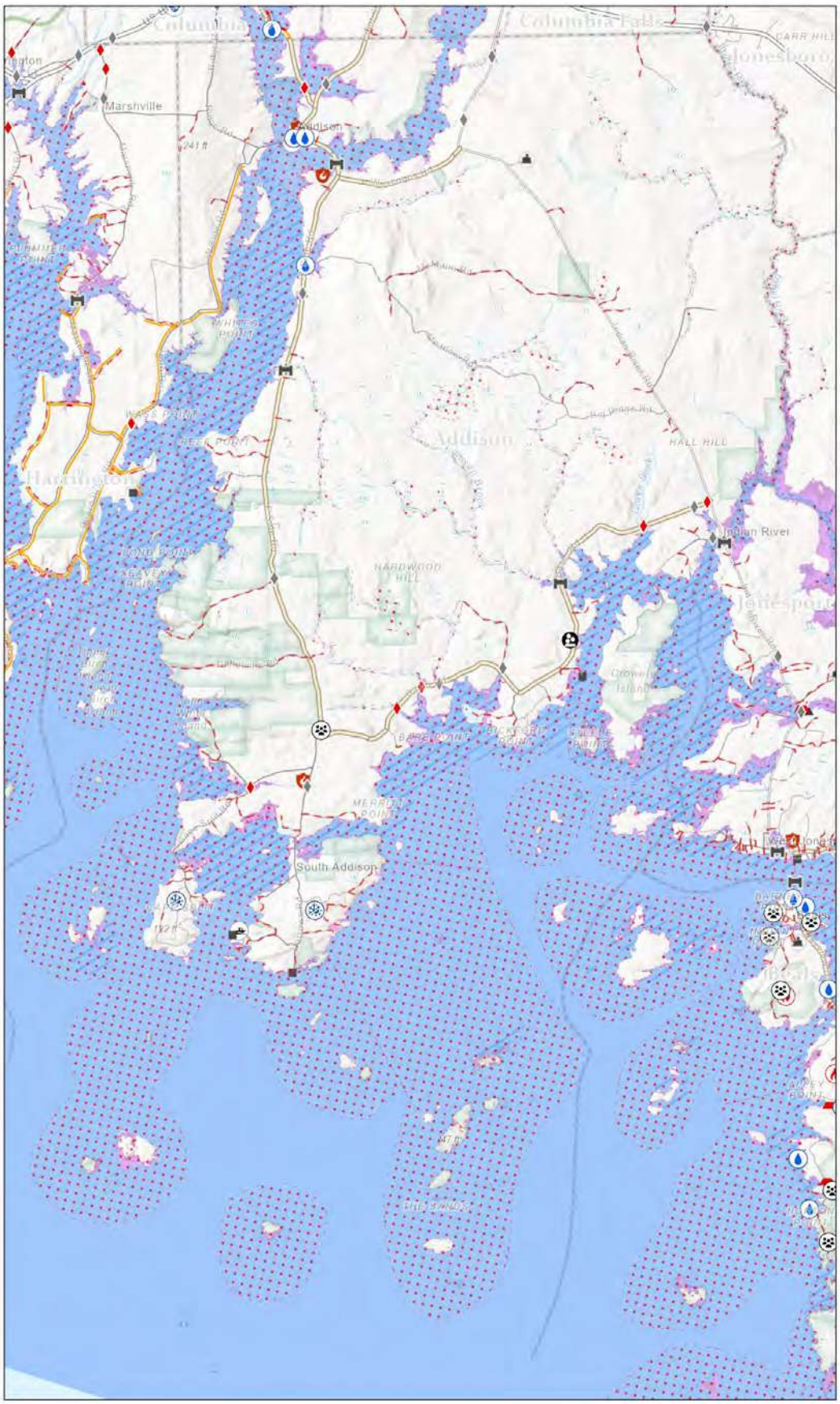
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Important Features

- Boat Launches
- Fish Wharf- Fair Condition
- Fish Wharf- Poor Condition
- Fishing Critical Infrastructure
- Airports
- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: Addison

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Alexander

Map prepared by Sunrise County Economic Council, 2024

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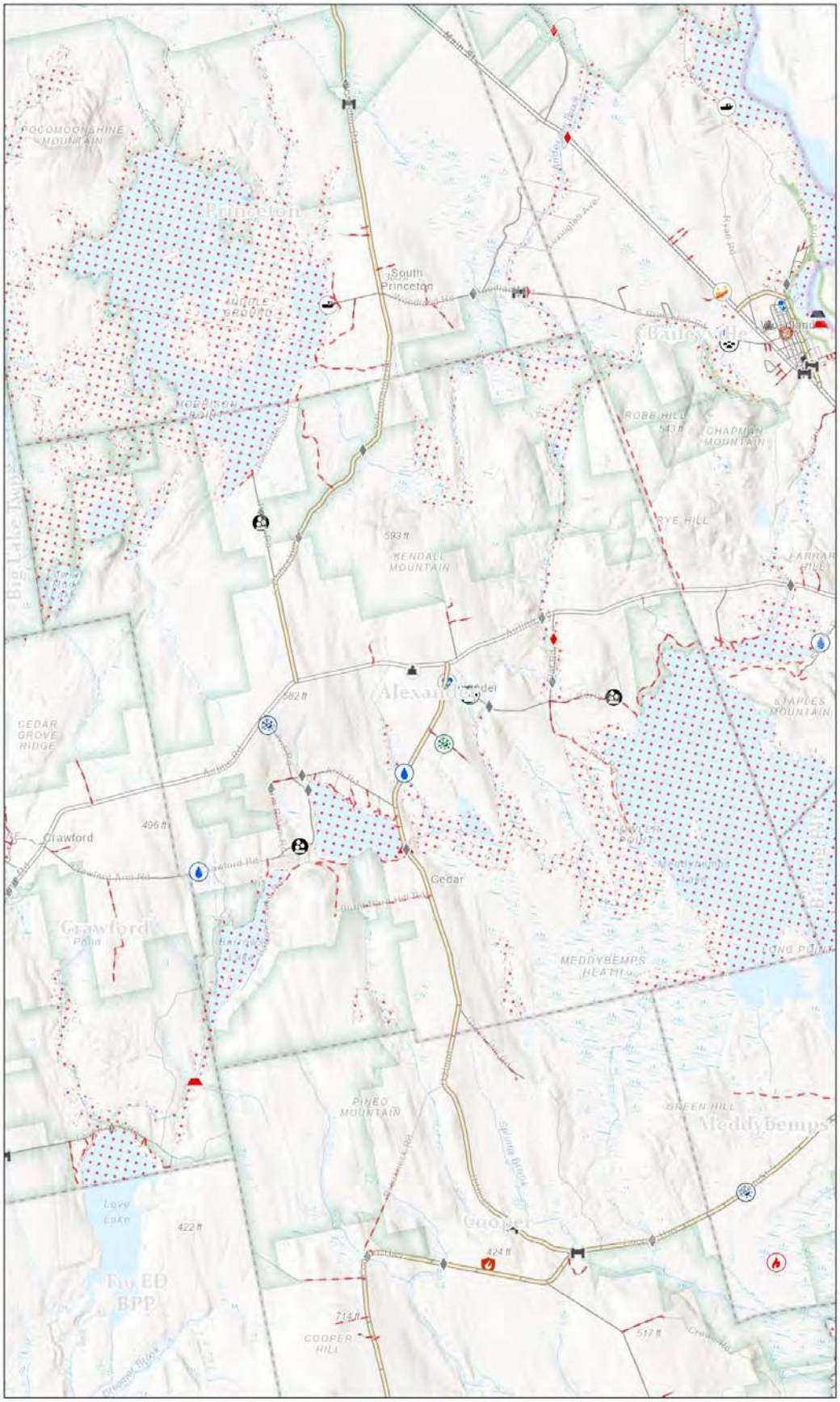

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Baileyville

Map prepared by Sunrise County Economic Council, 2024

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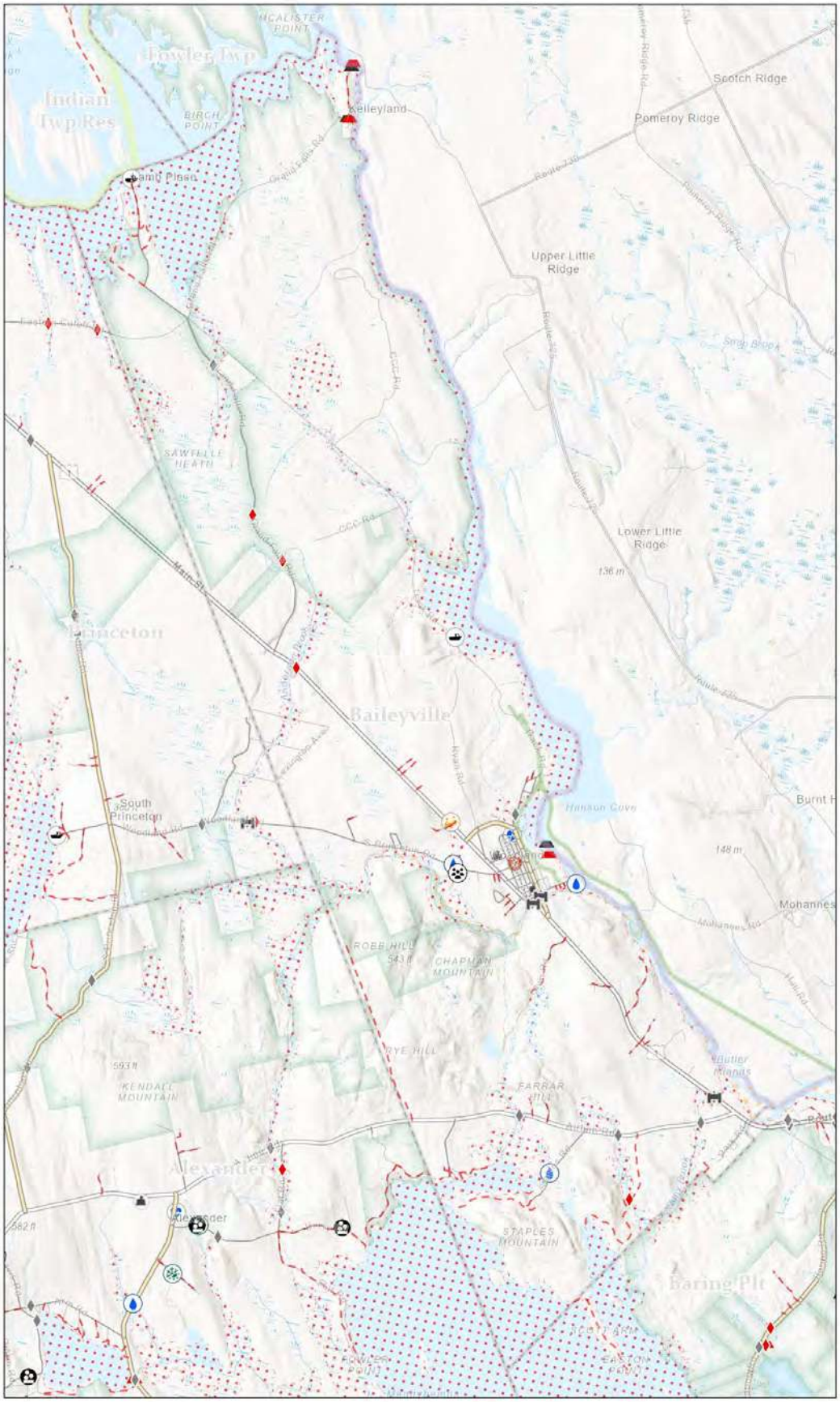

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: Baring Plt

Map prepared by Sunrise County Economic Council, 2024

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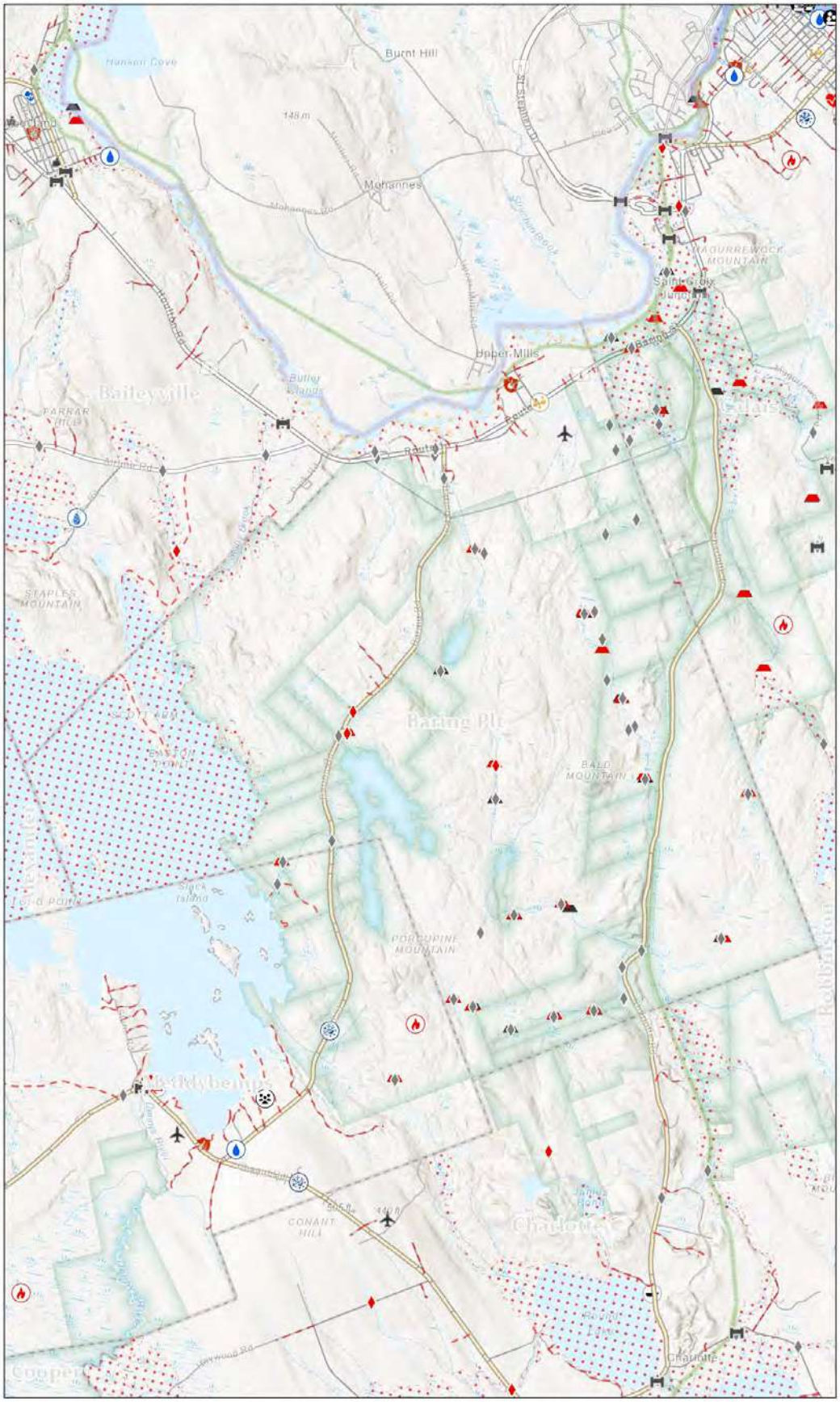

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Hospitals
- Childcare Providers
- Schools
- Boat Launches
- **Fish Wharf- Poor Condition**
- Airports
- Conserved Lands

Hazard Mitigation Plan Map: Beals

Map prepared by Sunrise County Economic Council, 2024

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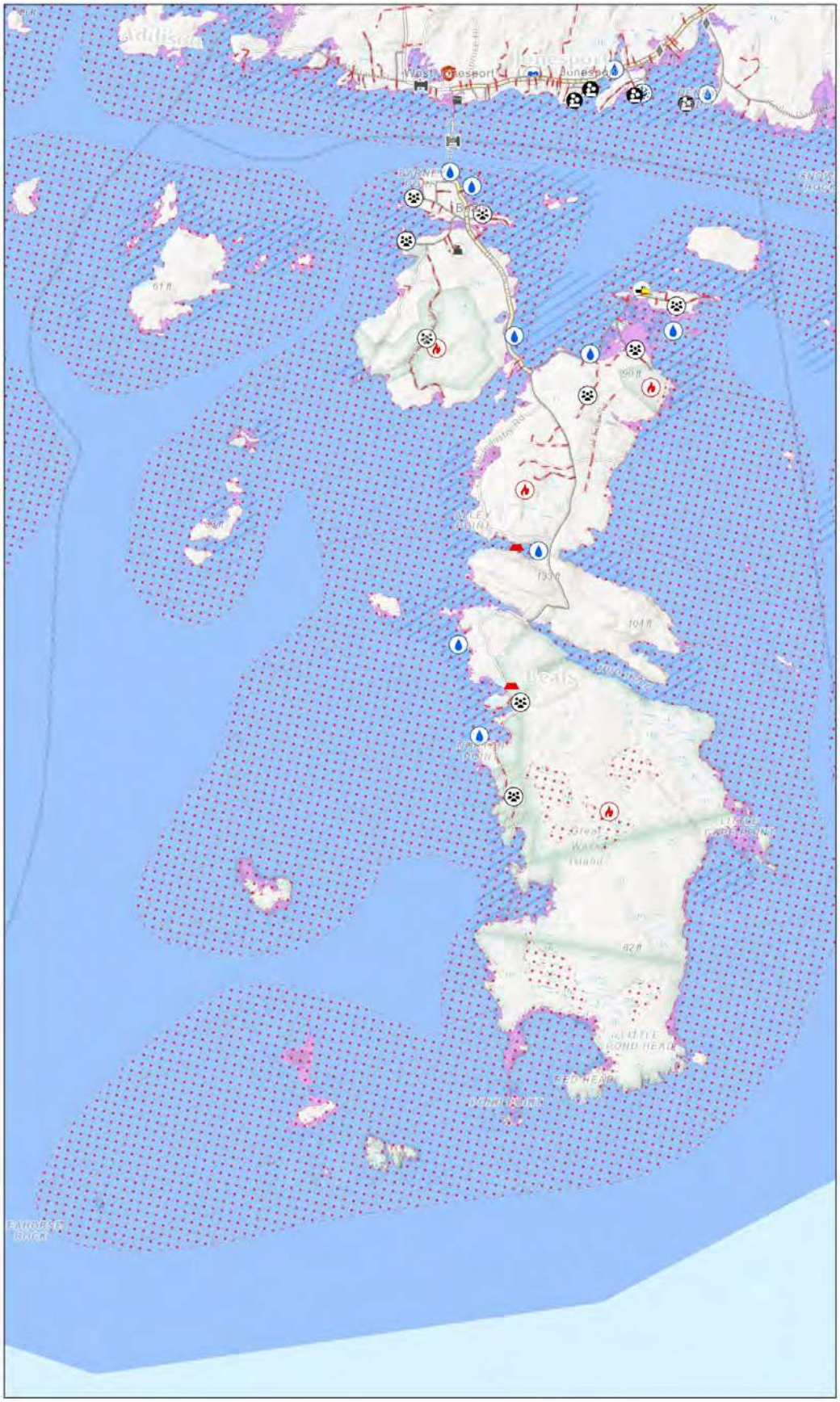


Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

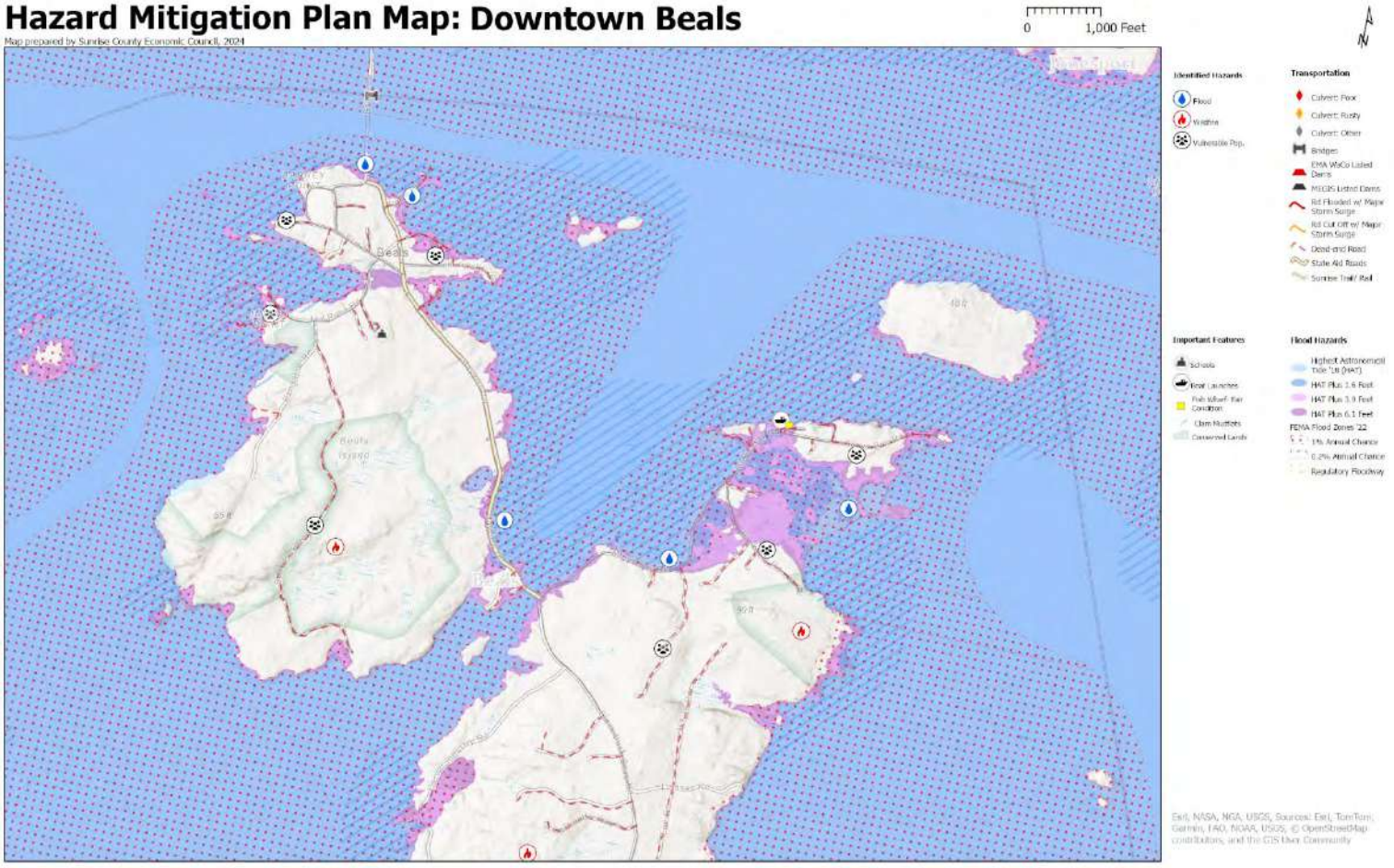
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Schools
- Boat Launches
- **Fish Wharf - Fair Condition**
- **Fishing Critical Infrastructure**
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Downtown Beals

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Beddington

Map prepared by Sunrise County Economic Council, 2024

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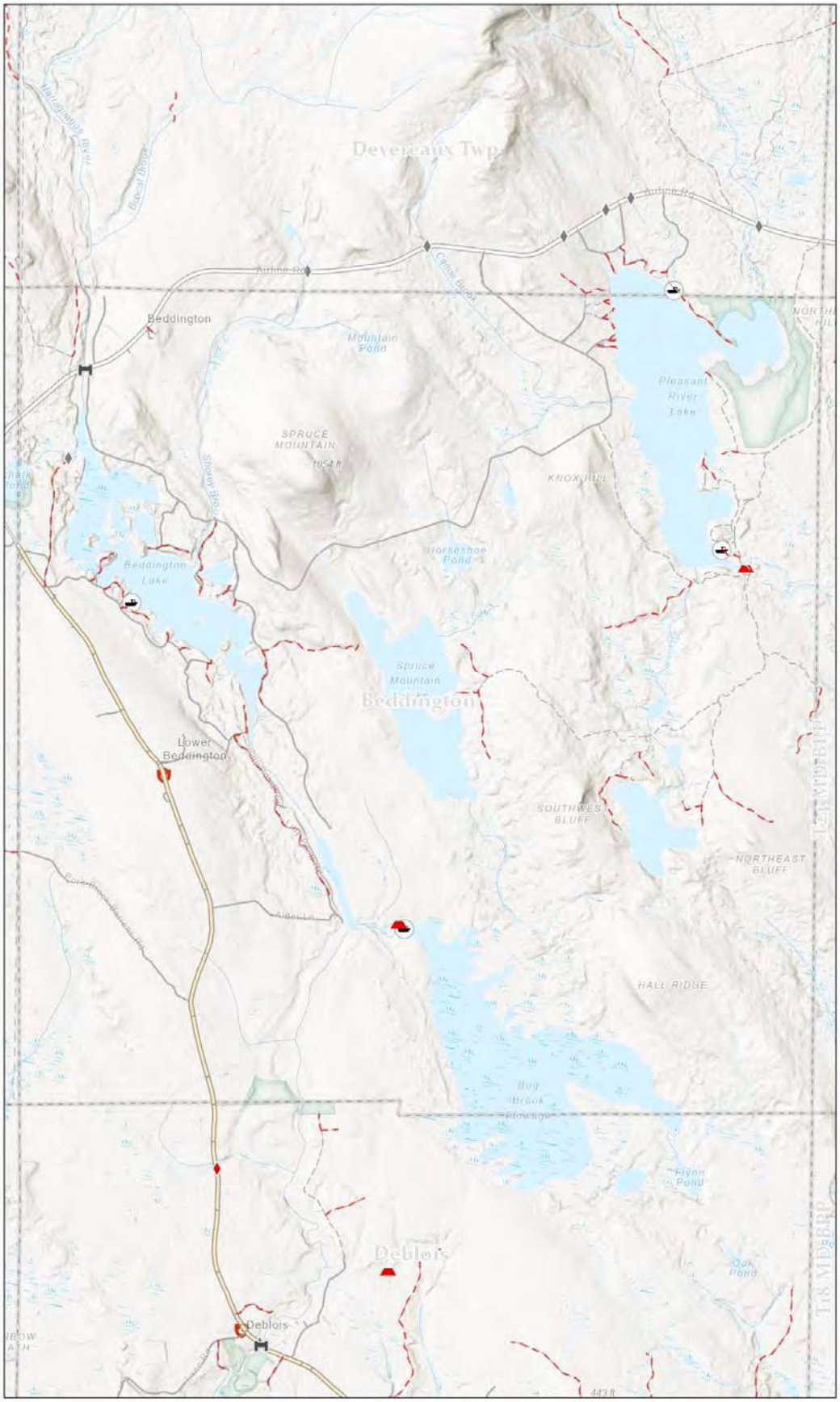

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Berry Twp

Map prepared by Sunrise County Economic Council, 2024

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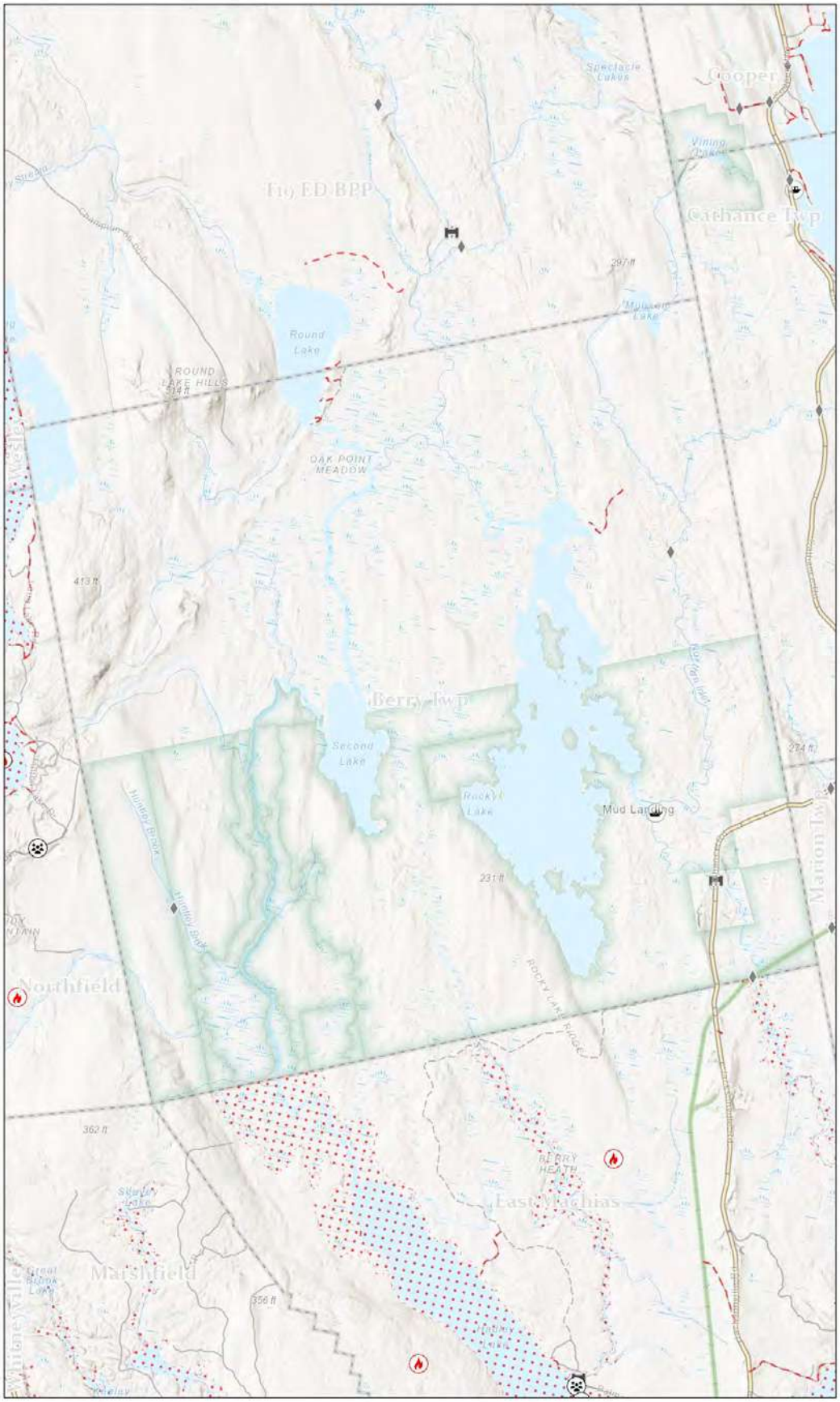

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Big Lake Twp

Map prepared by Sunrise County Economic Council, 2024

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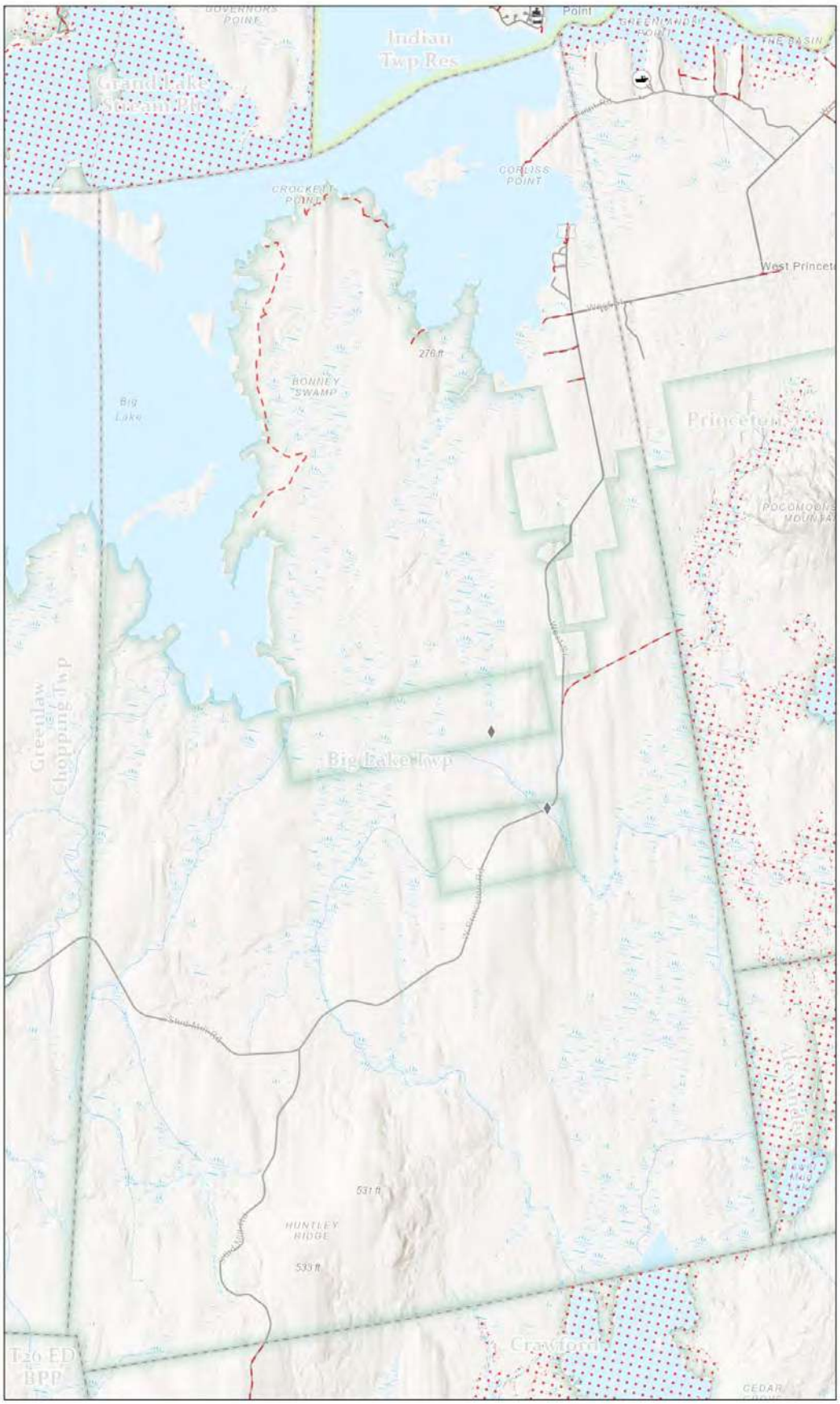


Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

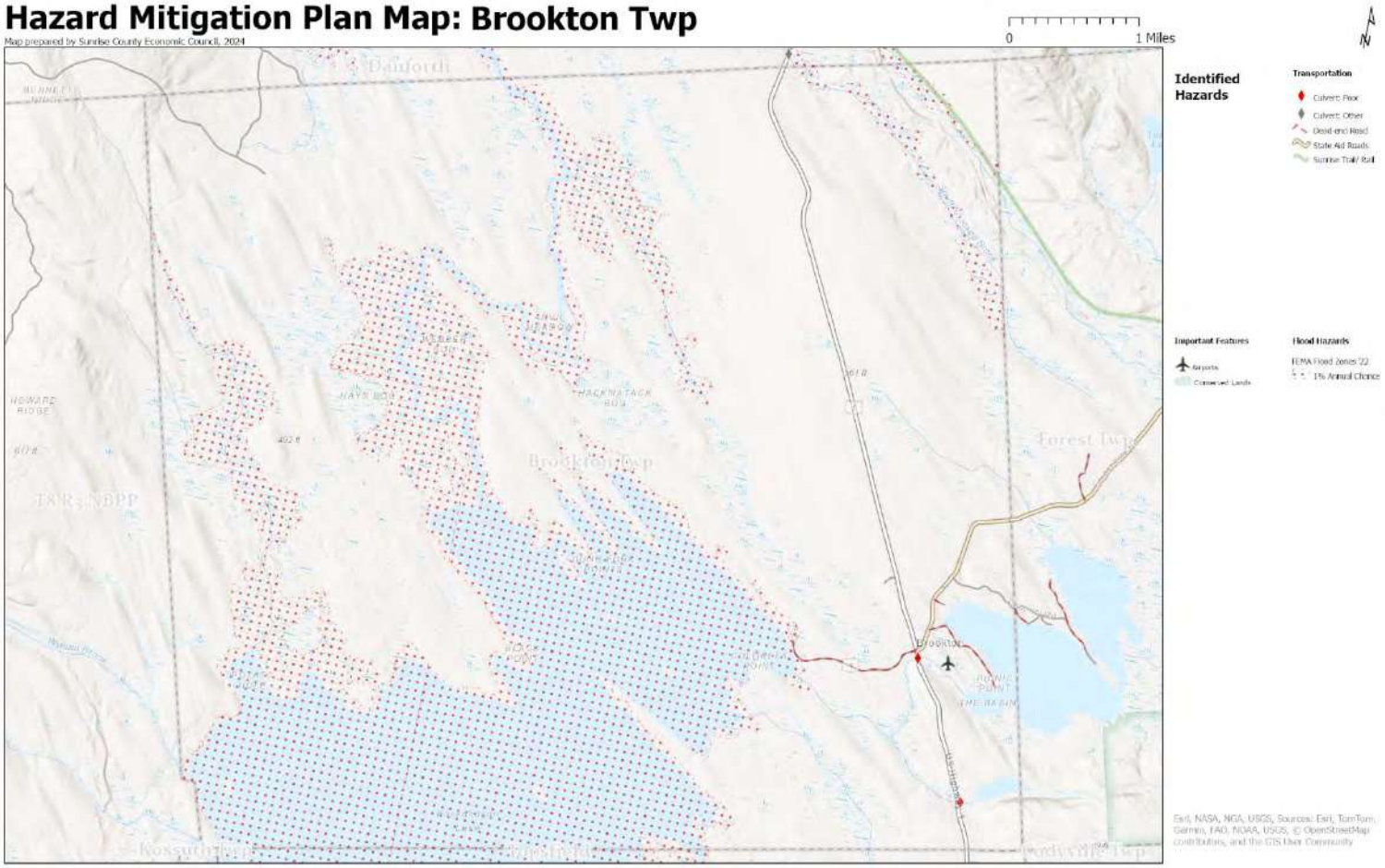
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Schools
- Boat Launches
- Conserved Lands
- Tribal Areas

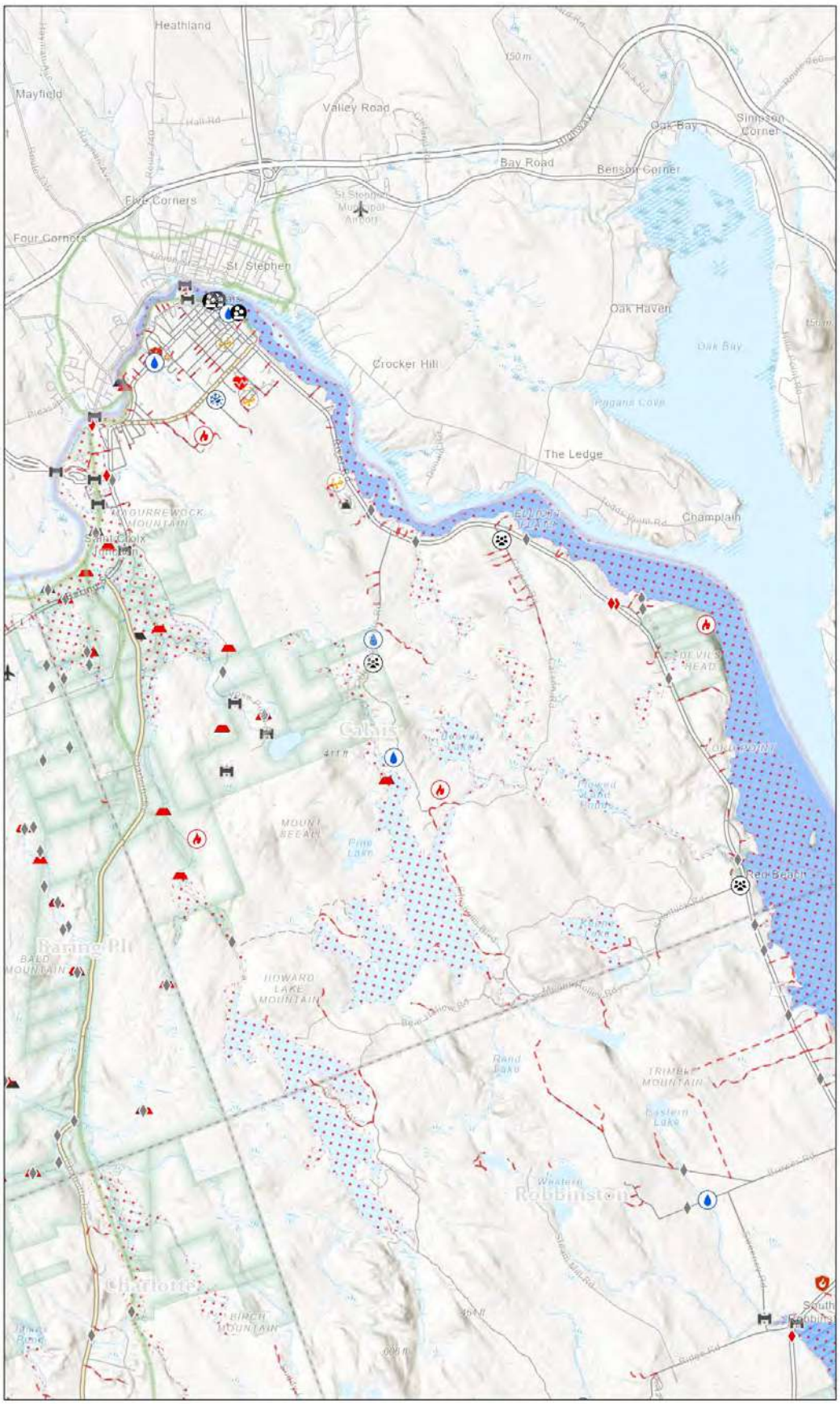
Hazard Mitigation Plan Map: Brookton Twp

Map prepared by Sunrise County Economic Council, 2024



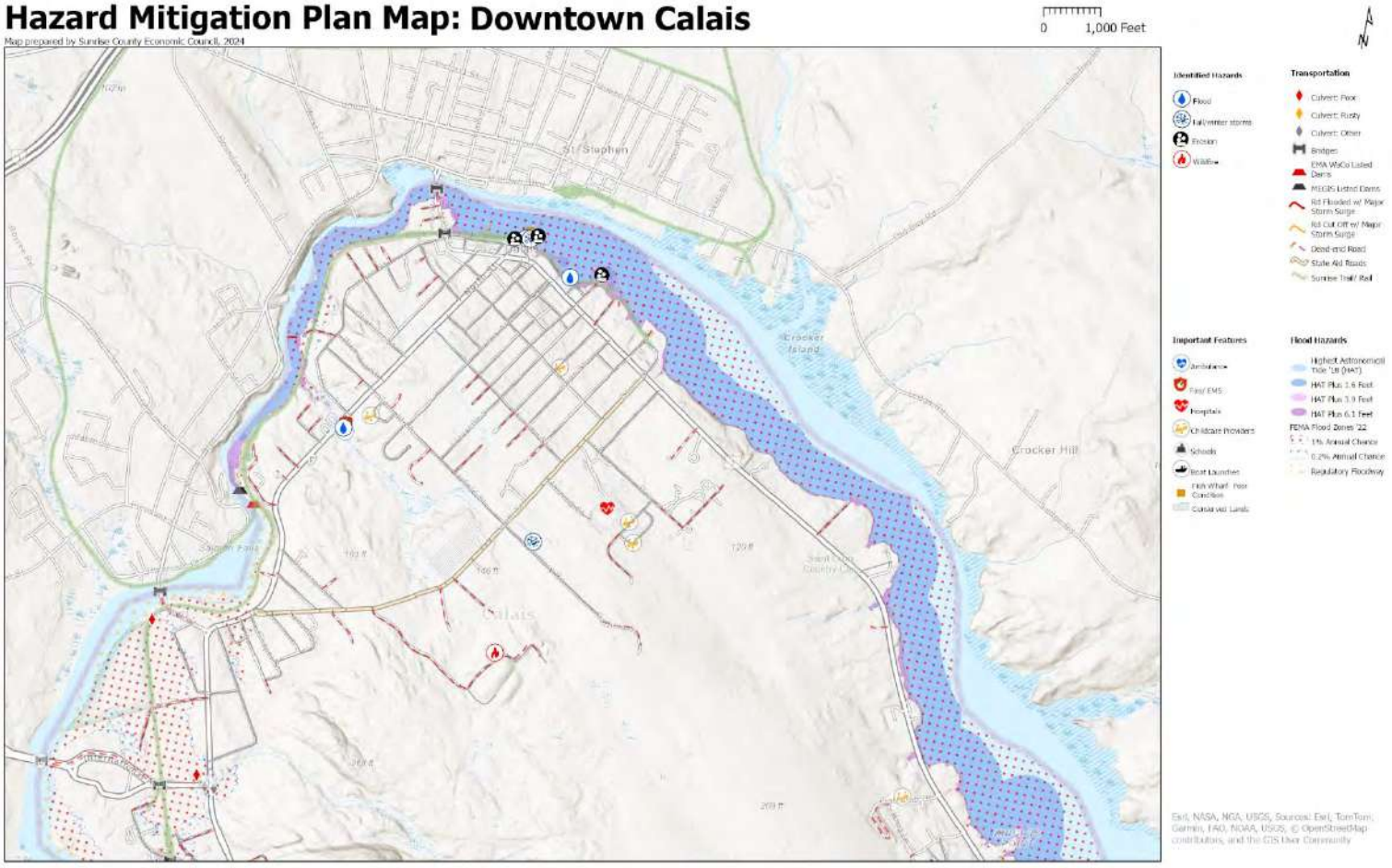
Hazard Mitigation Plan Map: Calais

Map prepared by Sunrise County Economic Council, 2024



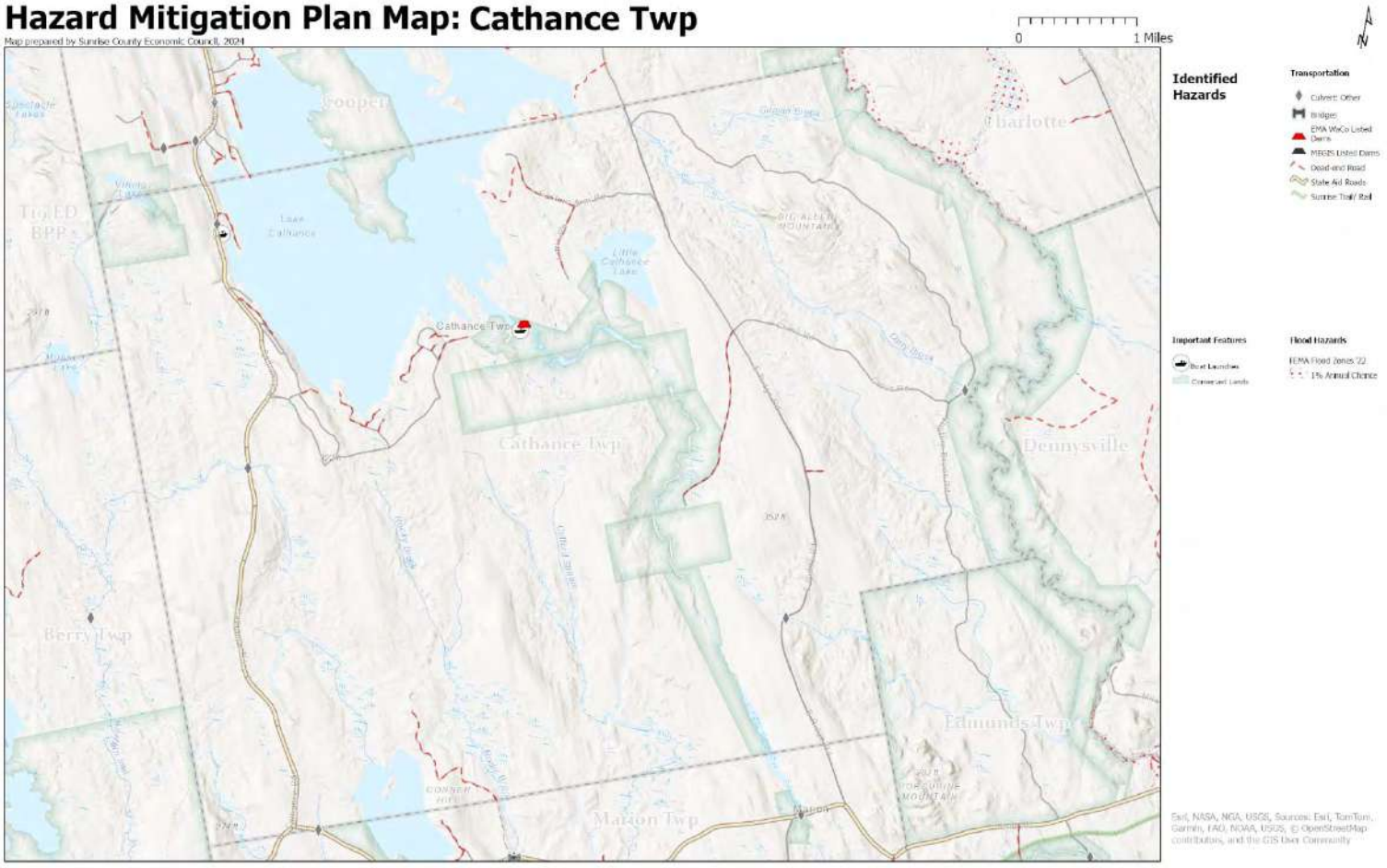
Hazard Mitigation Plan Map: Downtown Calais

Map prepared by Sunrise County Economic Council, 2024



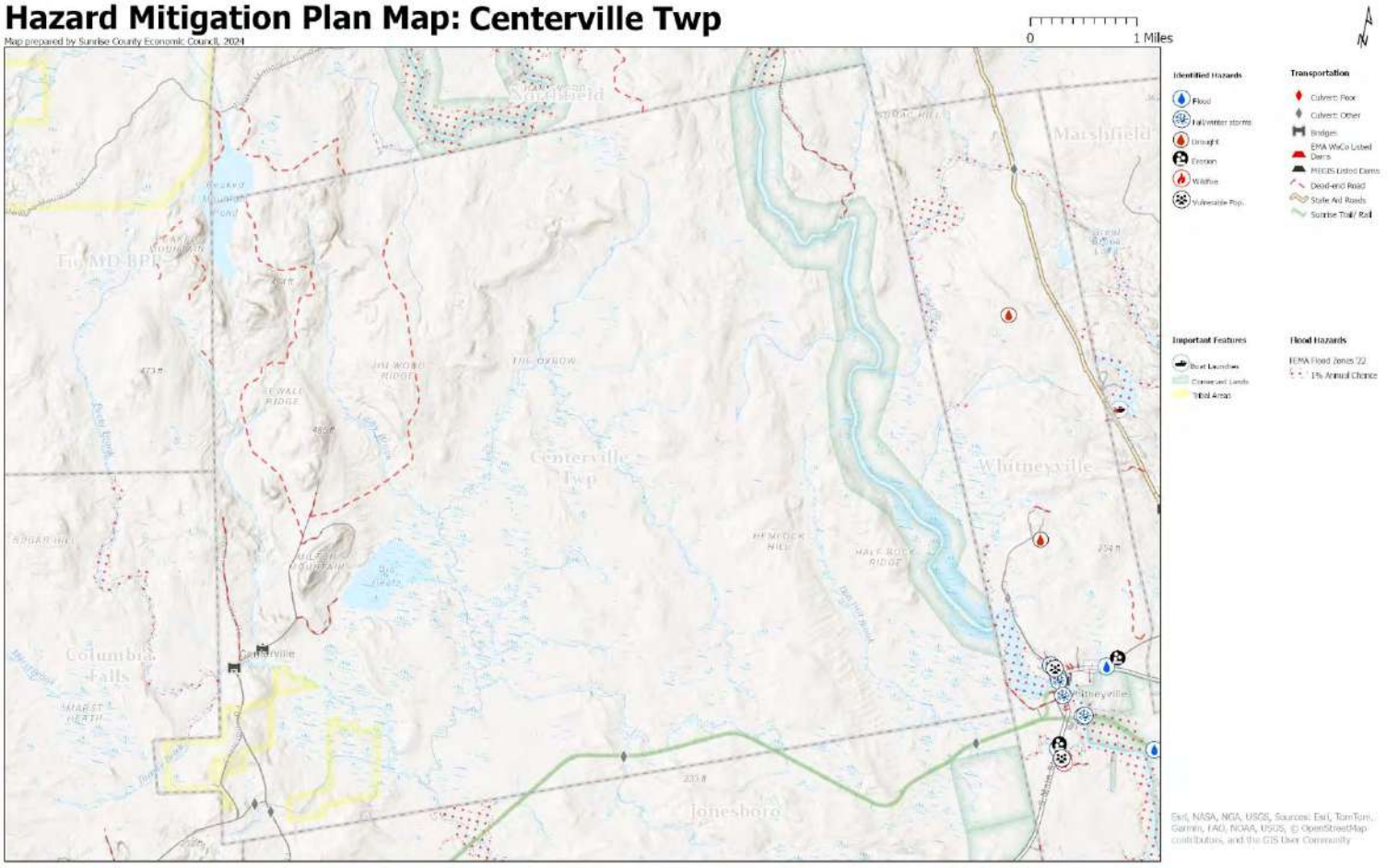
Hazard Mitigation Plan Map: Cathance Twp

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Centerville Twp

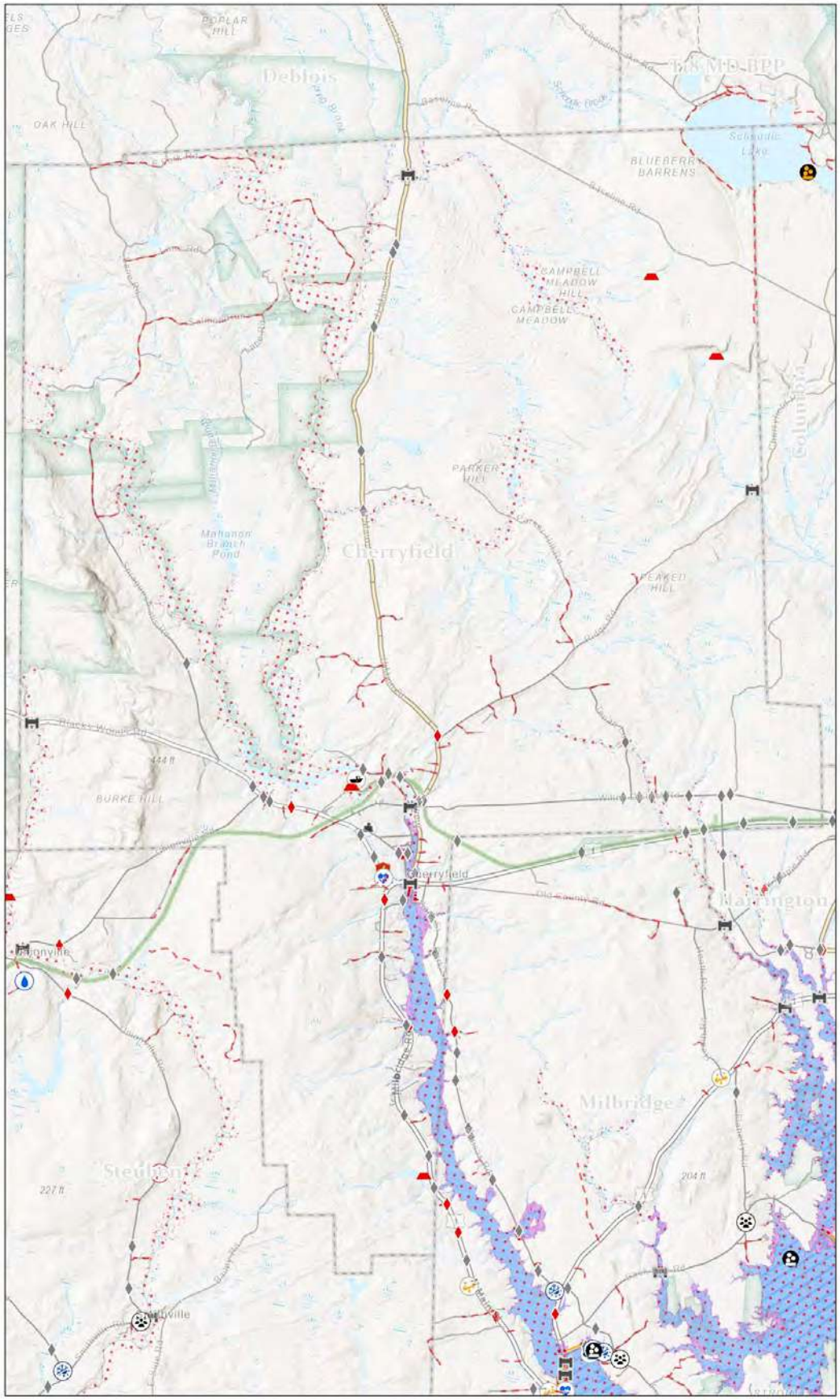
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Cherryfield

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

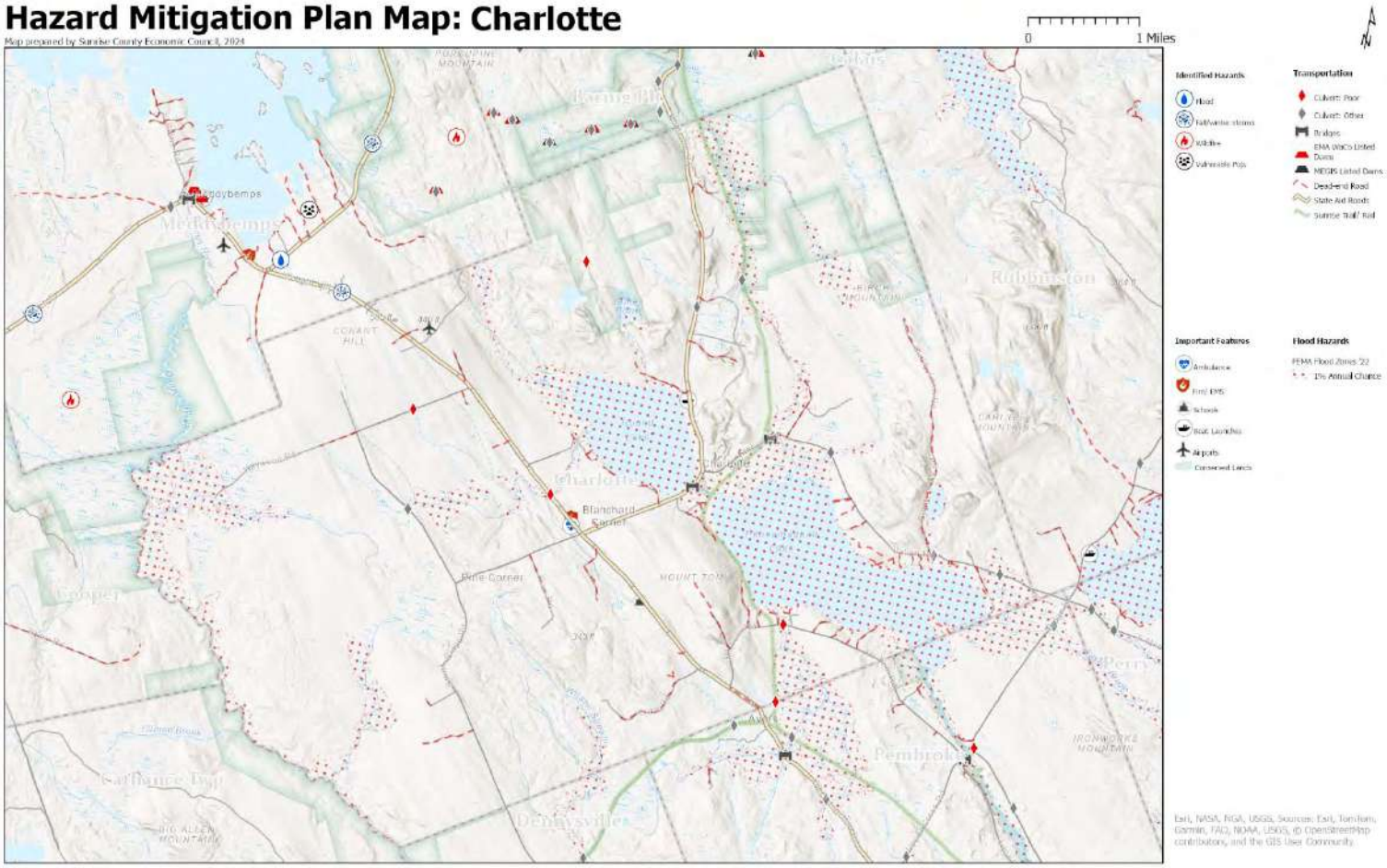
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- **Fishing Critical Infrastructure**
- Airports
- Clam Mudflats
- Conserved Lands

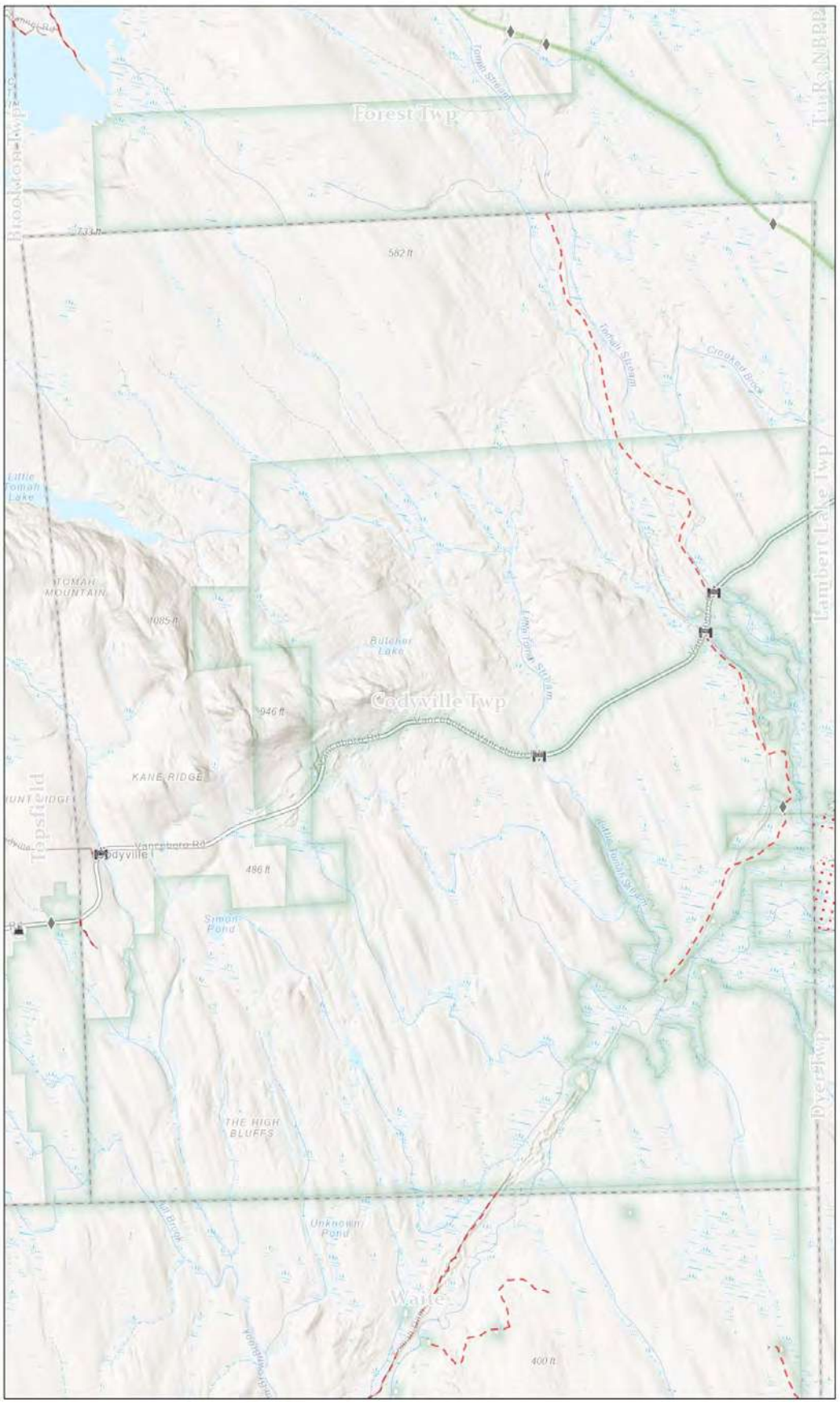
Hazard Mitigation Plan Map: Charlotte

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Codyville Twp

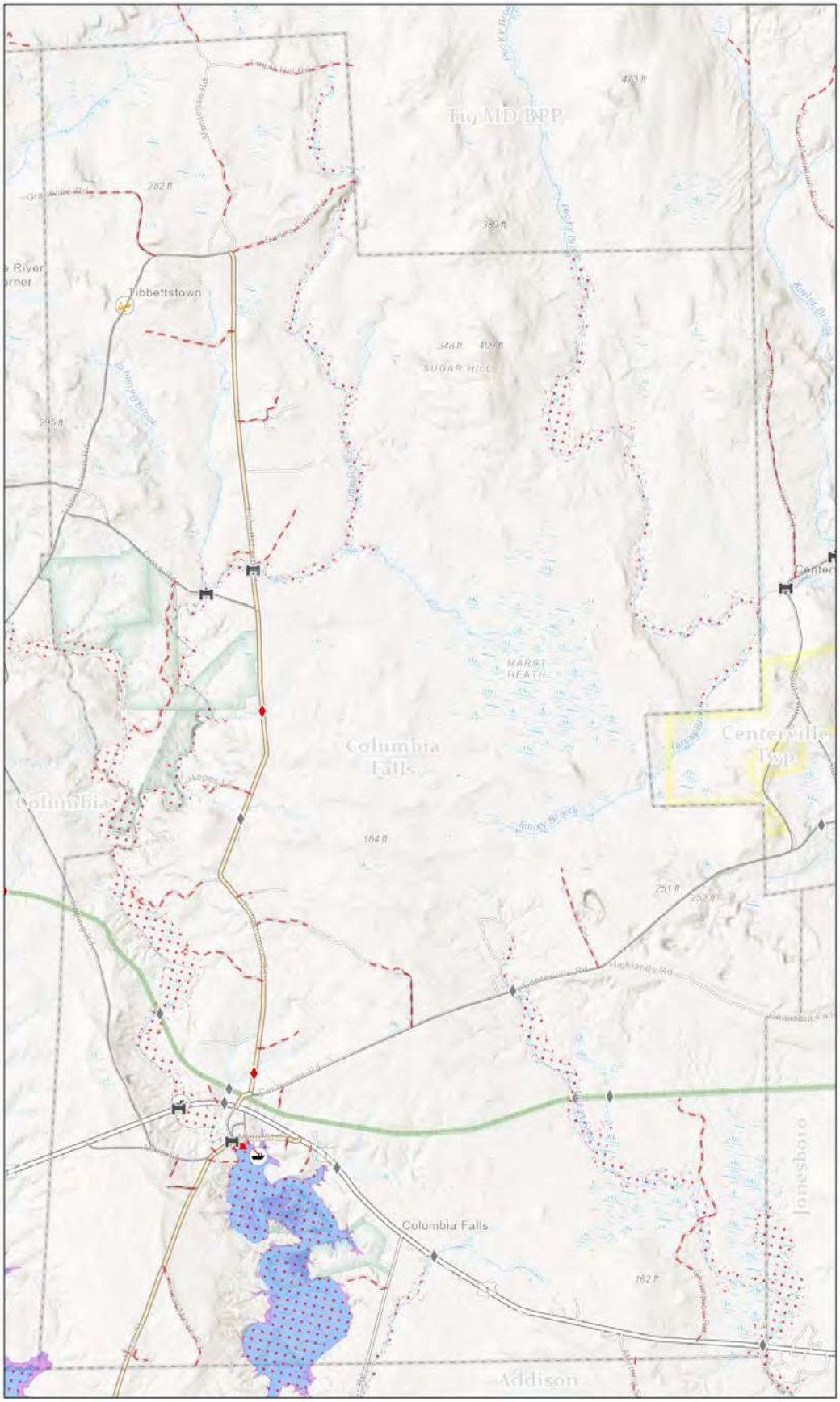
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Columbia Falls

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

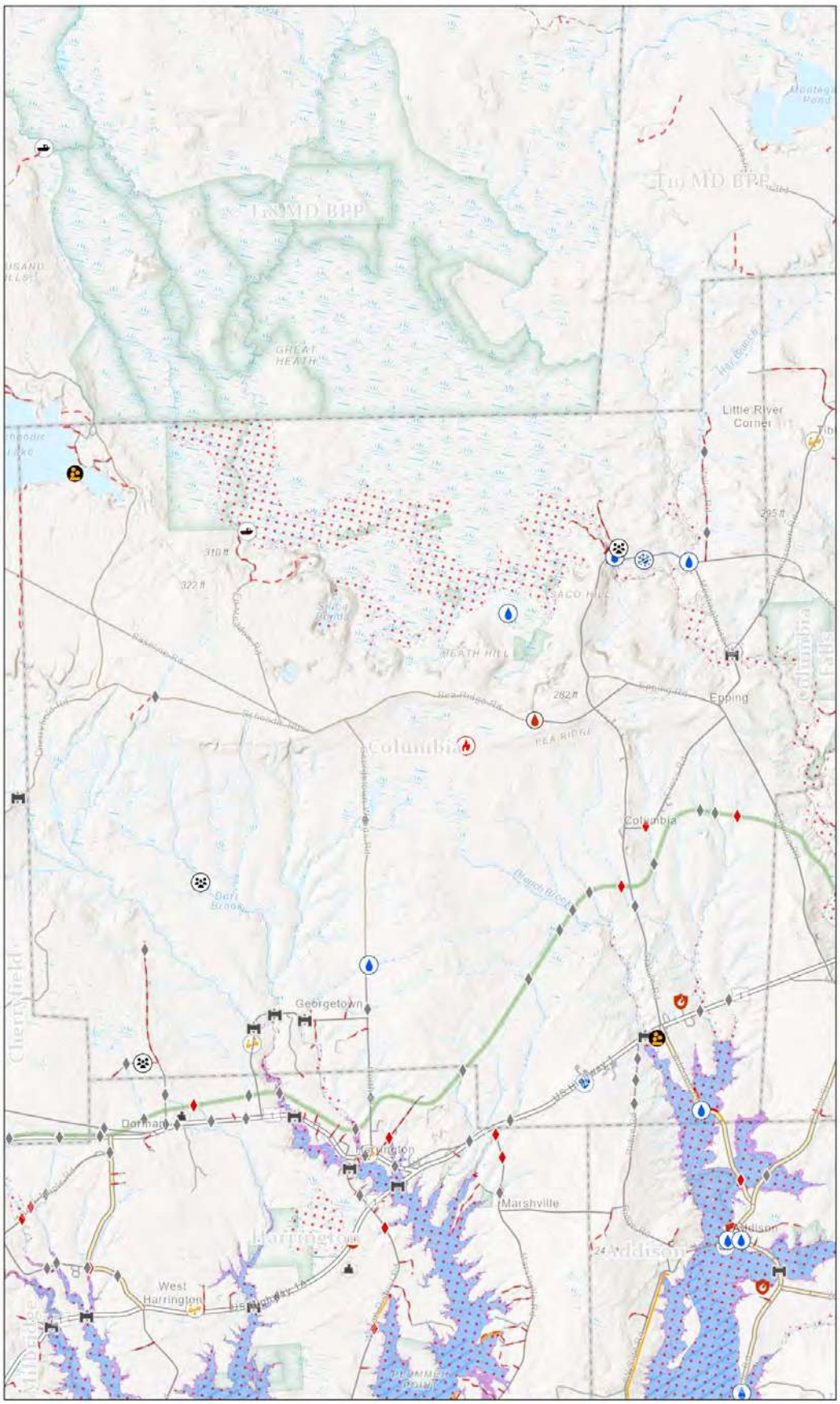
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Childcare Providers
- Boat Launches
- Conserved Lands
- Tribal Areas

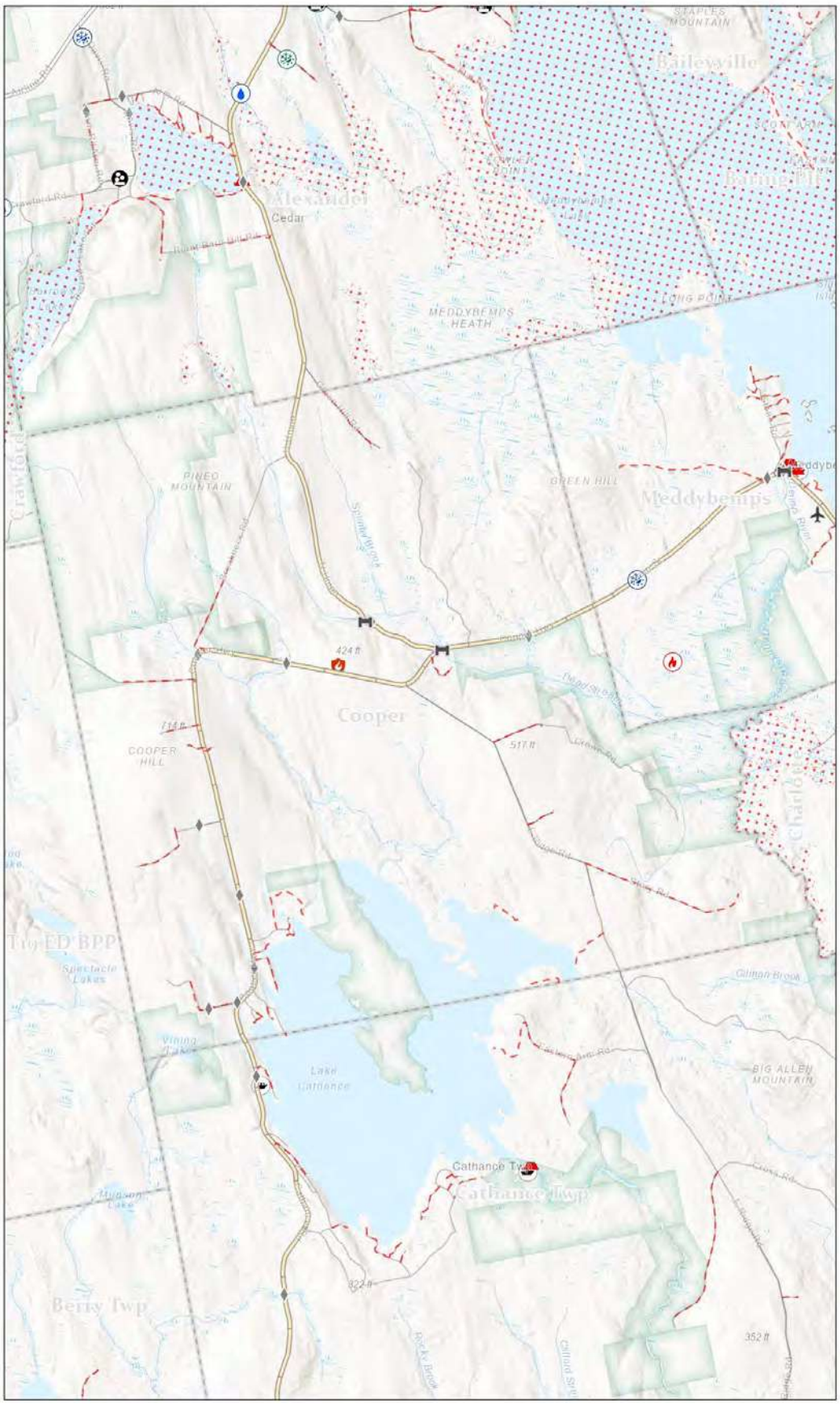
Hazard Mitigation Plan Map: Columbia

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Cooper

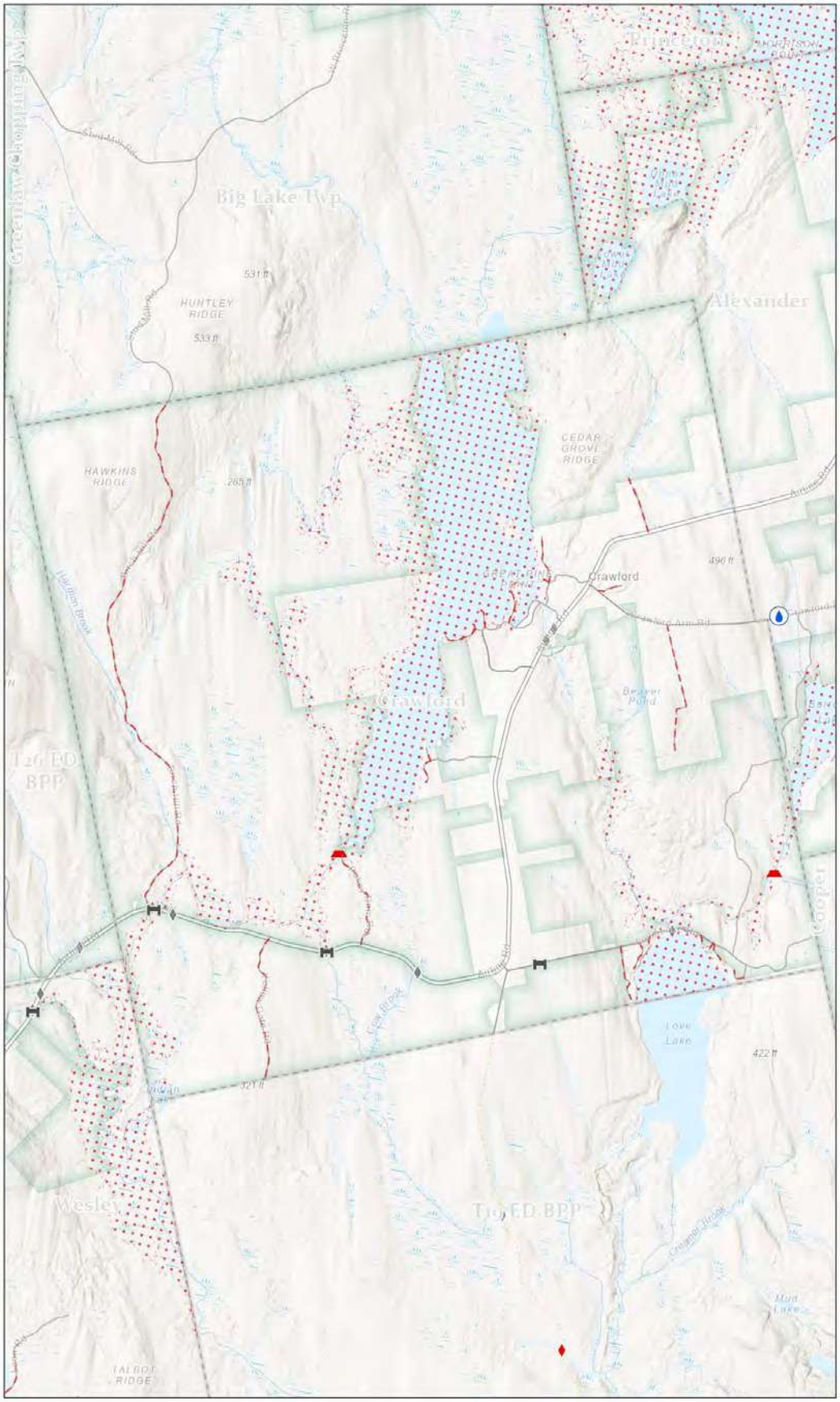
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Crawford

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

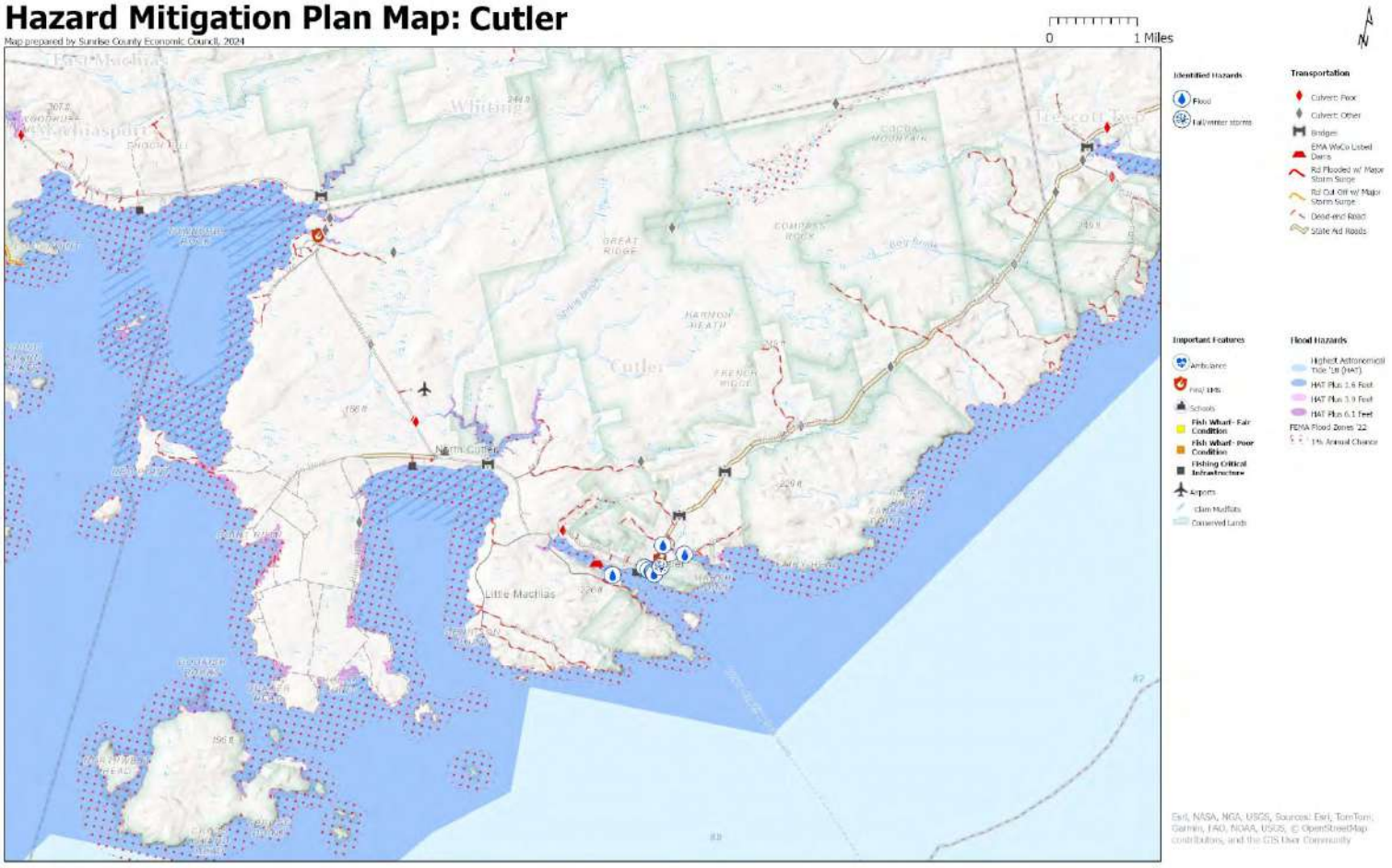
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Conserved Lands

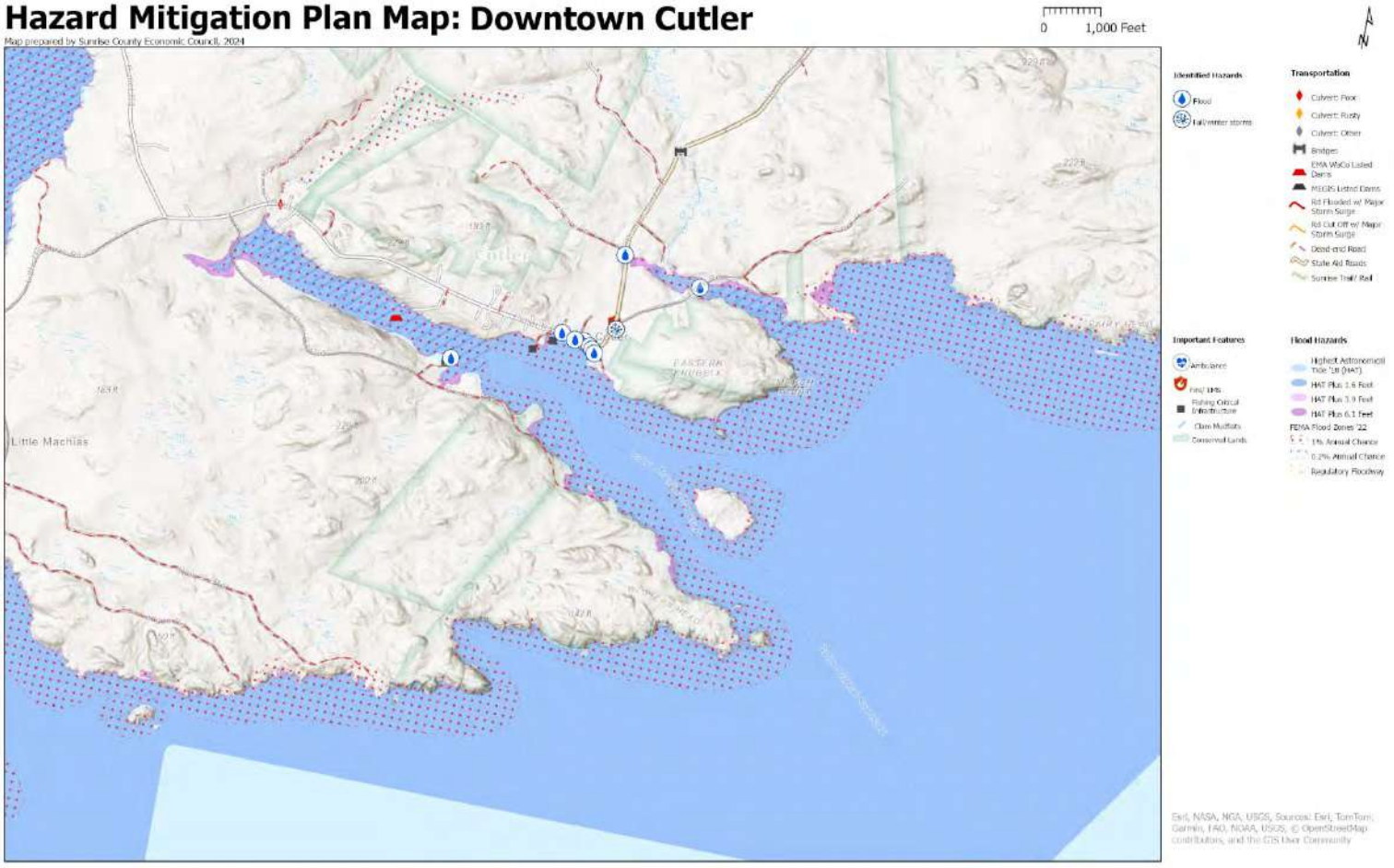
Hazard Mitigation Plan Map: Cutler

Map prepared by Sunrise County Economic Council, 2024



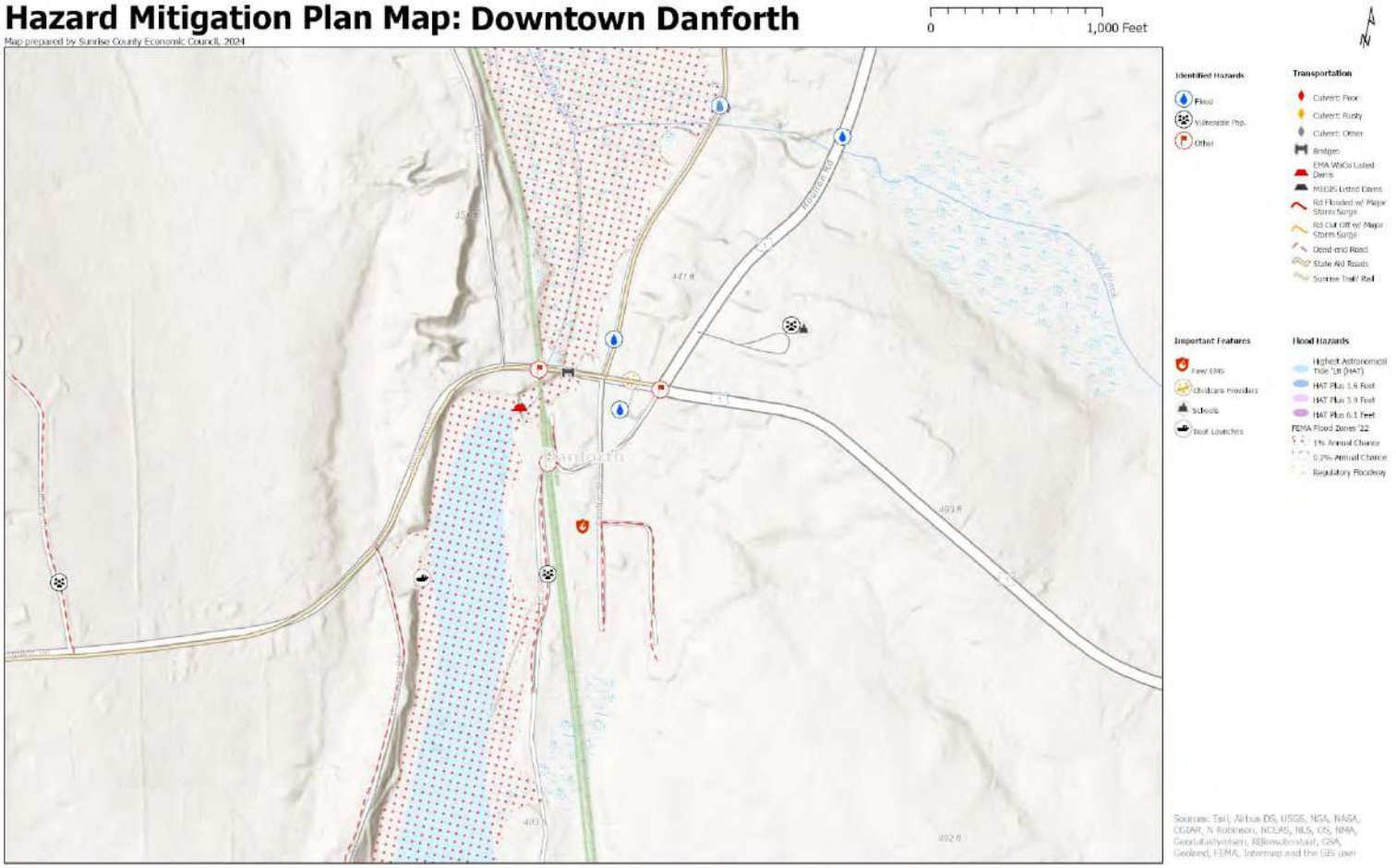
Hazard Mitigation Plan Map: Downtown Cutler

Map prepared by Sunrise County Economic Council, 2024



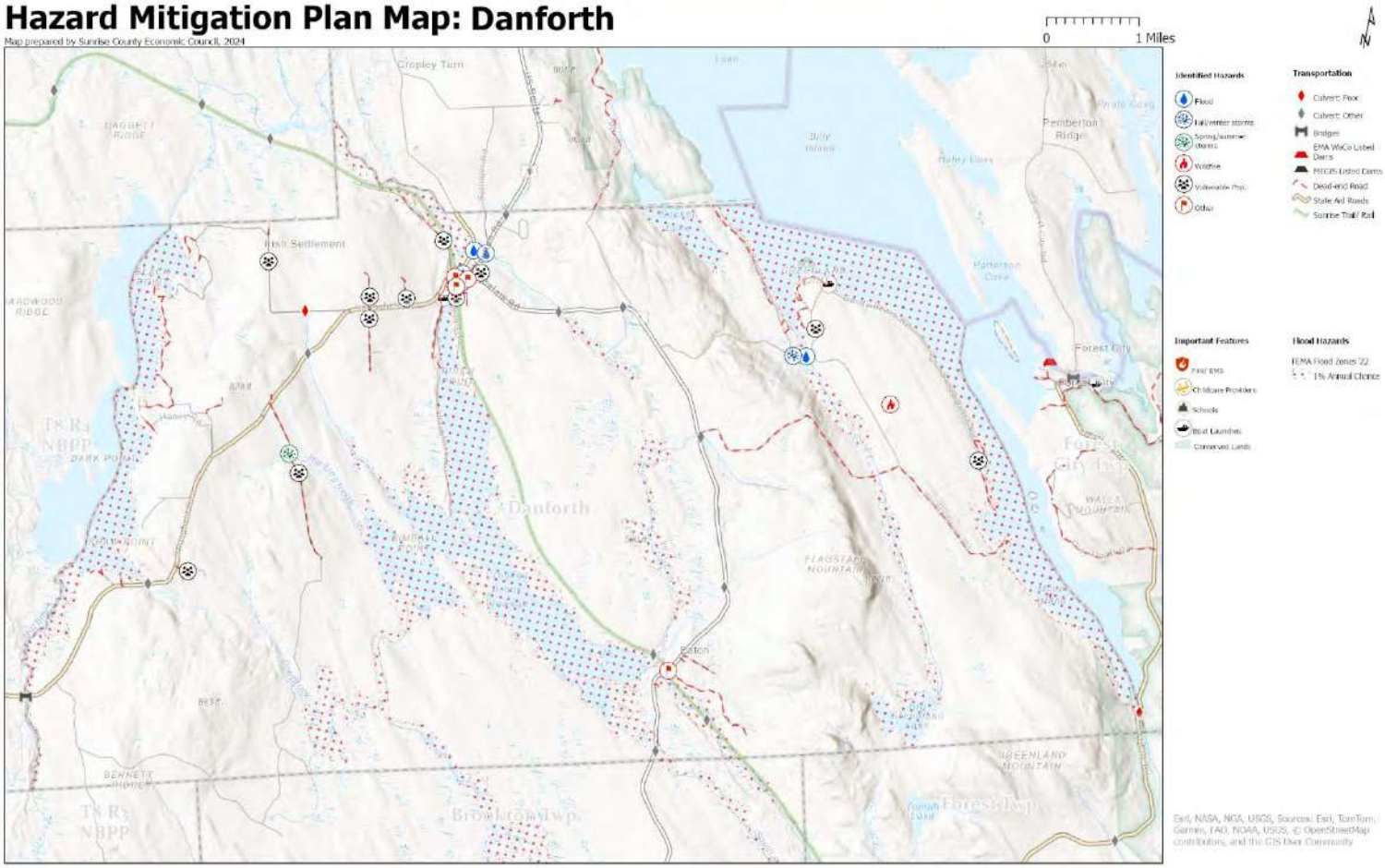
Hazard Mitigation Plan Map: Downtown Danforth

Map prepared by Sunrise County Economic Council, 2024



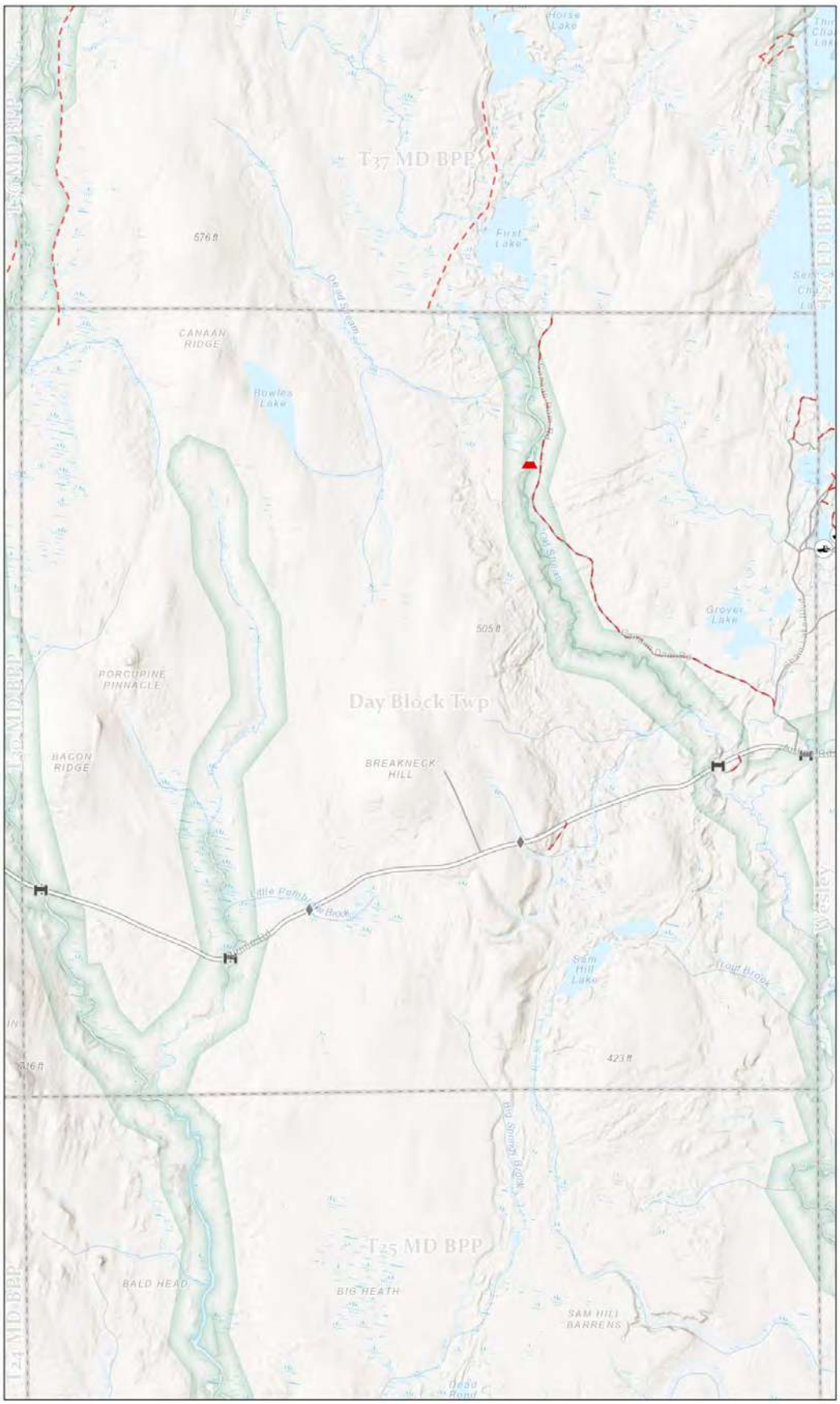
Hazard Mitigation Plan Map: Danforth

Map prepared by Sunrise County Economic Council, 2024



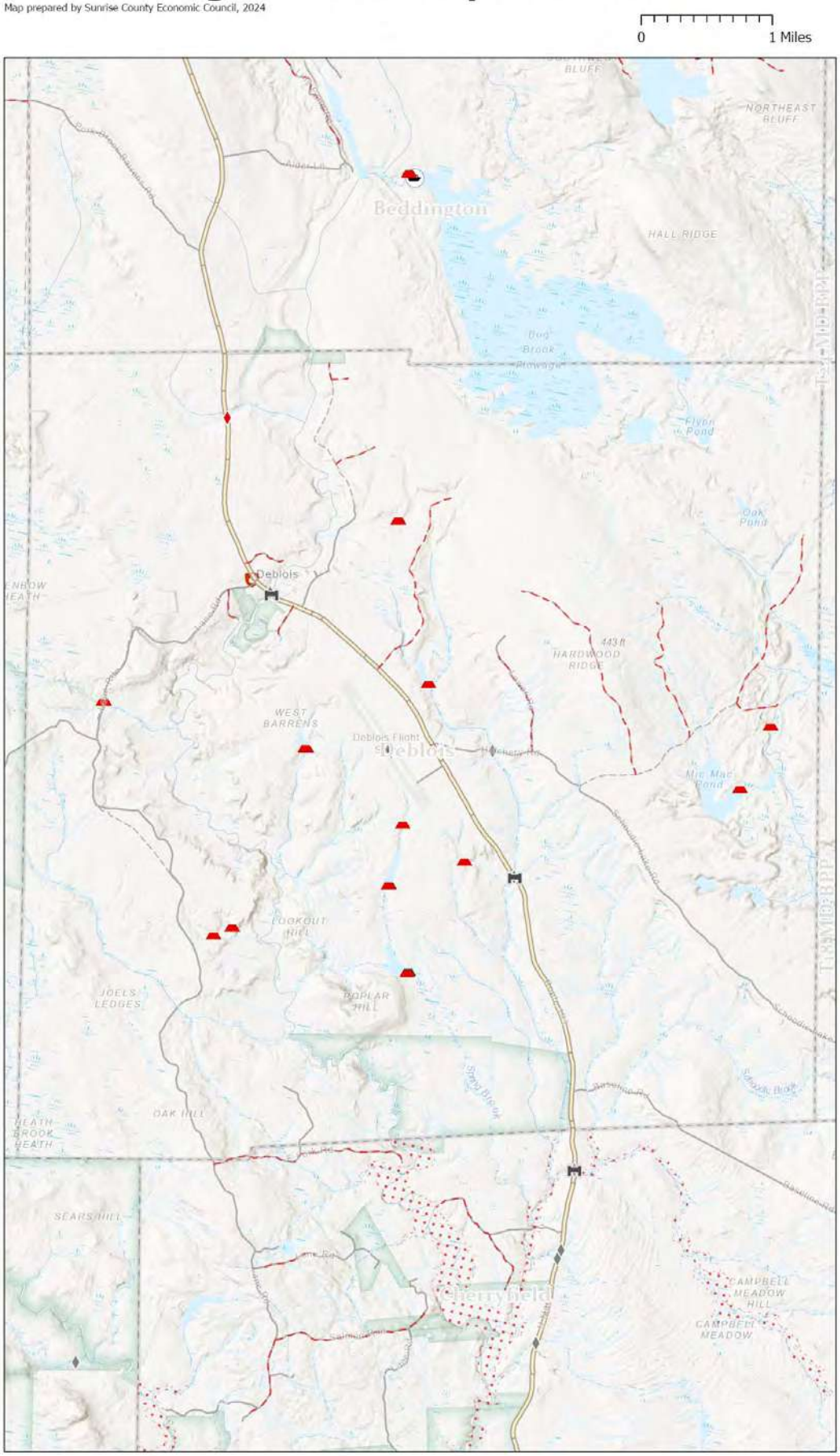
Hazard Mitigation Plan Map: Day Block Twp

Map prepared by Sunrise County Economic Council, 2024



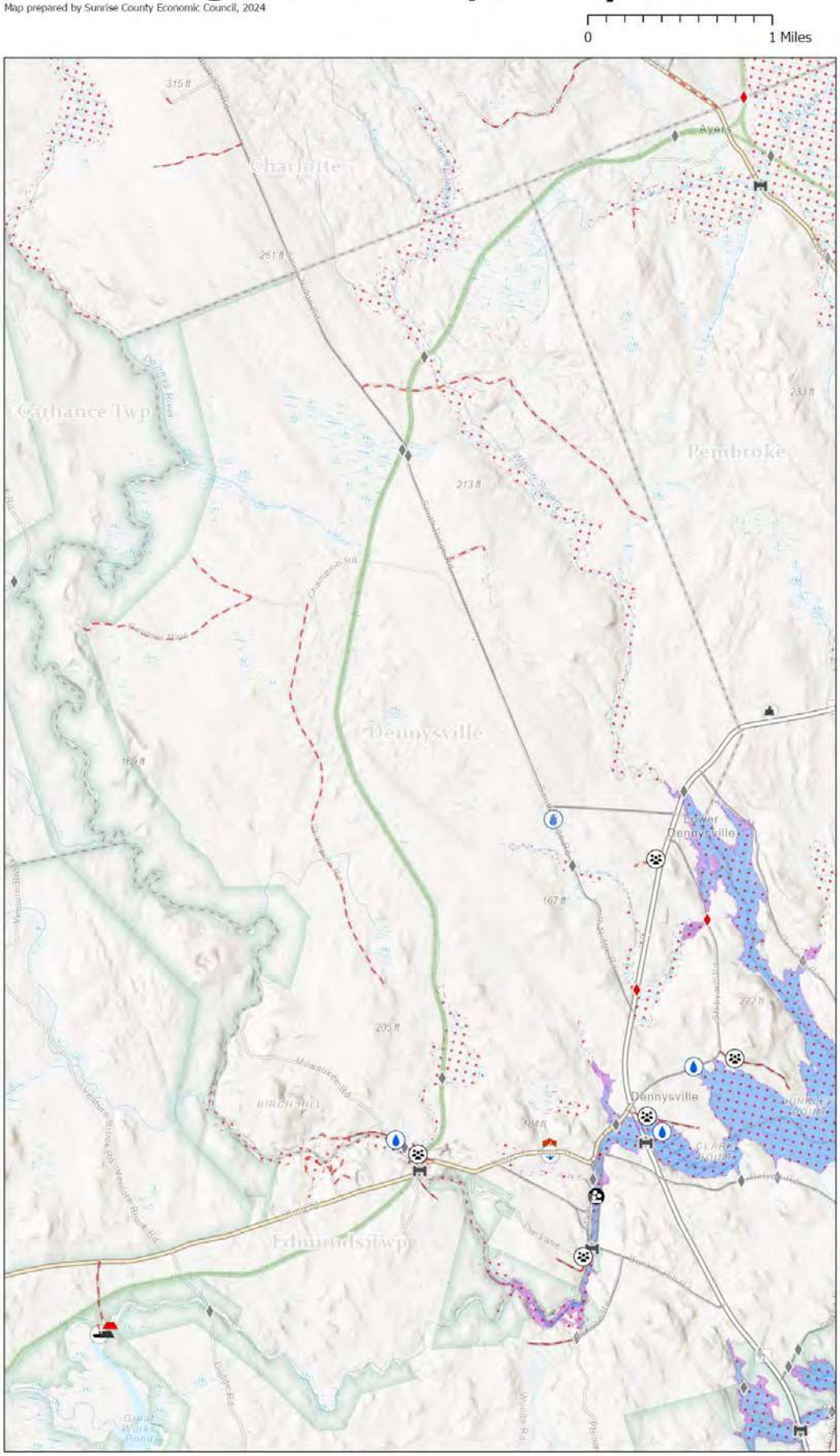
Hazard Mitigation Plan Map: Deblois

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Dennysville

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Devereaux Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

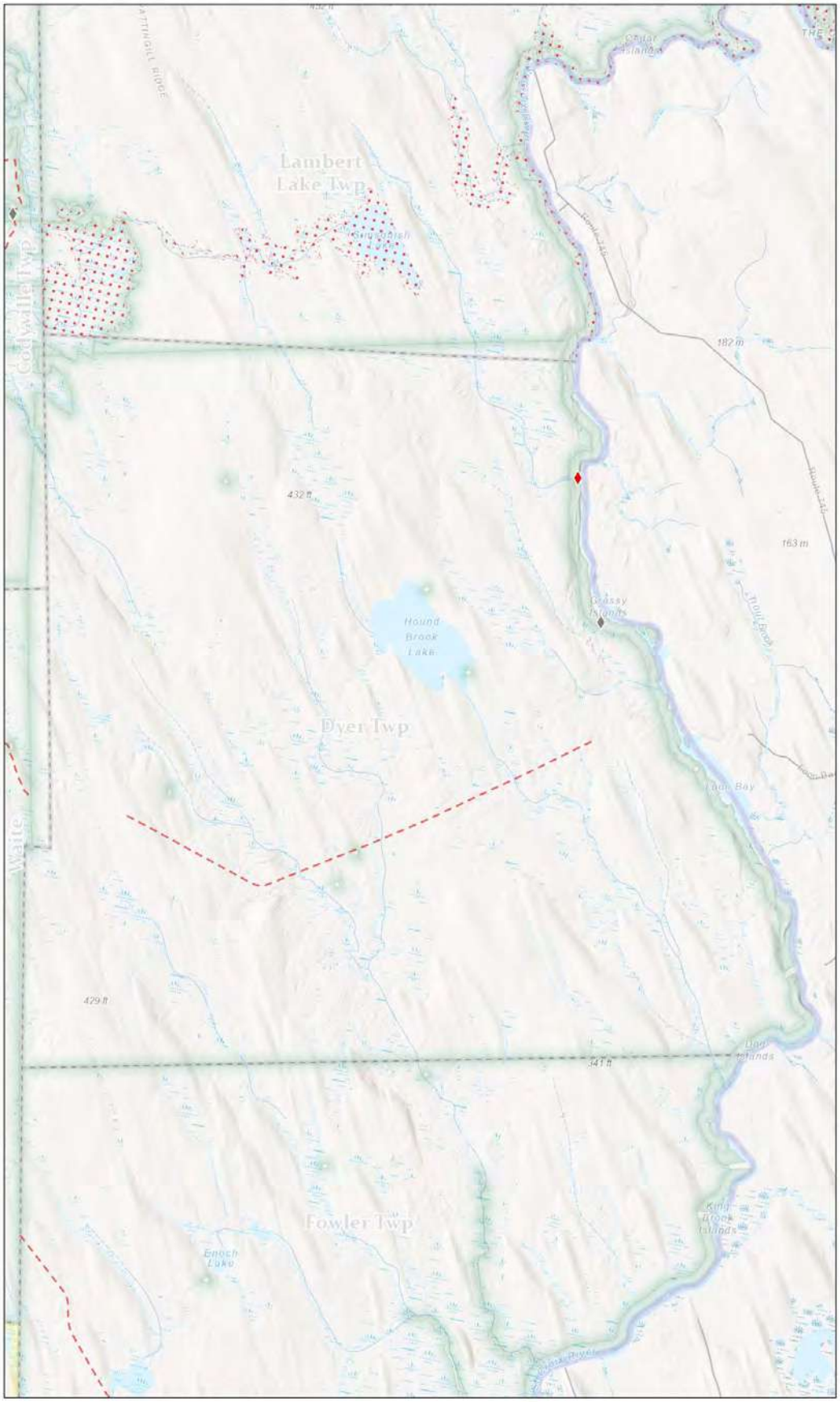
Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Dyer Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

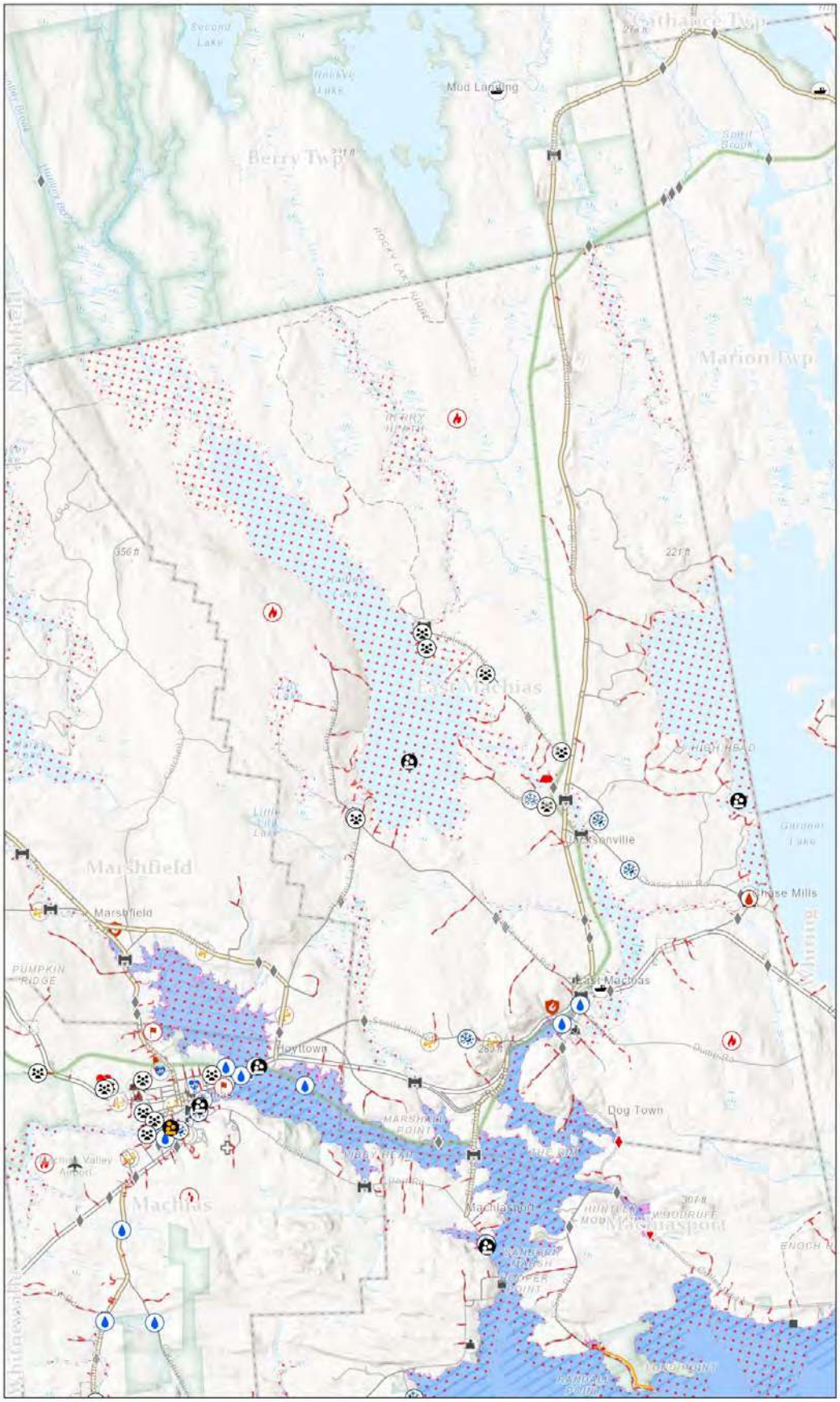
Important Features

- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: East Machias

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

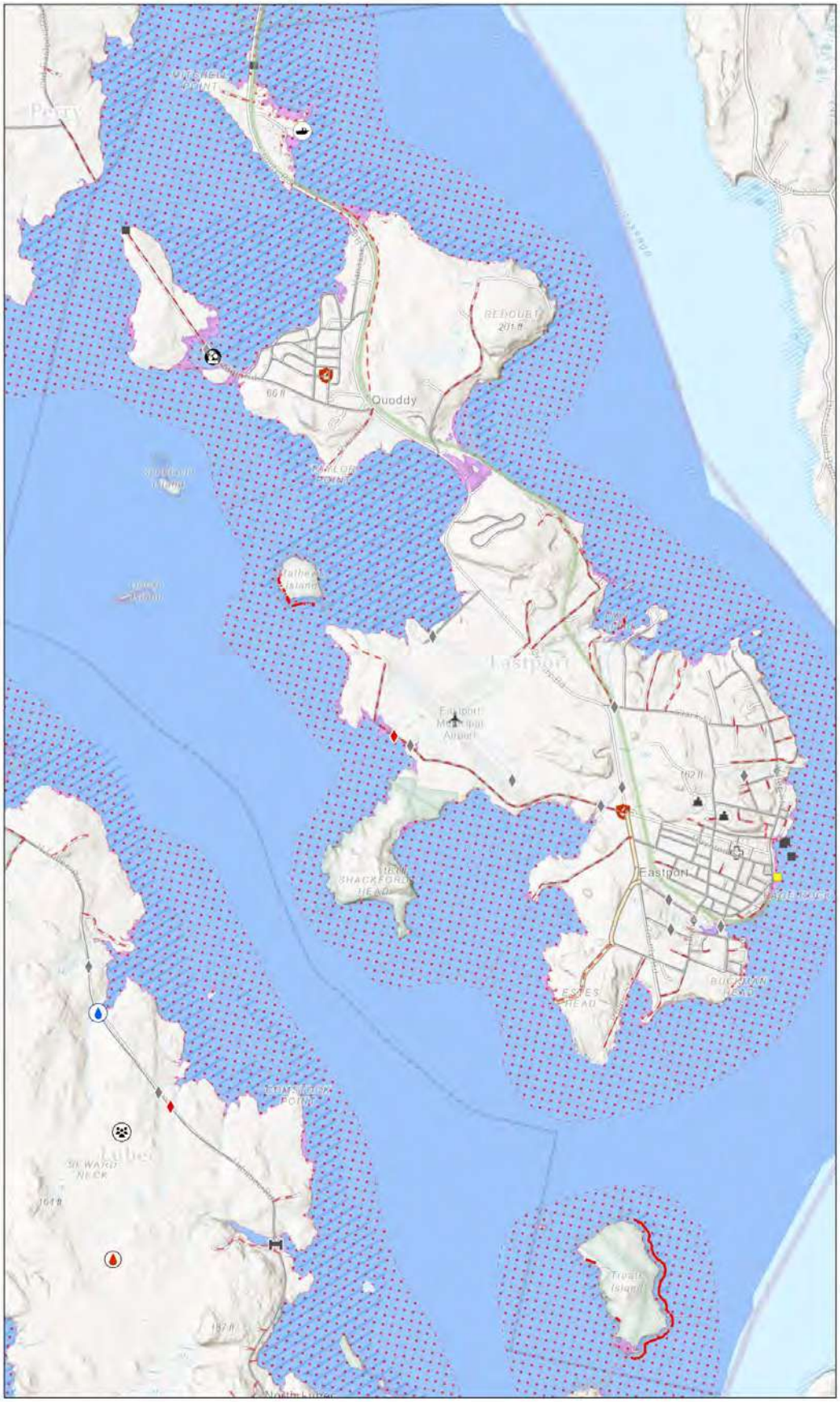
Important Features

- Ambulance
- Fire/ EMS
- Hospitals
- Nursing/Asst Living
- Childcare Providers
- Schools
- Correctional Facilities
- Boat Launches
- Fishing Critical Infrastructure
- Airports
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Eastport

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

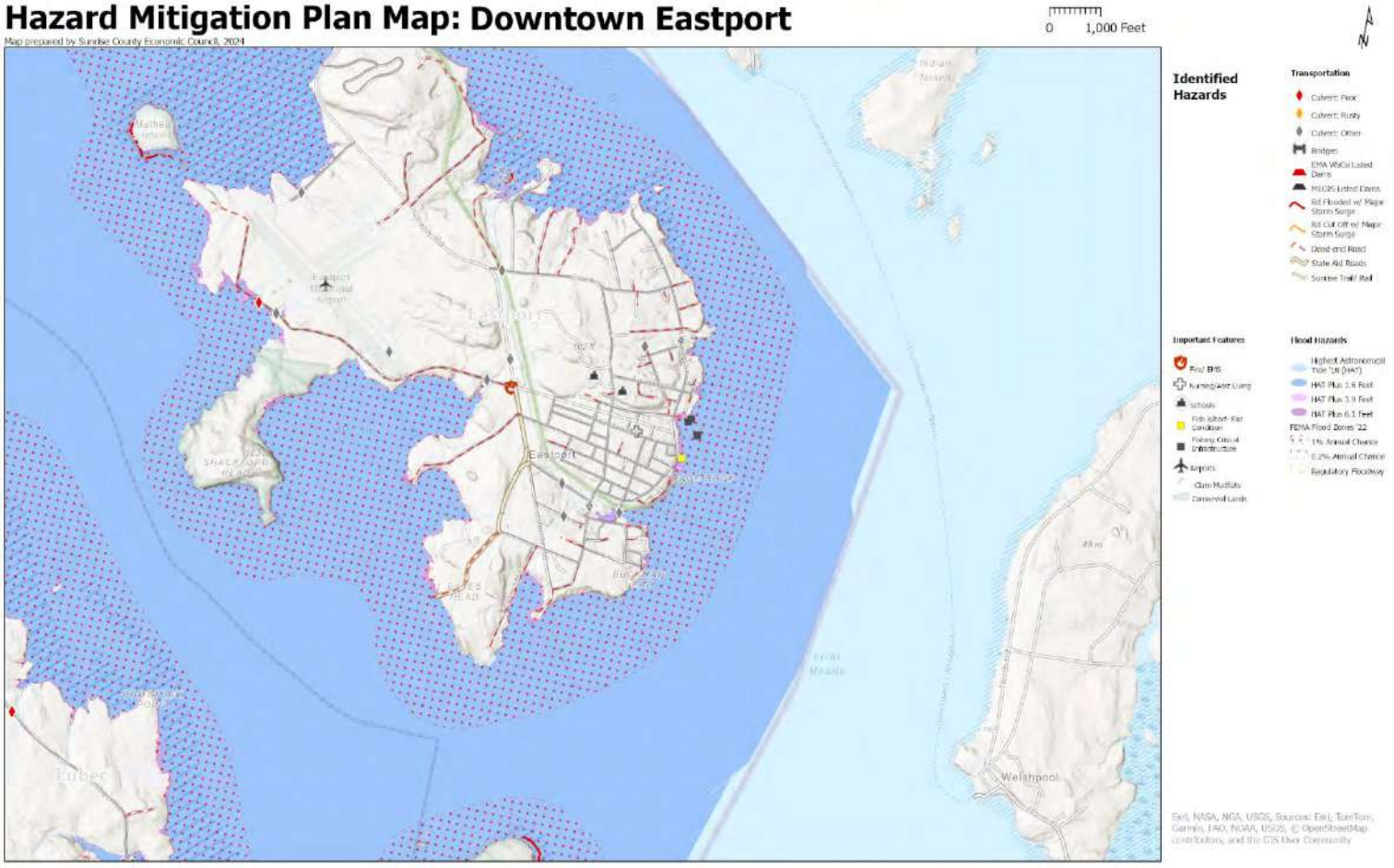
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Nursing/Asst Living
- Schools
- Boat Launches
- **Fish Wharf- Fair Condition**
- **Fishing Critical Infrastructure**
- Airports
- Clam Mudflats
- Conserved Lands
- Tribal Areas

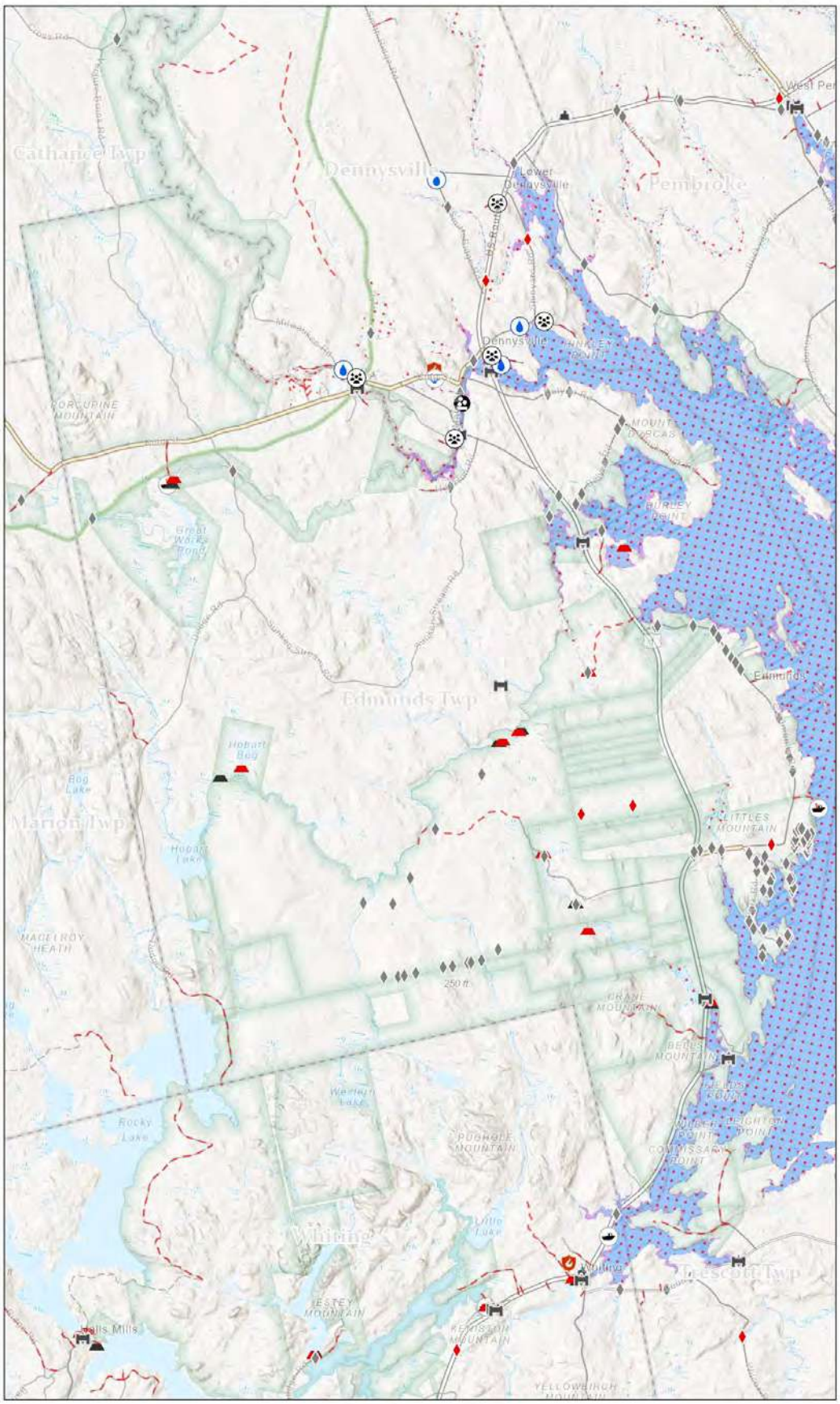
Hazard Mitigation Plan Map: Downtown Eastport

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Edmunds Twp

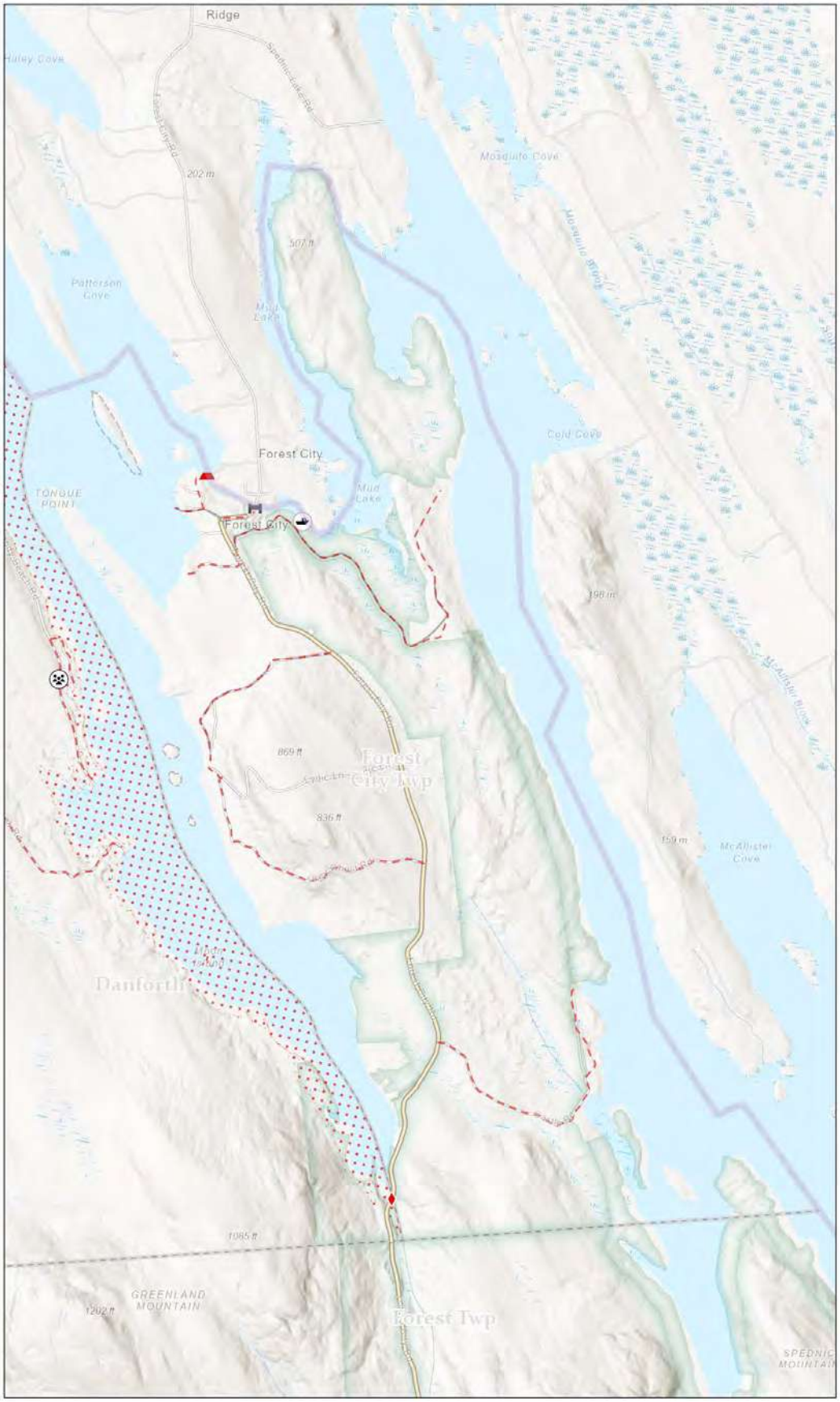
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Forest City Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

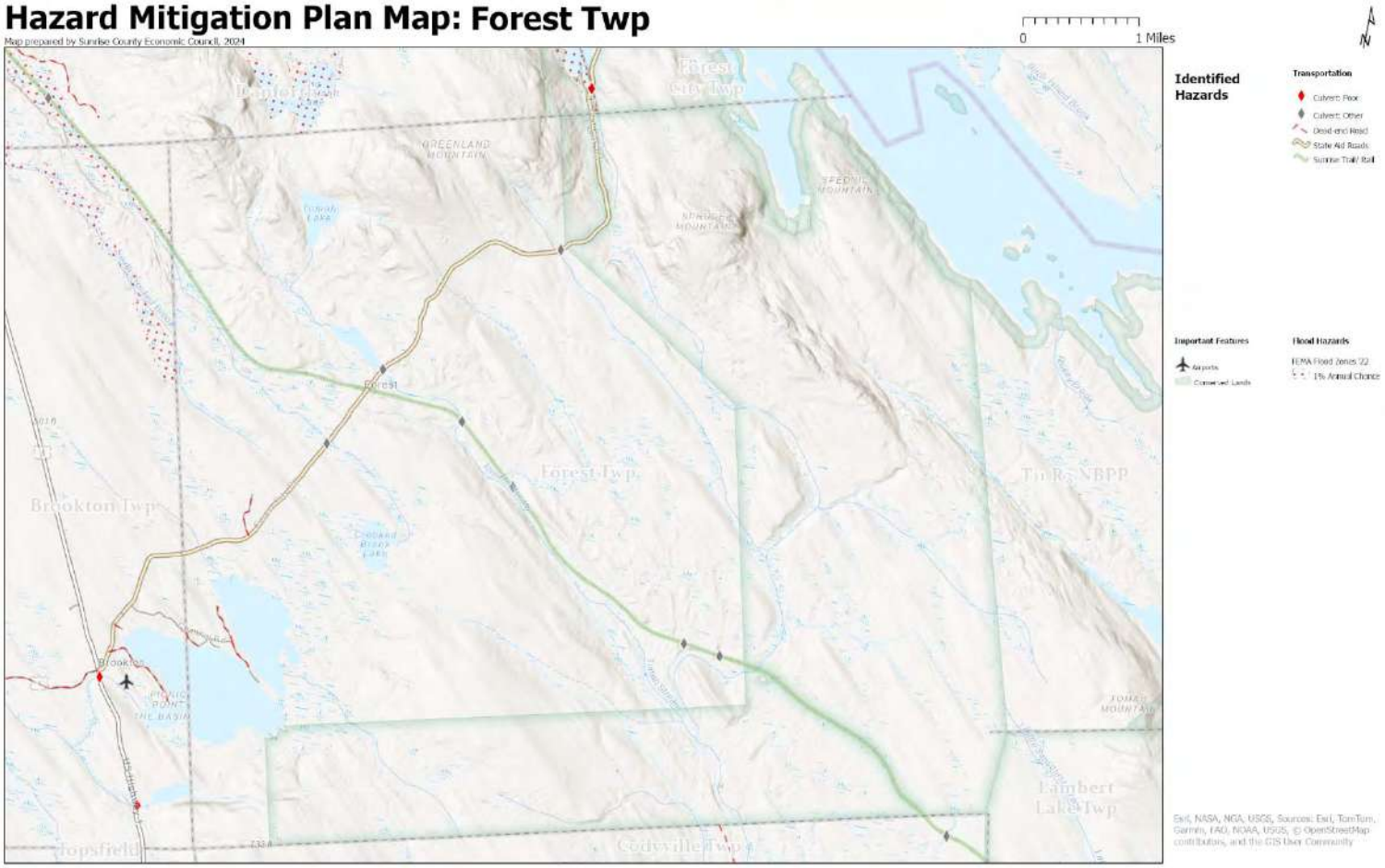
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Forest Twp

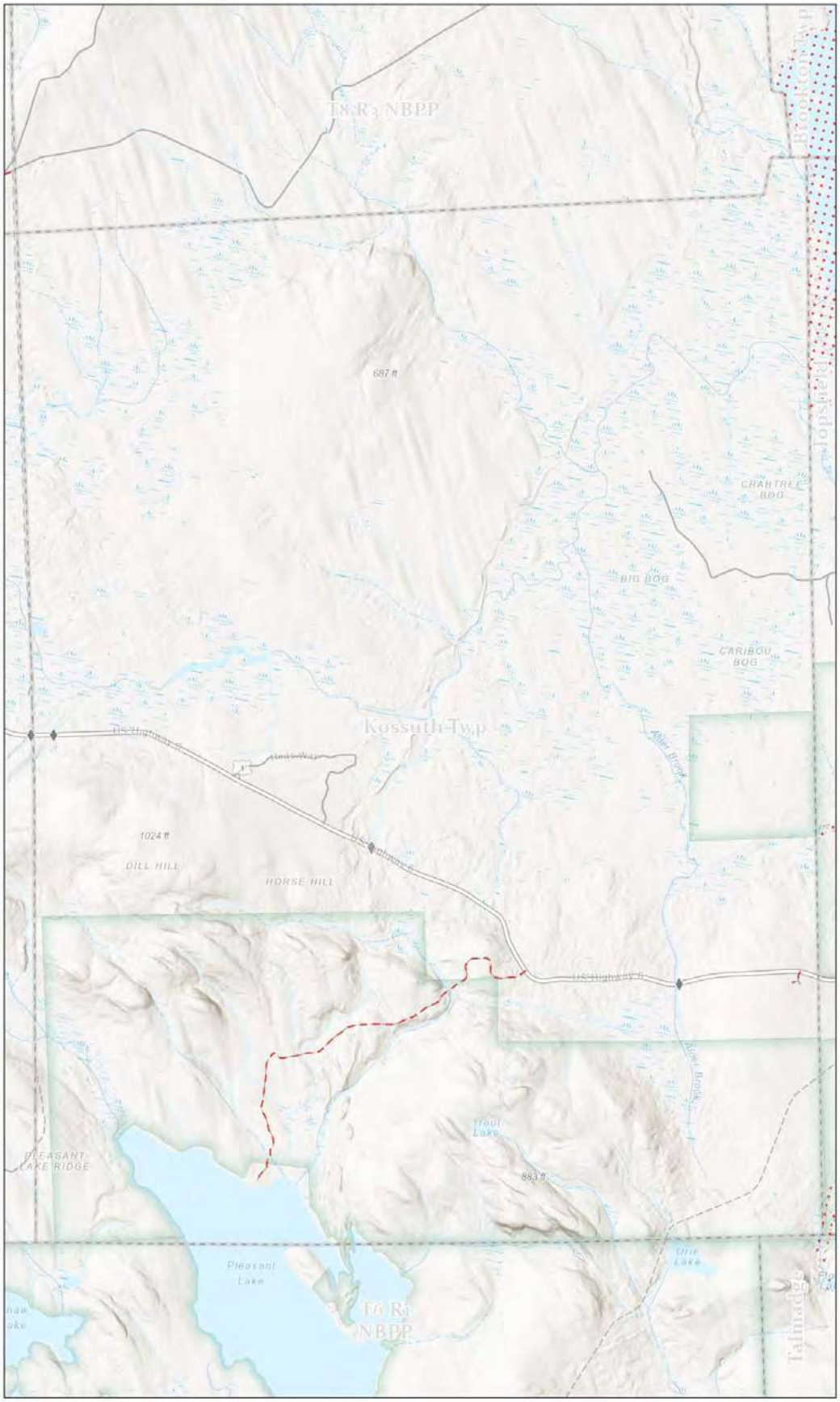
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Kossuth Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

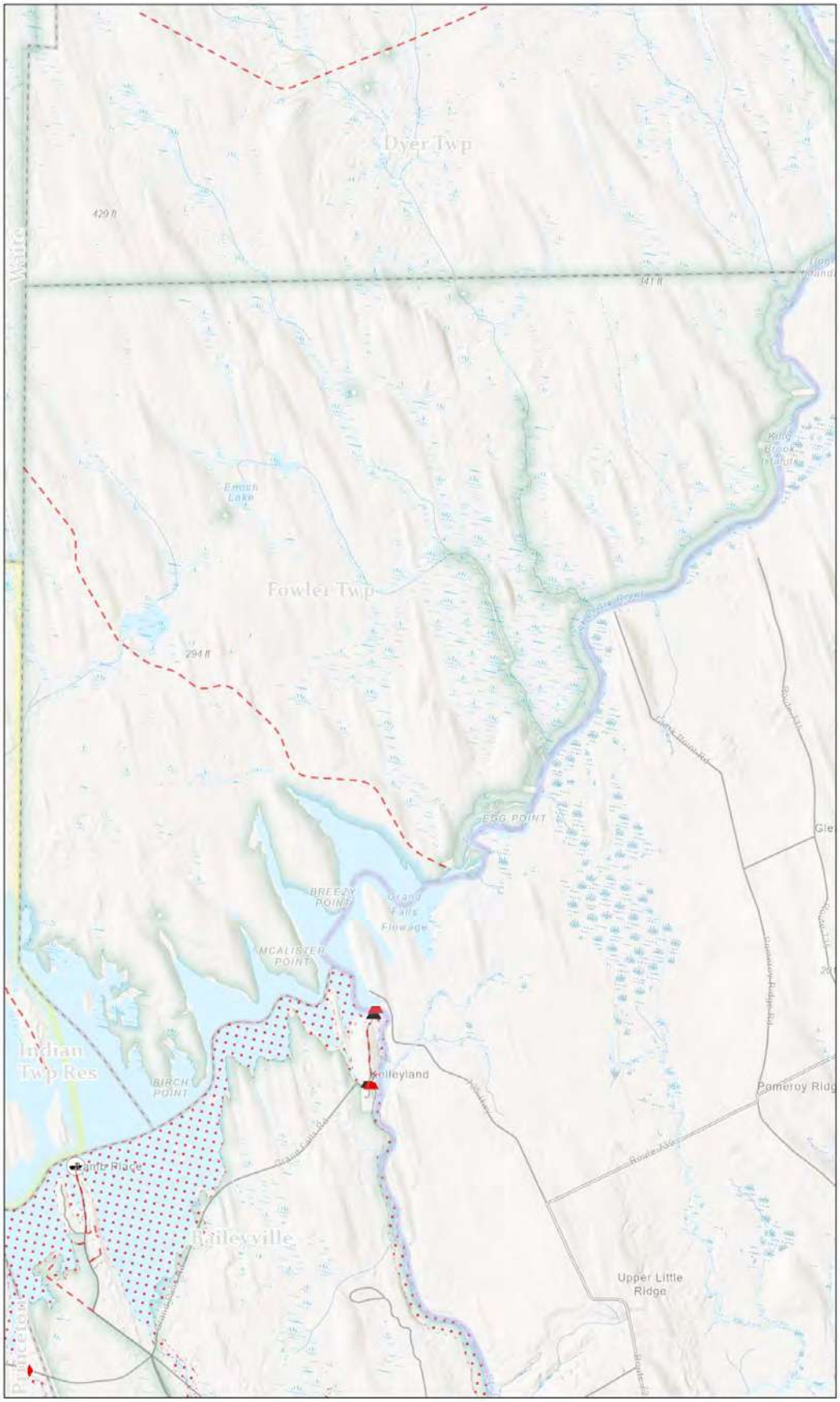
Important Features

- Conserved Lands

Hazard Mitigation Plan Map: Fowler Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

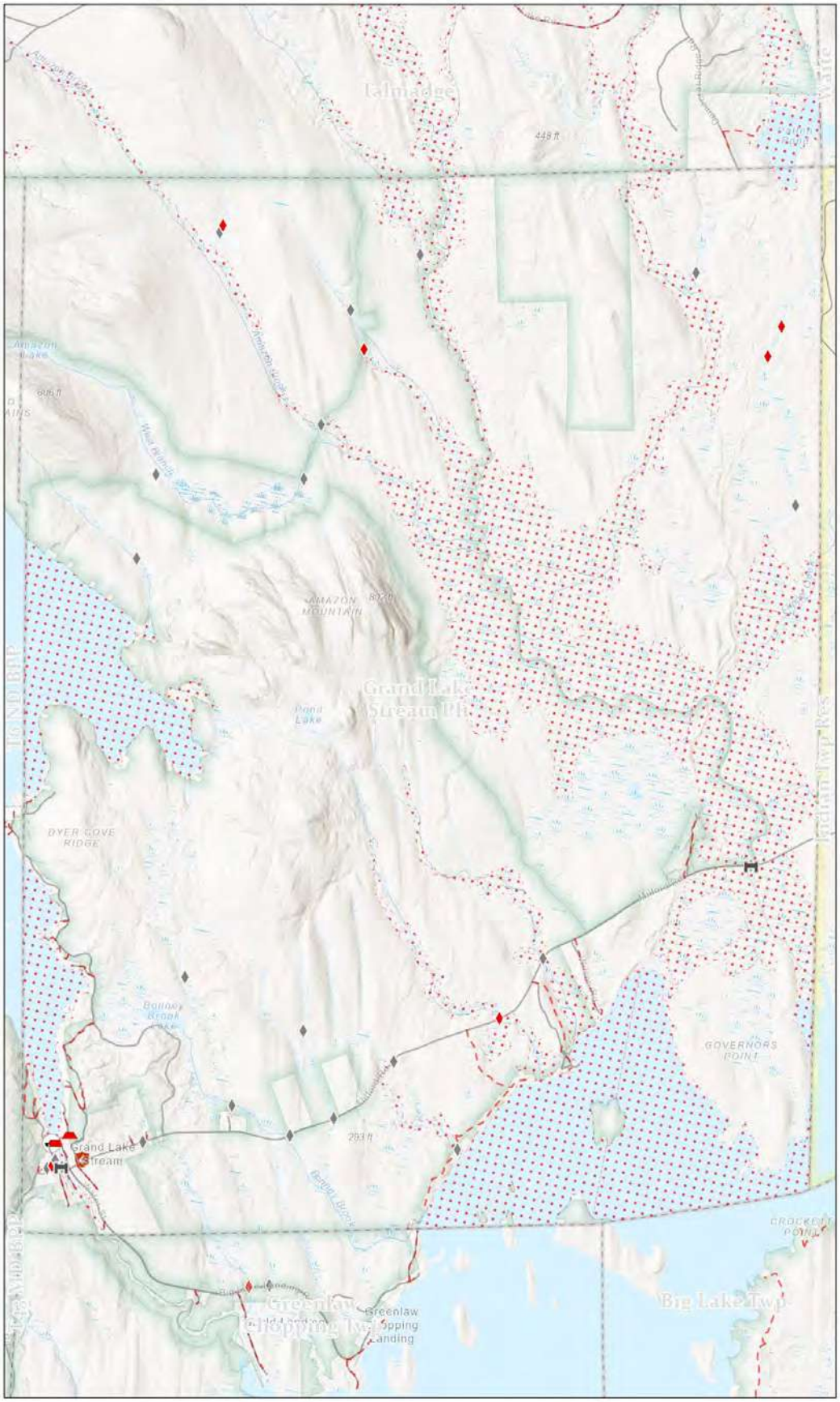
Important Features

- Boat Launches
- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: Grand Lake Stream Plt

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

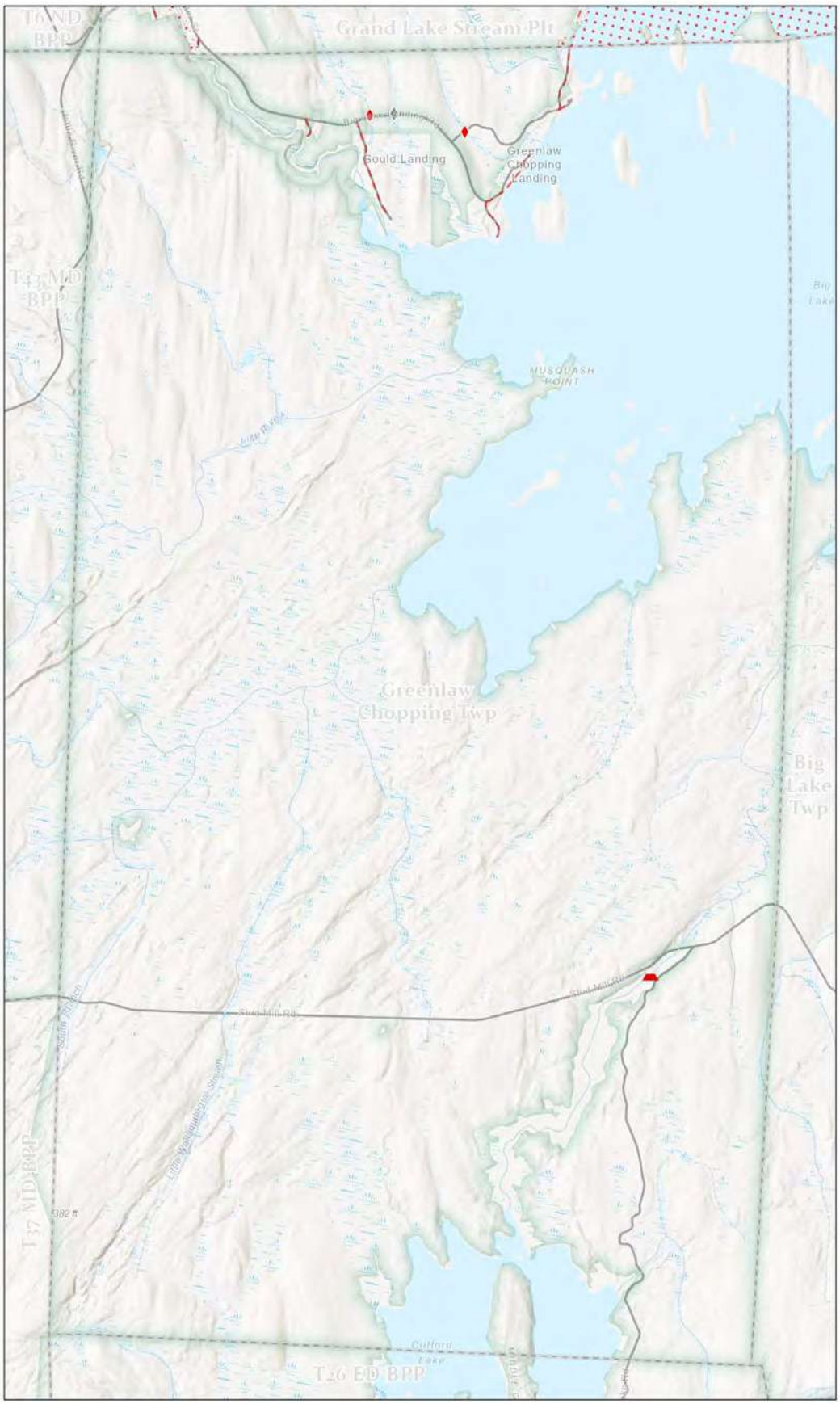
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Boat Launches
- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: Greenlaw Chopping Twp

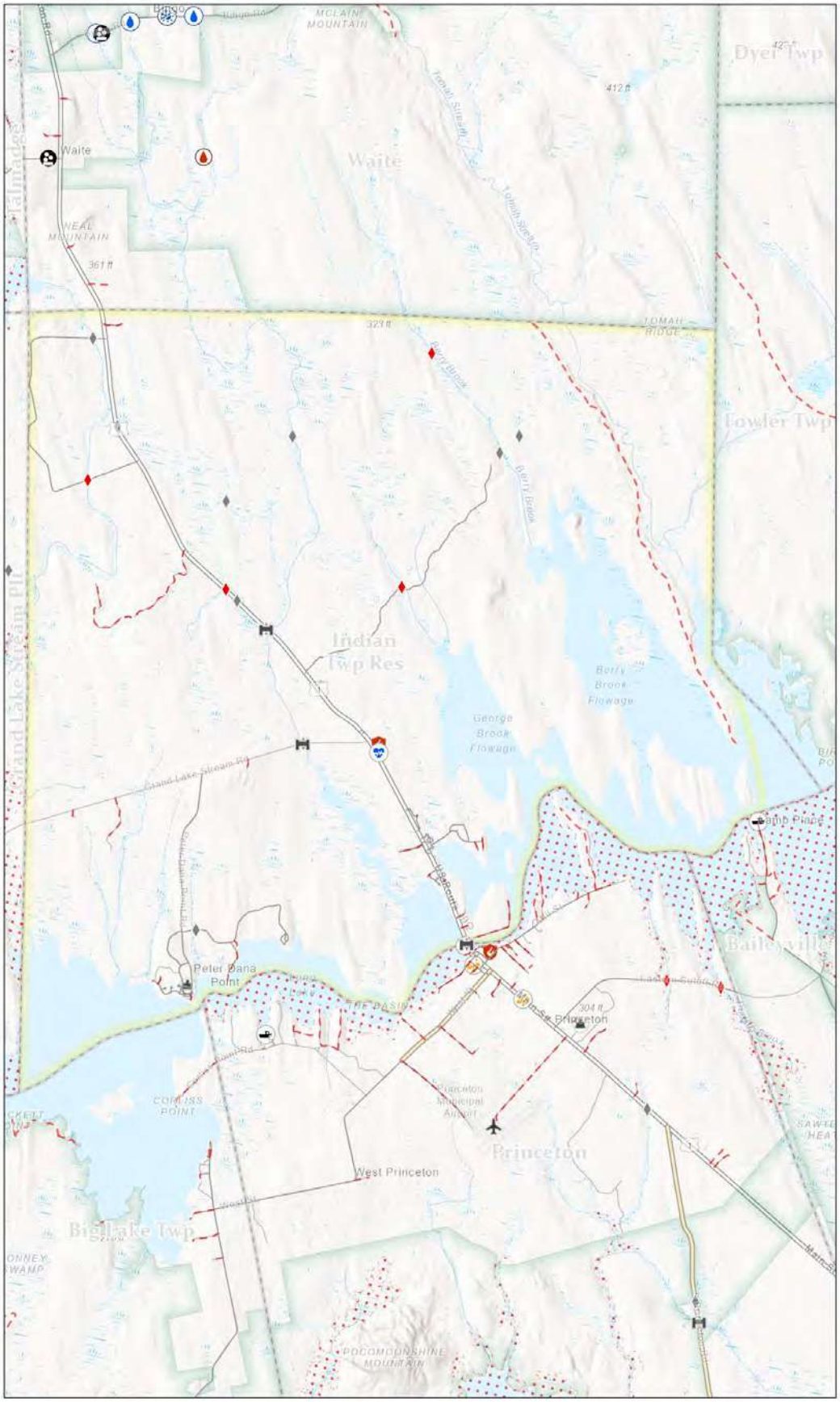
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Indian Twp Res

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

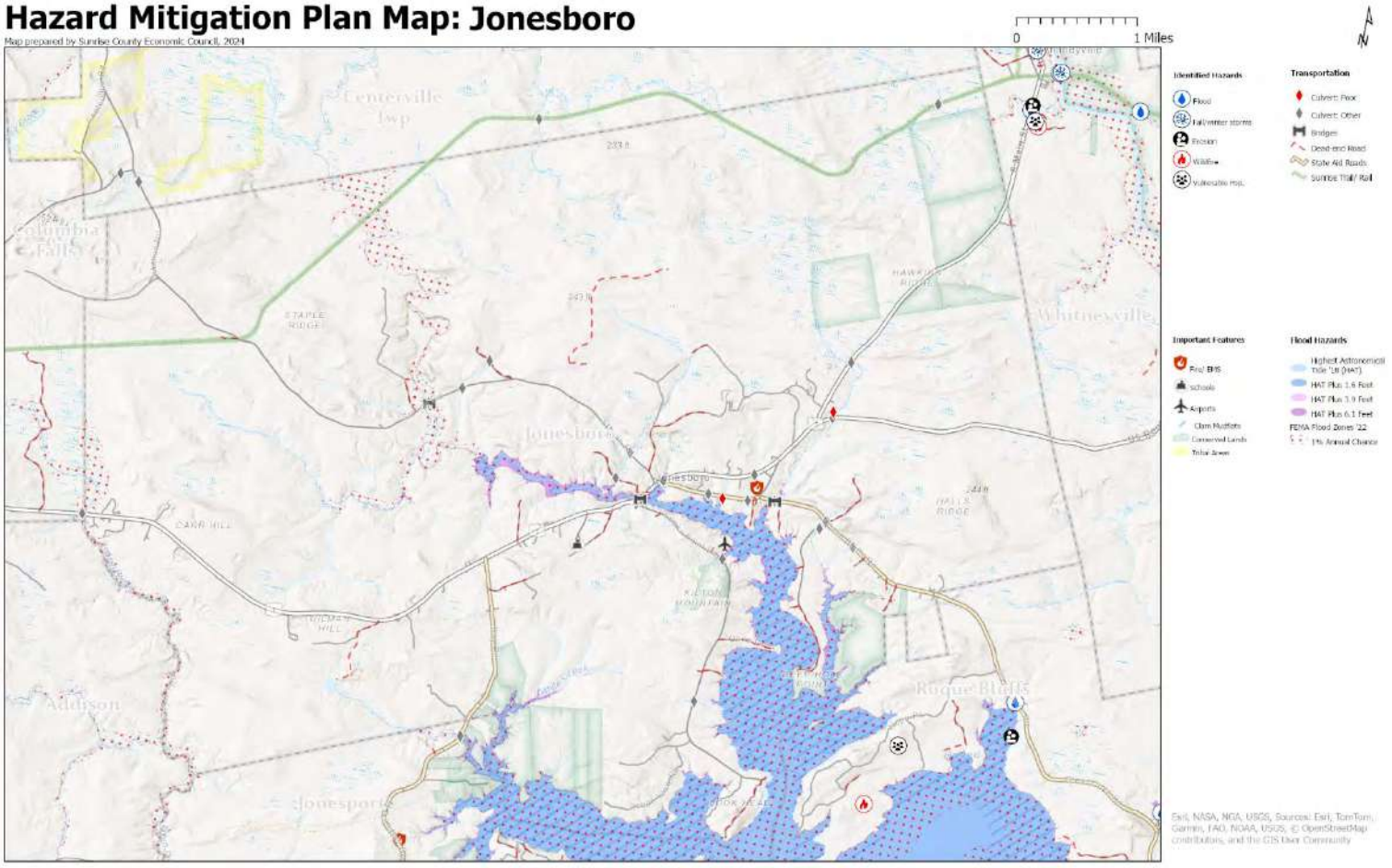
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- Airports
- Conserved Lands
- Tribal Areas

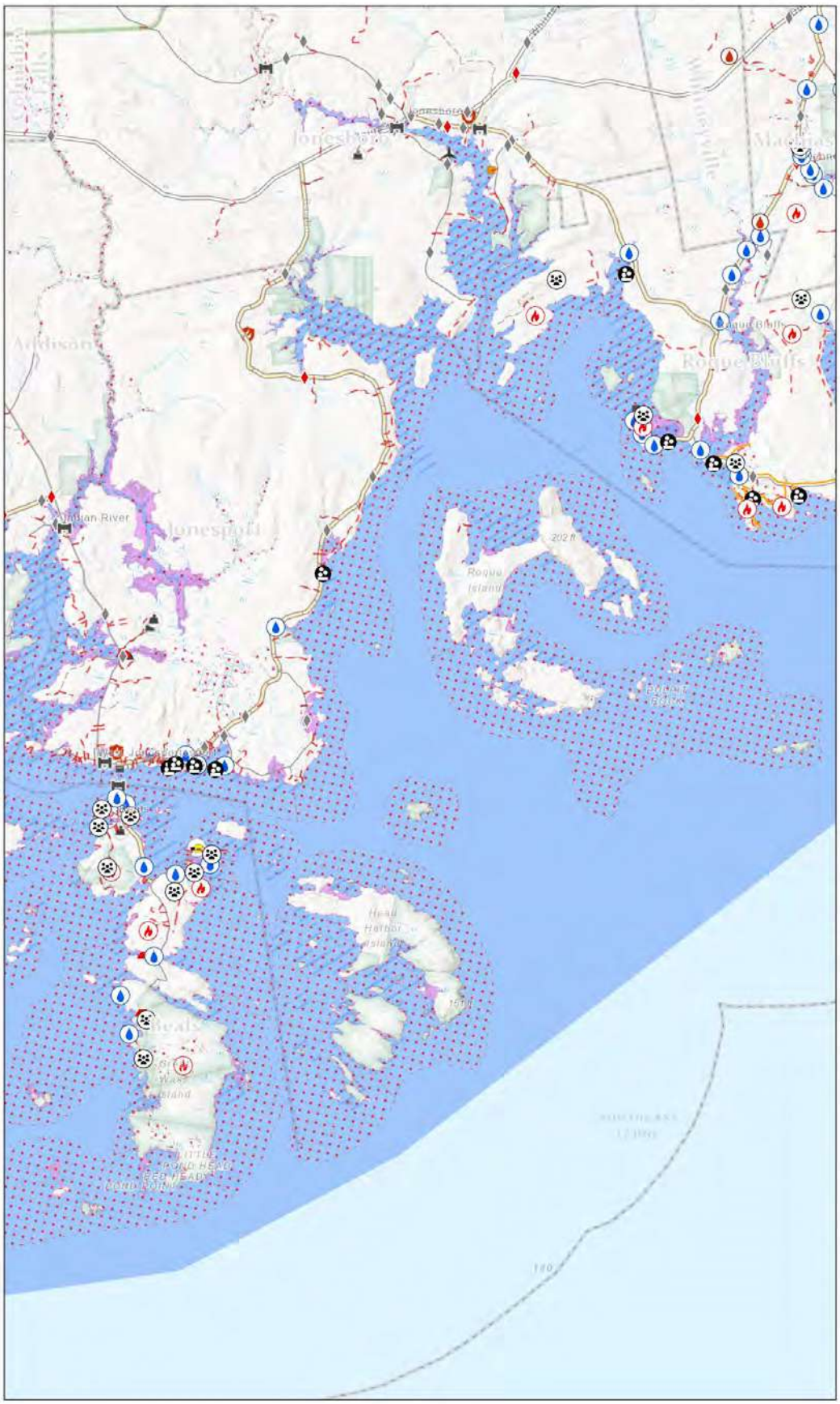
Hazard Mitigation Plan Map: Jonesboro

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Jonesport

Map prepared by Sunrise County Economic Council, 2024



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

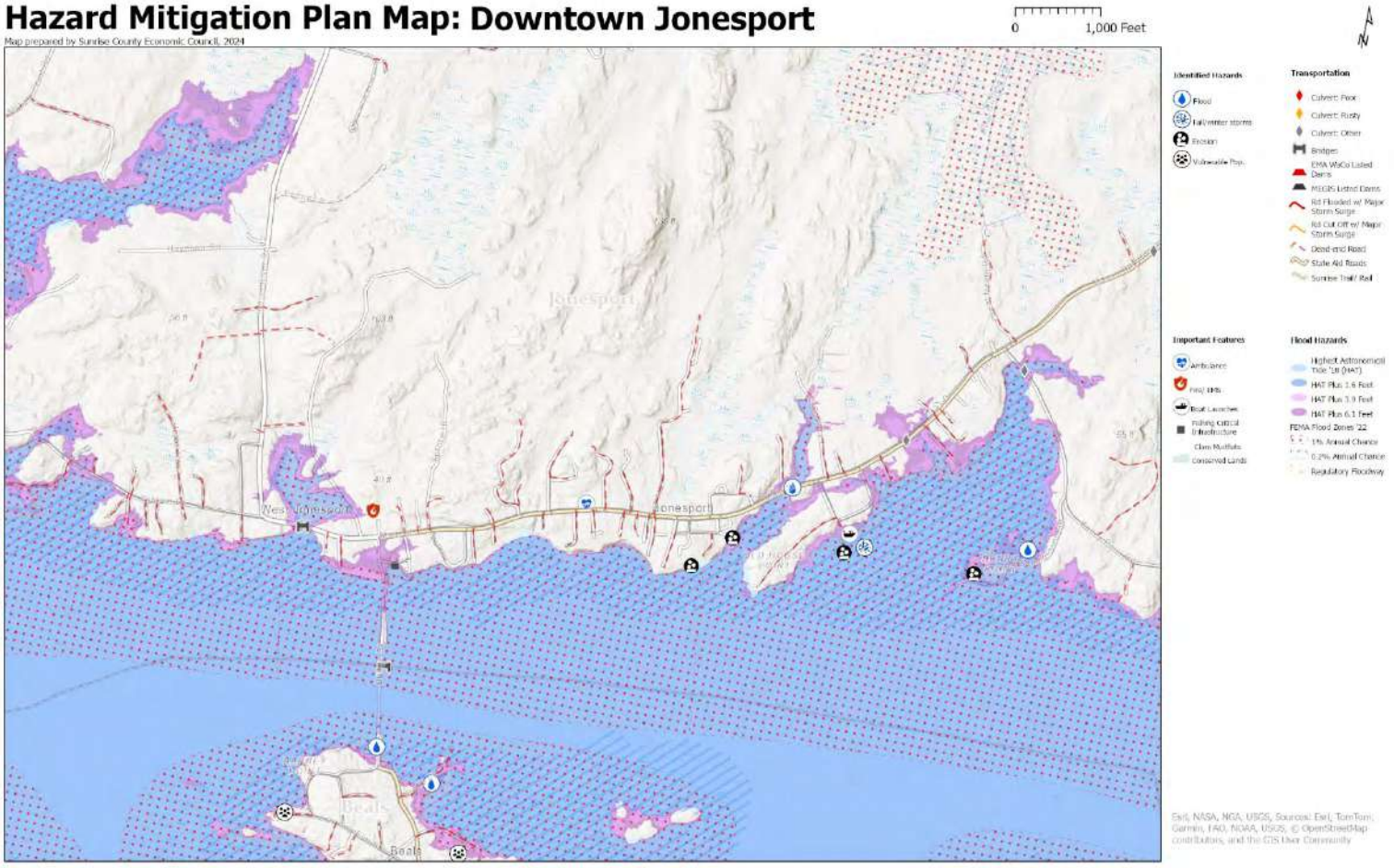
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Schools
- Boat Launches
- Fish Wharf- Fair Condition
- Fish Wharf- Poor Condition
- Fishing Critical Infrastructure
- Airports
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Downtown Jonesport

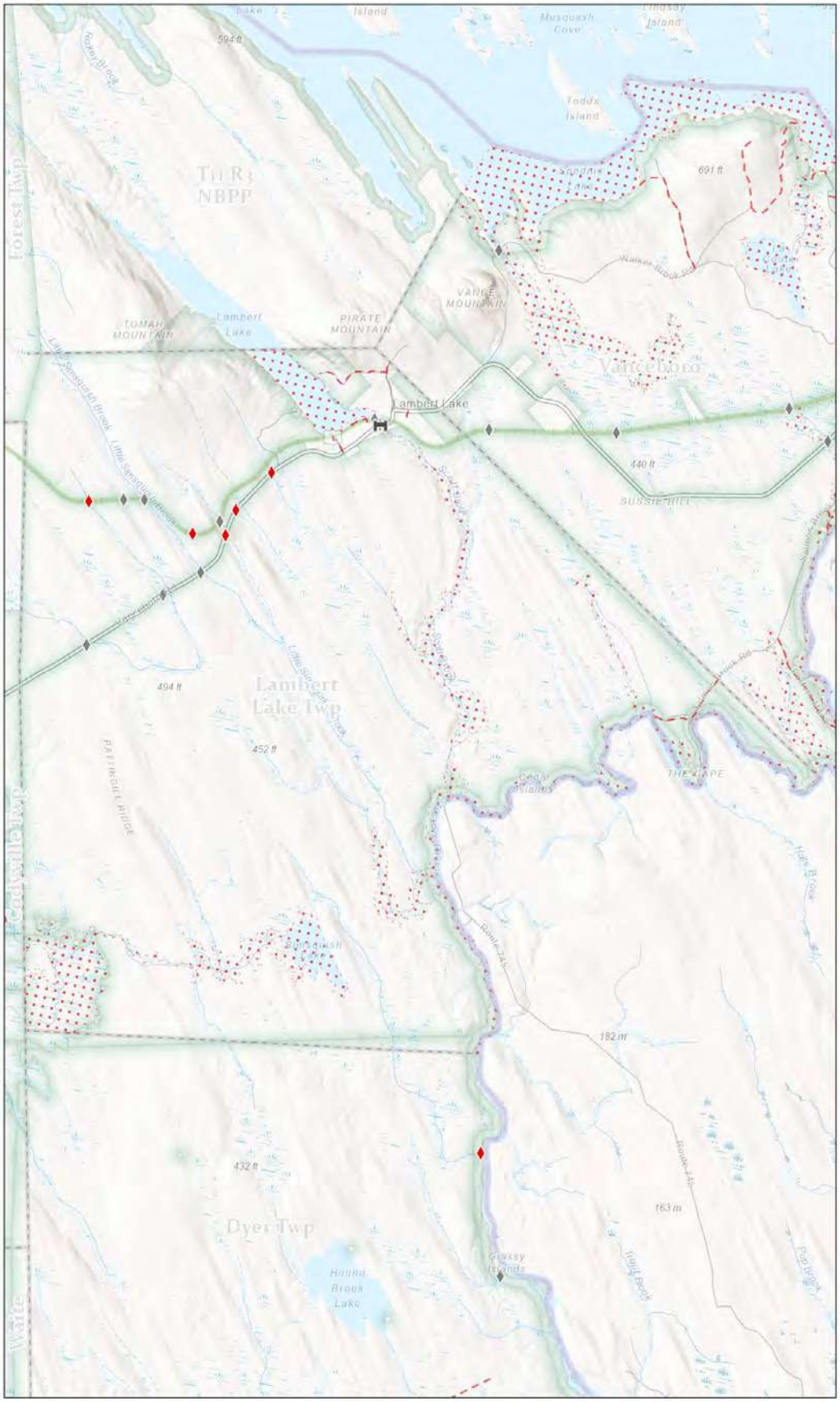
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Lambert Lake Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Dead-end Road
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

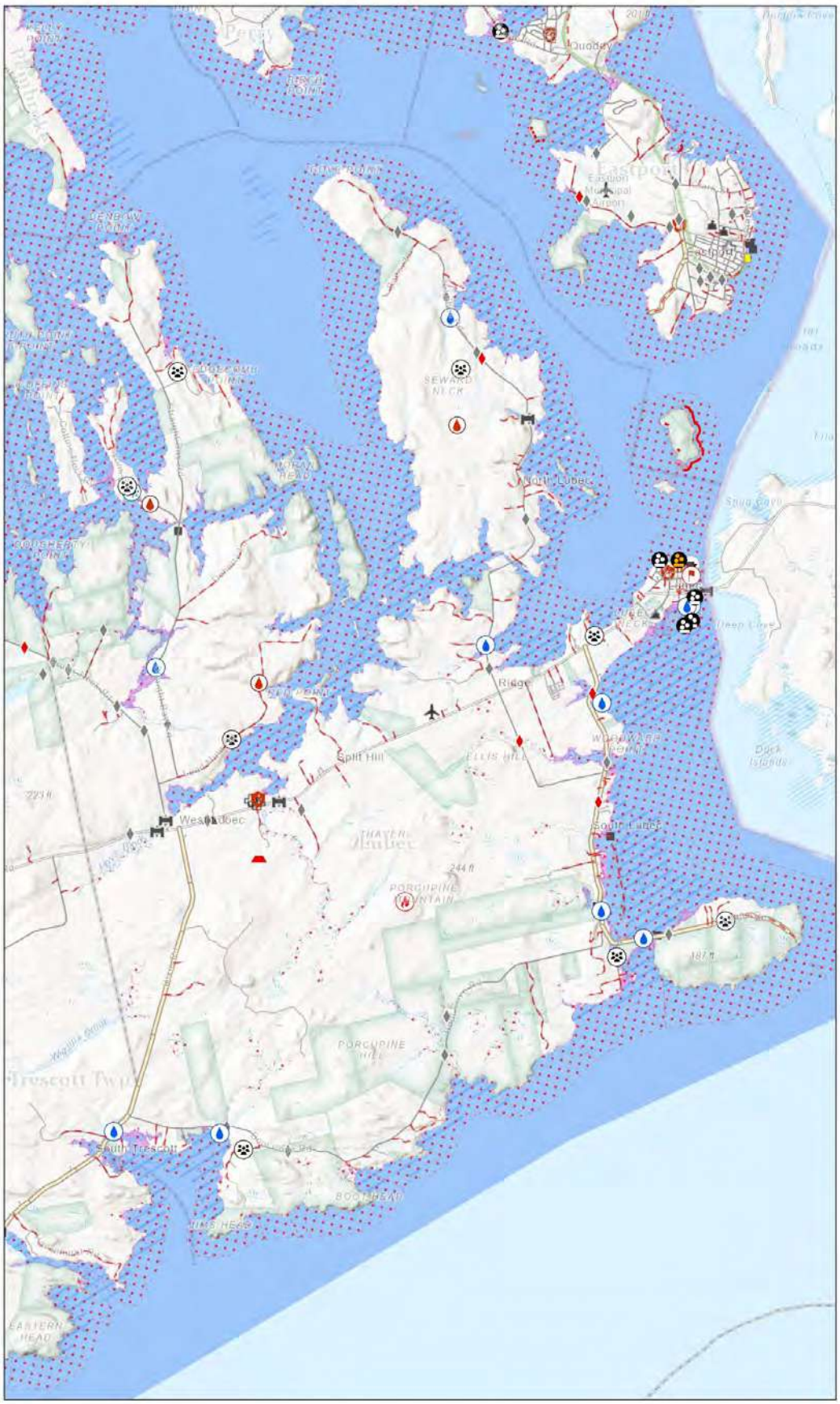
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Conserved Lands

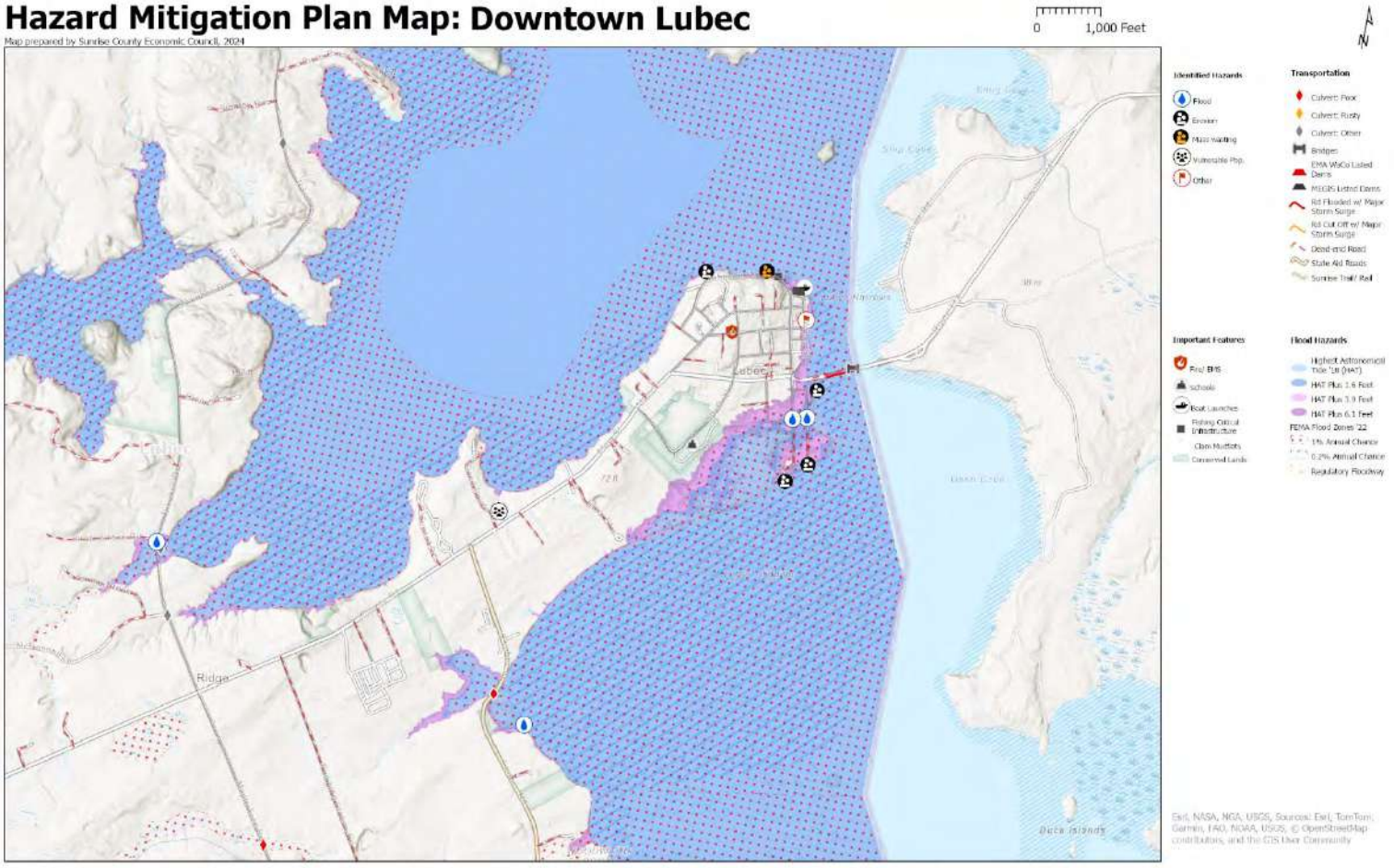
Hazard Mitigation Plan Map: Lubec

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Downtown Lubec

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Machias

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

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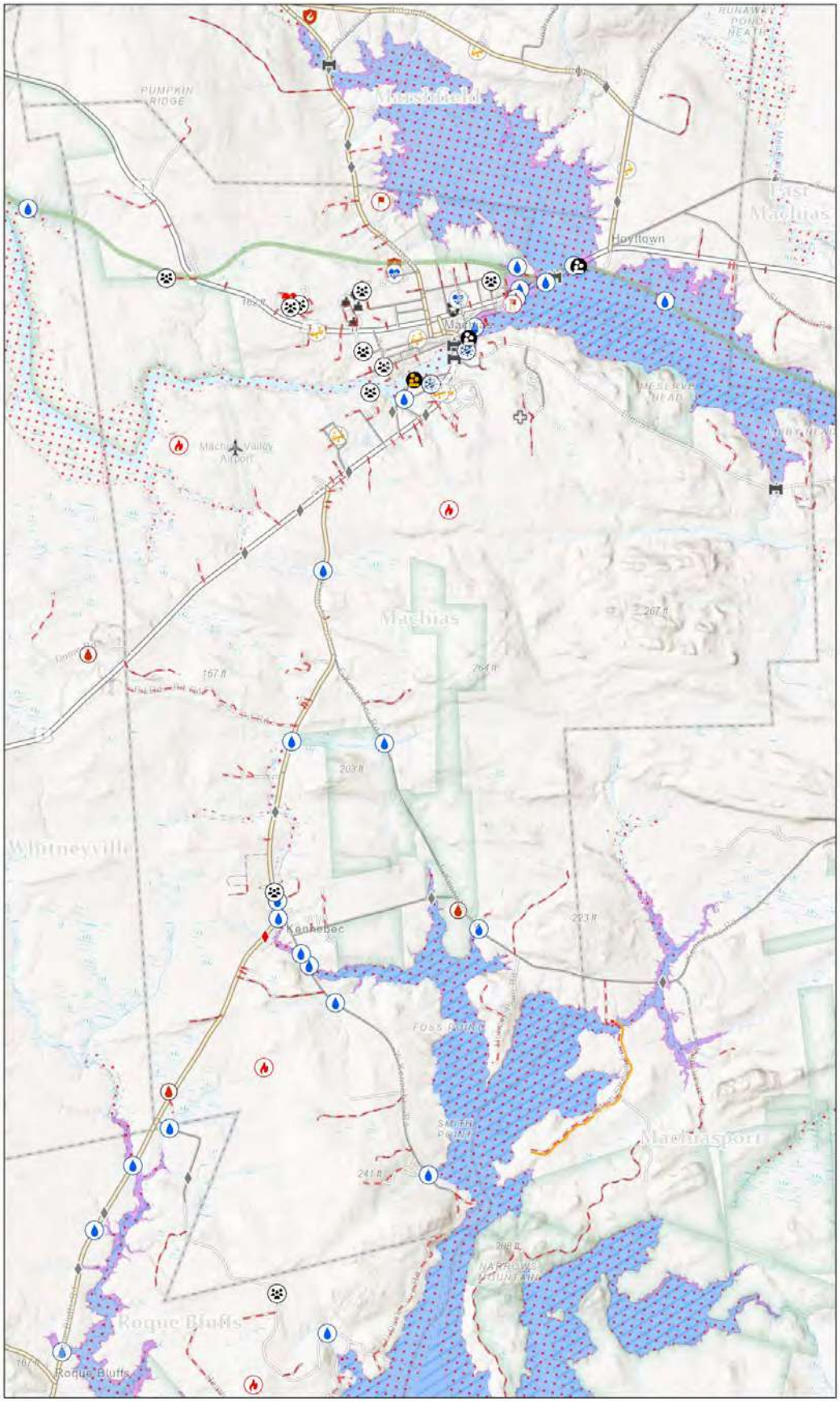


Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

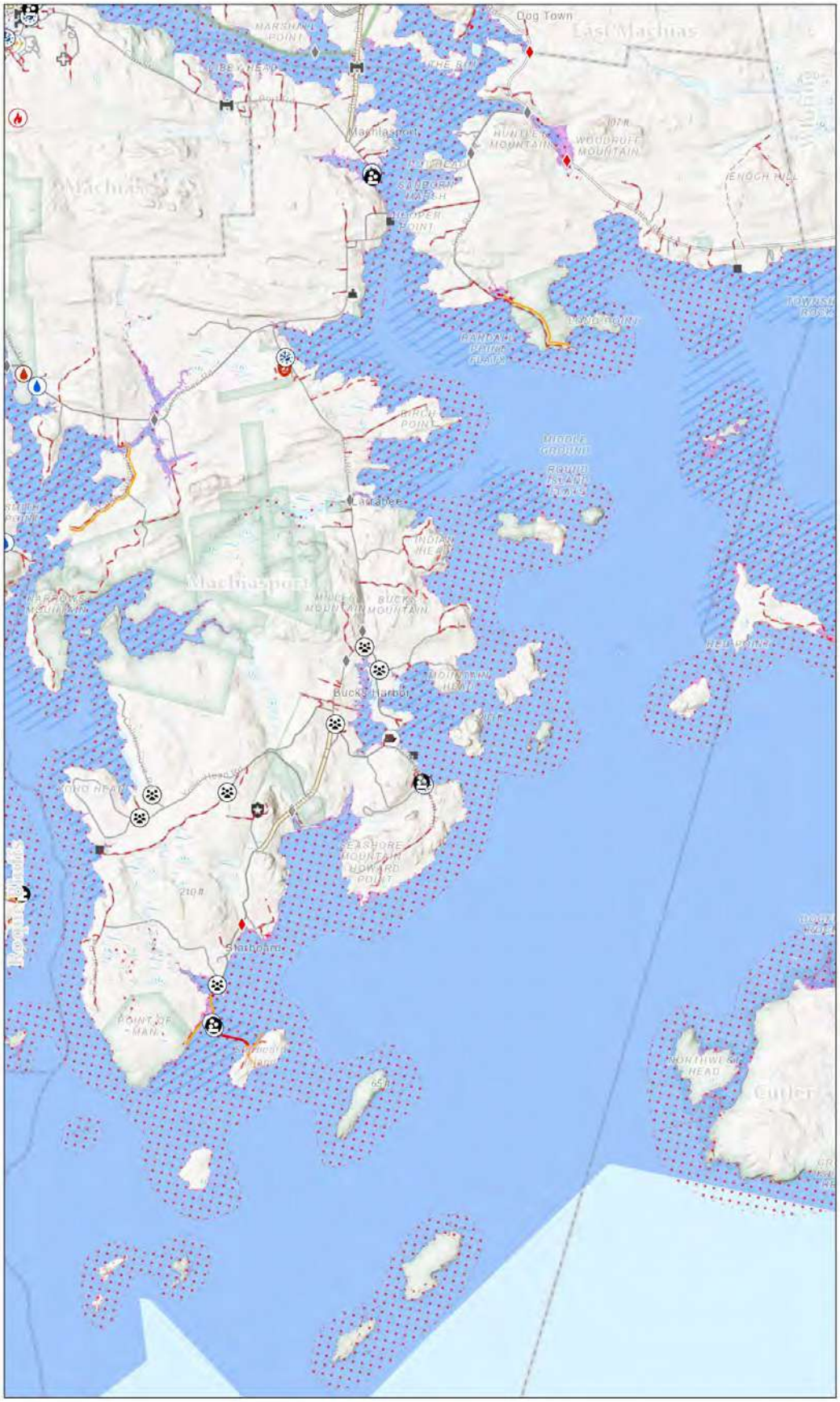
Important Features

- Ambulance
- Fire/ EMS
- Hospitals
- Nursing/Asst Living
- Childcare Providers
- Schools
- Correctional Facilities
- Boat Launches
- Airports
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Machiasport

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

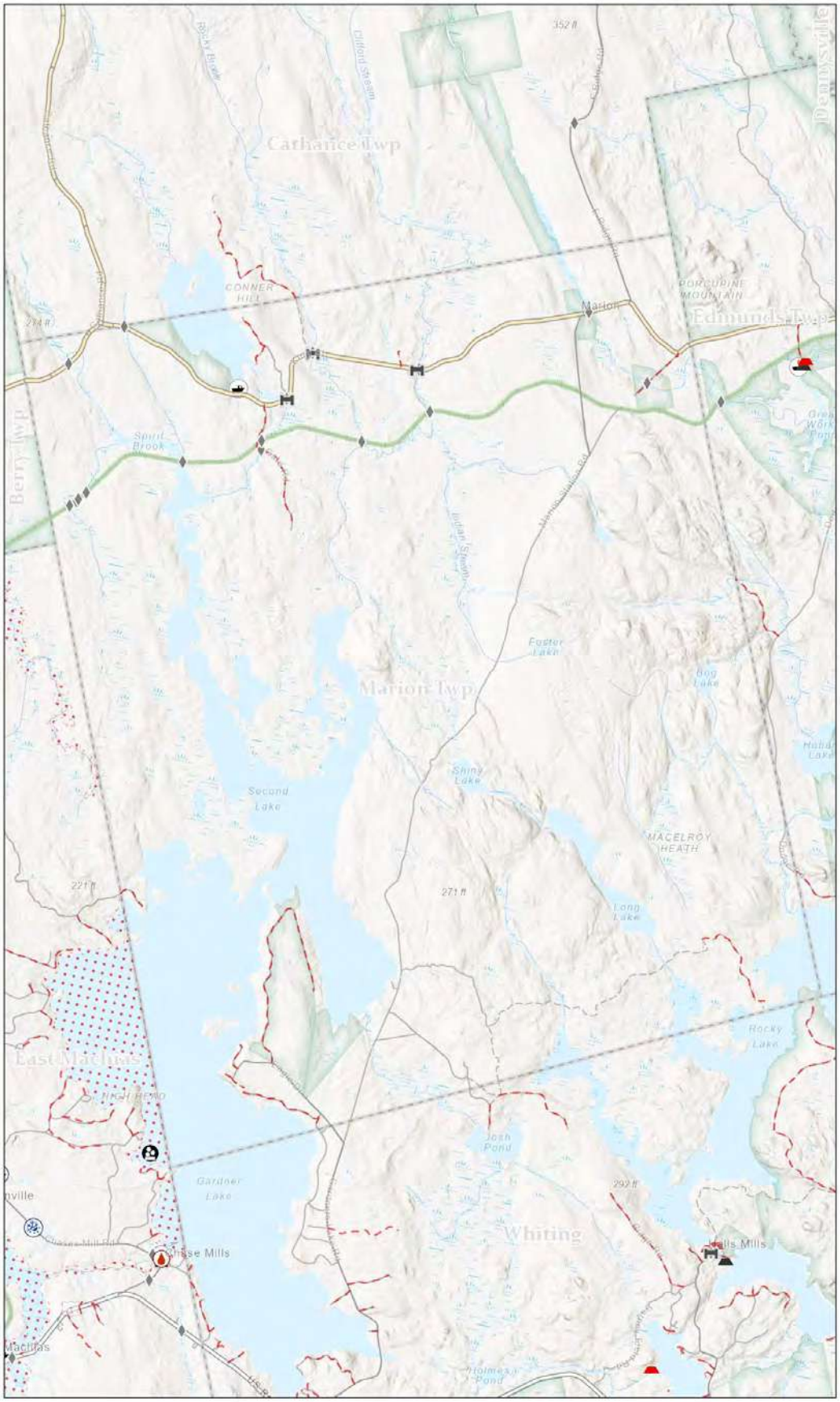
Important Features

- Fire/ EMS
- Nursing/Asst Living
- Childcare Providers
- Schools
- Correctional Facilities
- Boat Launches
- **Fishing Critical Infrastructure**
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Marion Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

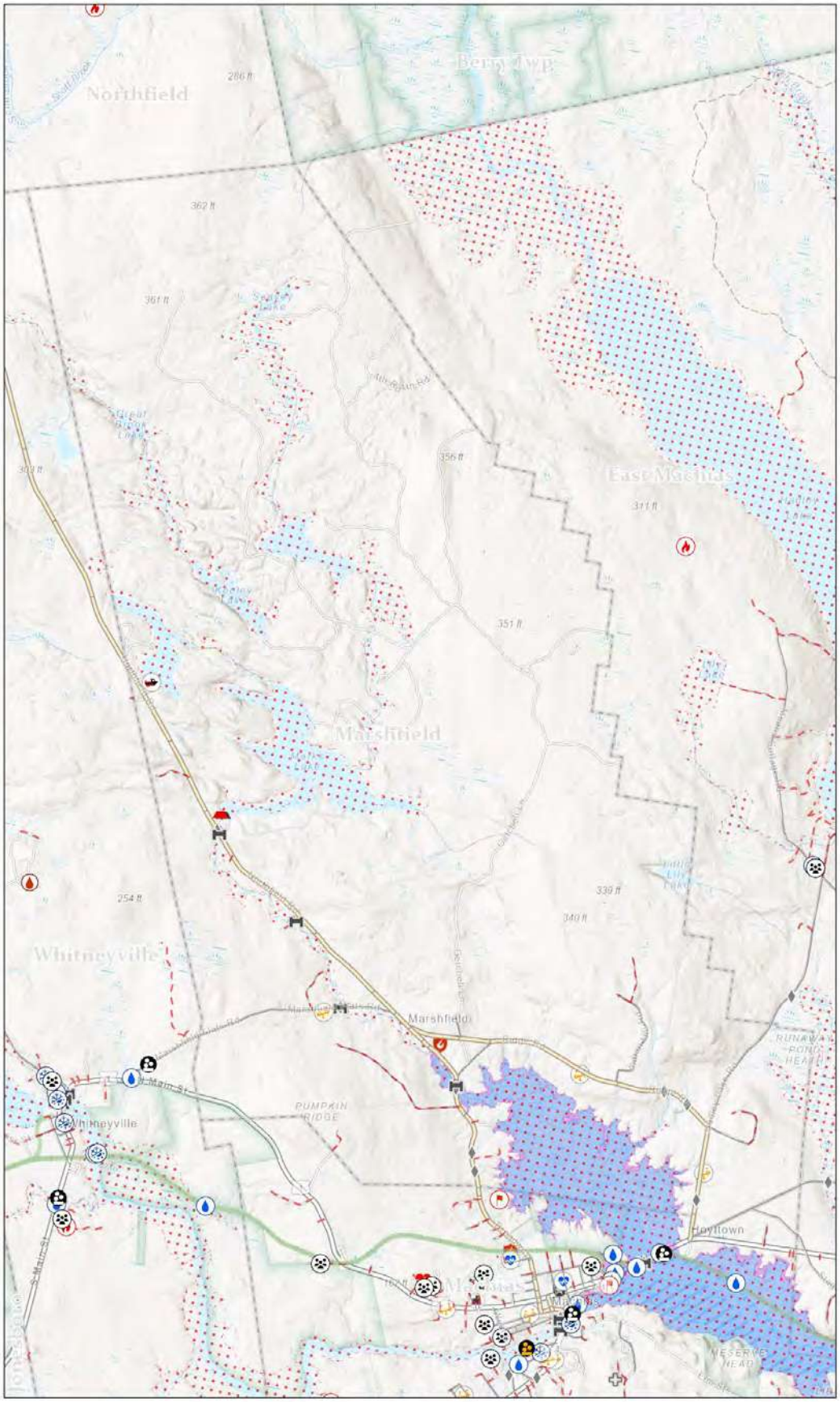
Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Marshfield

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

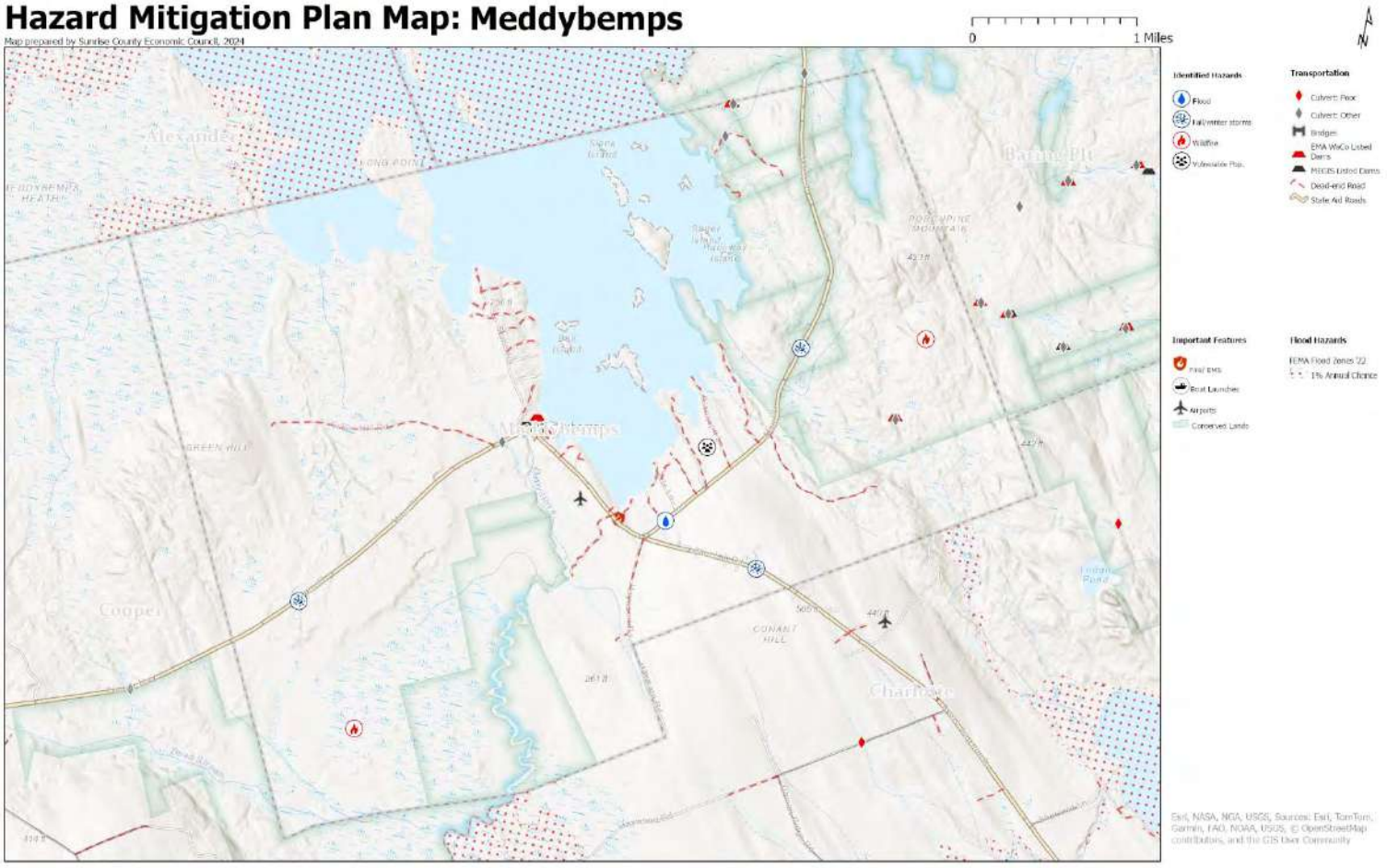
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Hospitals
- Nursing/Asst Living
- Childcare Providers
- Schools
- Correctional Facilities
- Boat Launches
- Airports
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Meddybemps

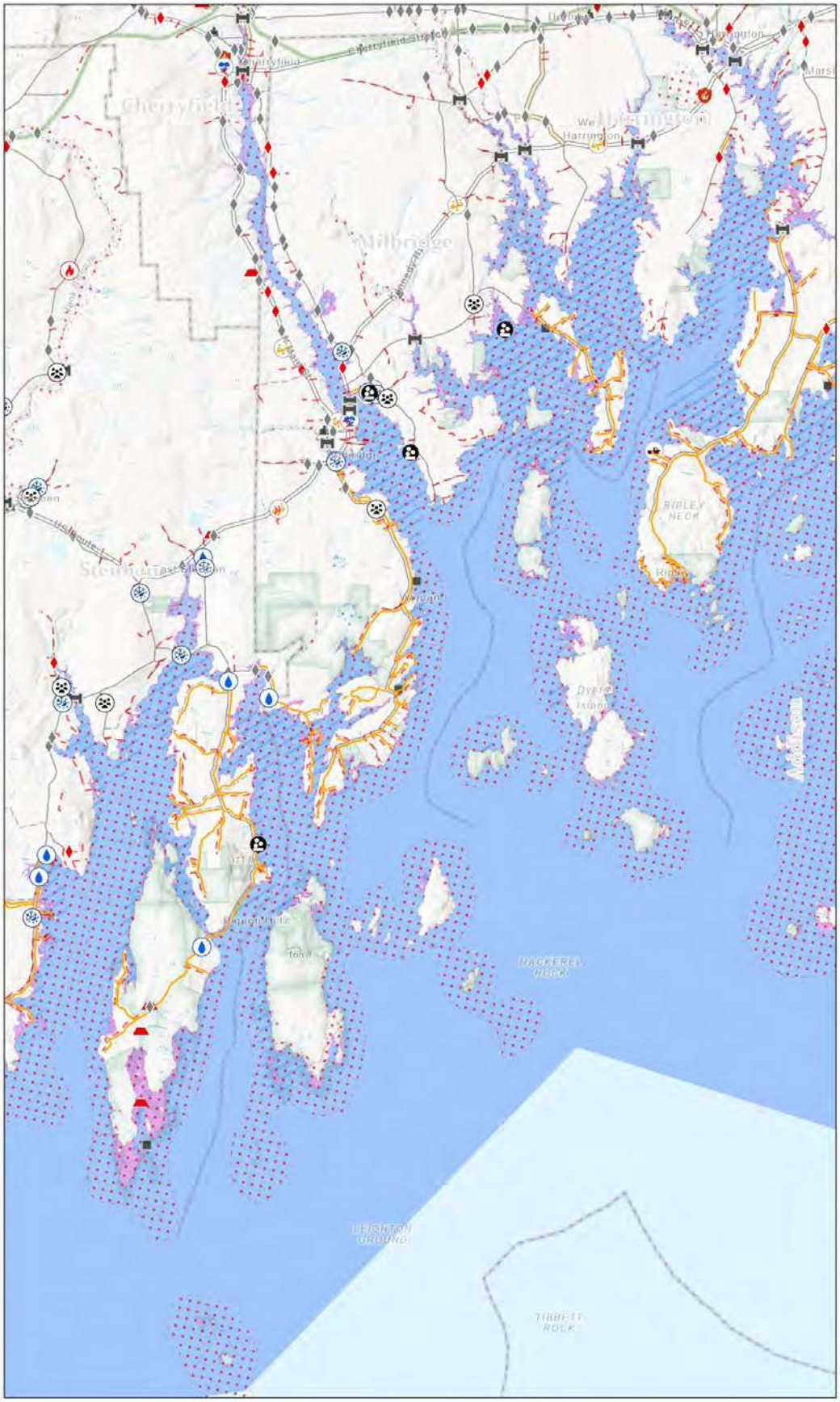
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Milbridge

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Rd Cut Off w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

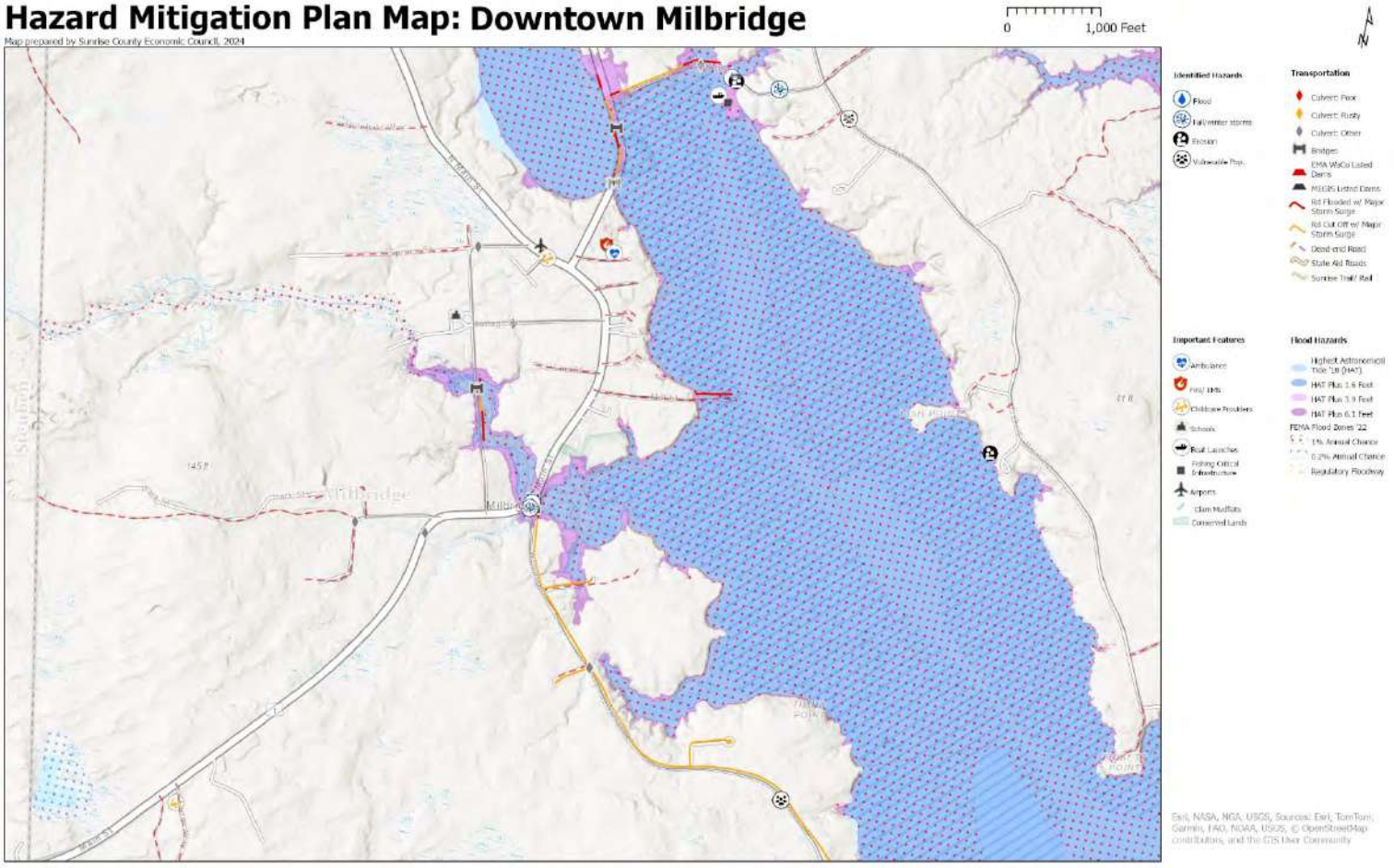
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- **Fishing Critical Infrastructure**
- Airports
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Downtown Milbridge

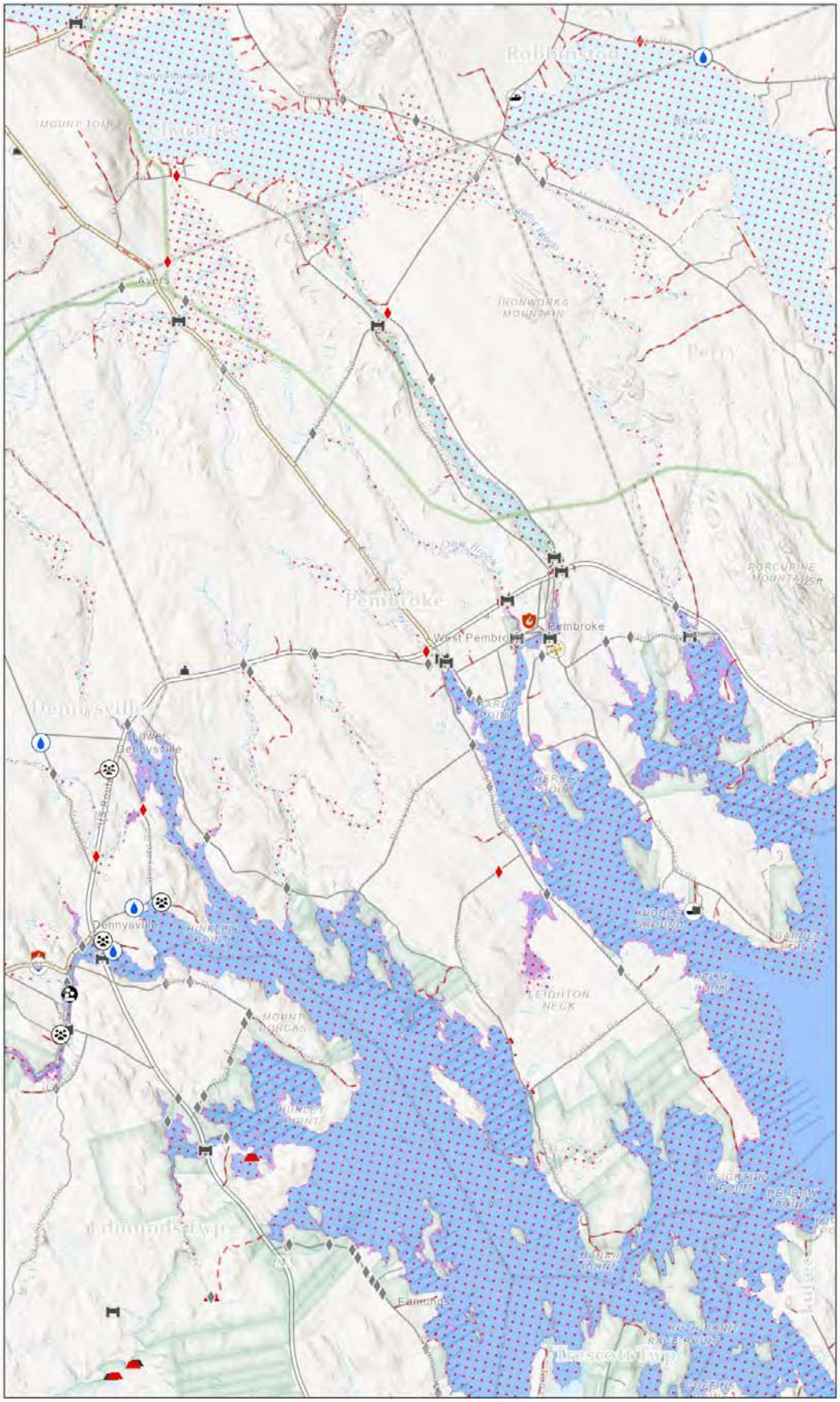
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Pembroke

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

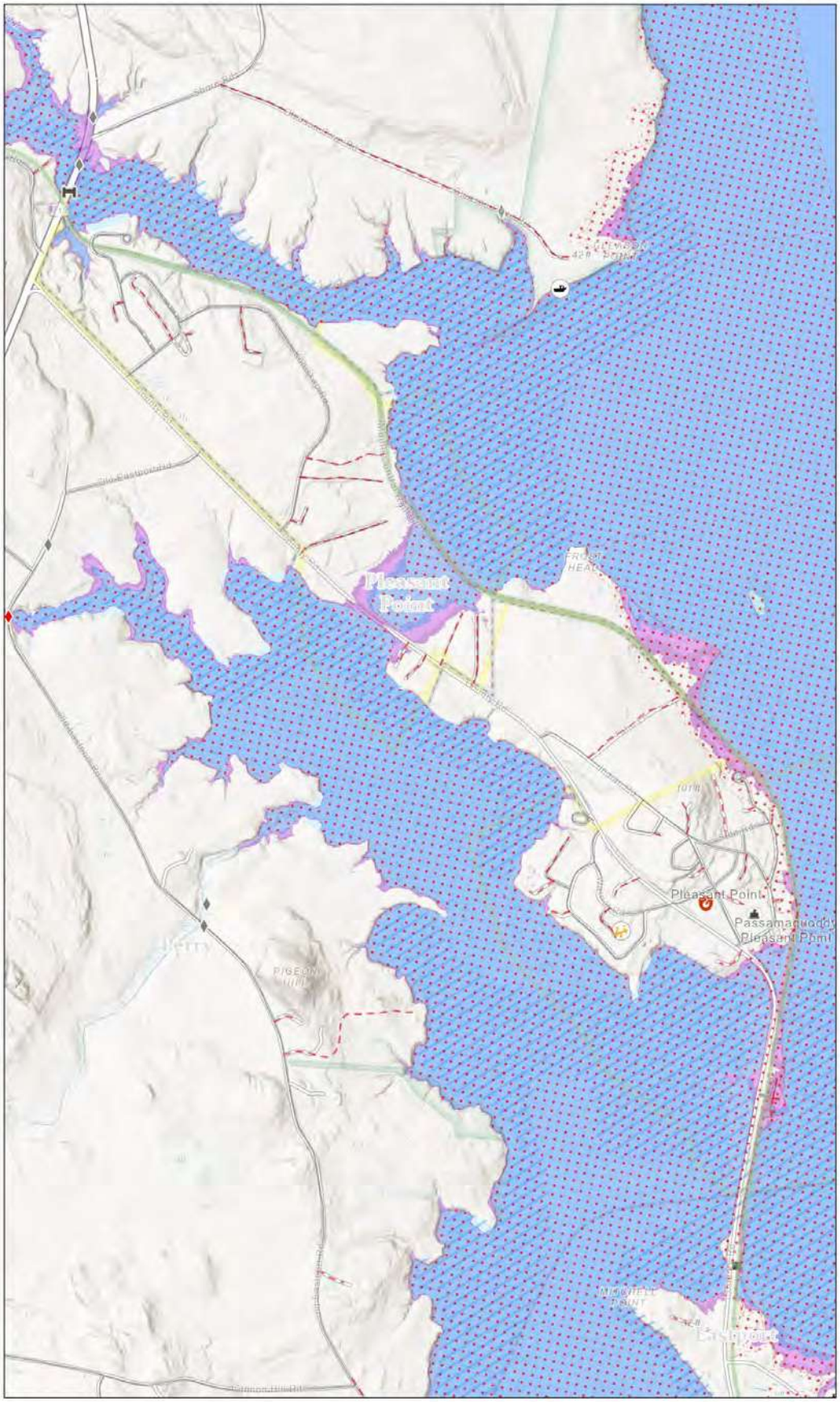
Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- **Fishing Critical Infrastructure**
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Pleasant Point

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

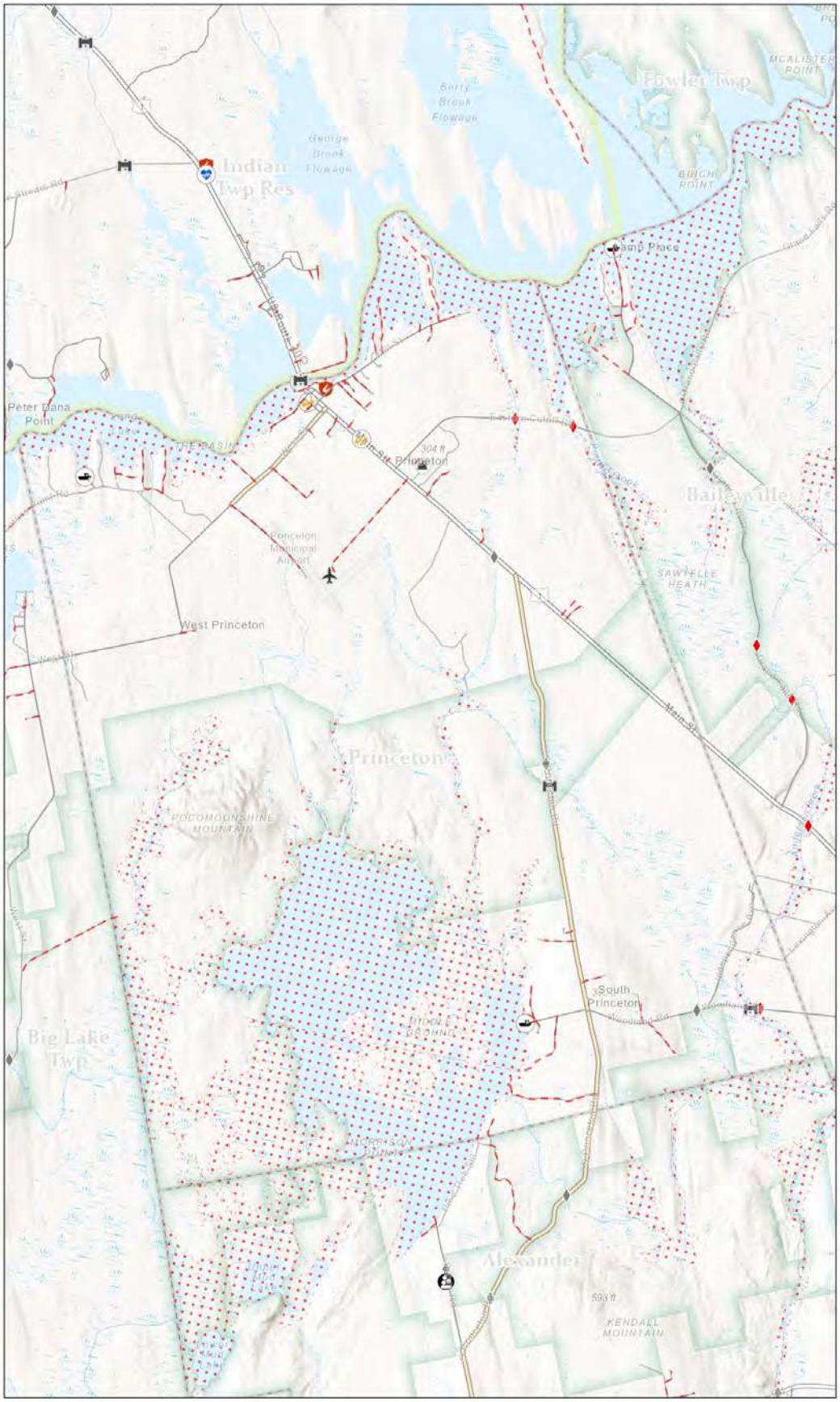
Important Features

- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- **Fishing Critical Infrastructure**
- Clam Mudflats
- Conserved Lands
- Tribal Areas

Hazard Mitigation Plan Map: Princeton

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

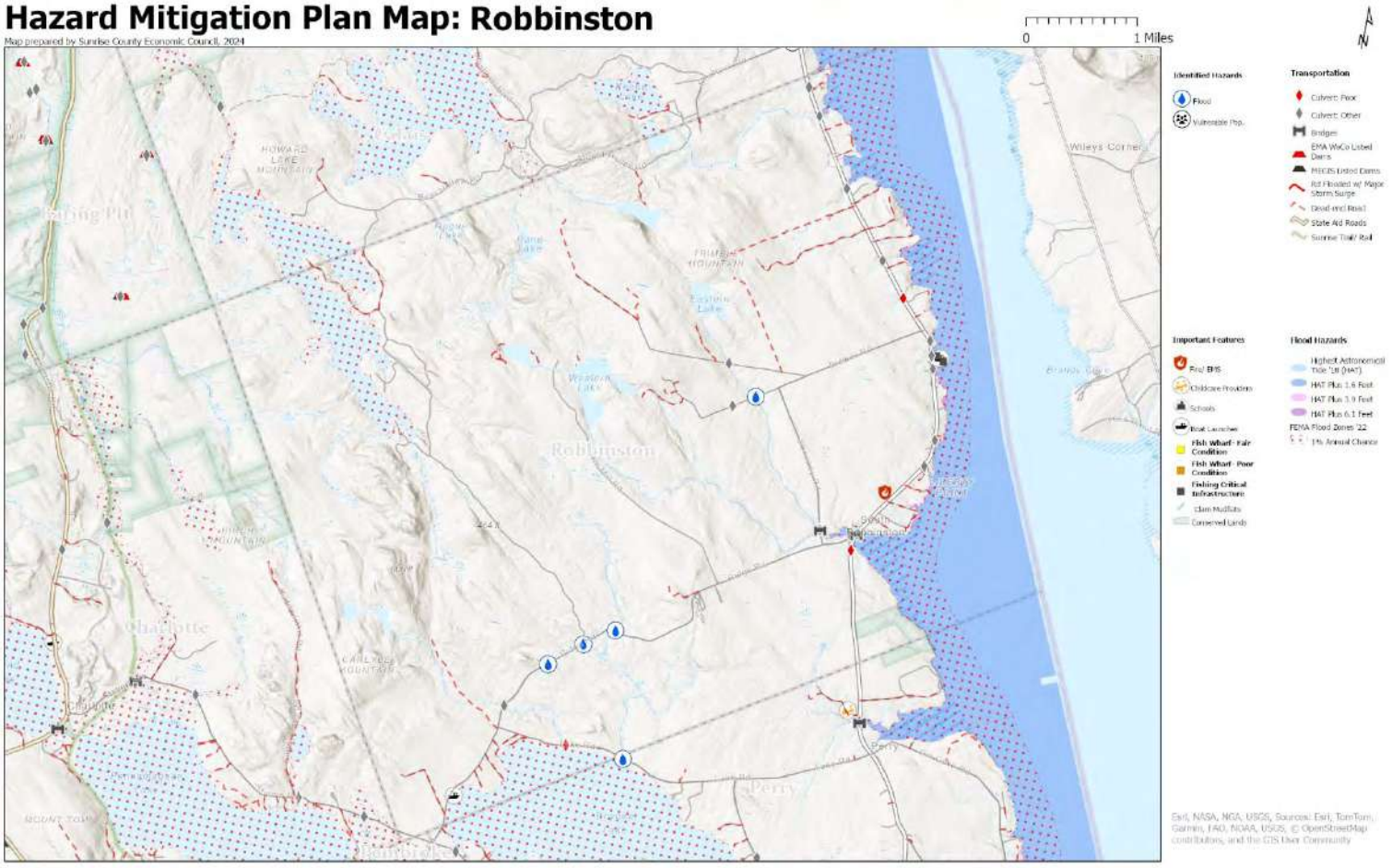
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Childcare Providers
- Schools
- Boat Launches
- Airports
- Conserved Lands
- Tribal Areas

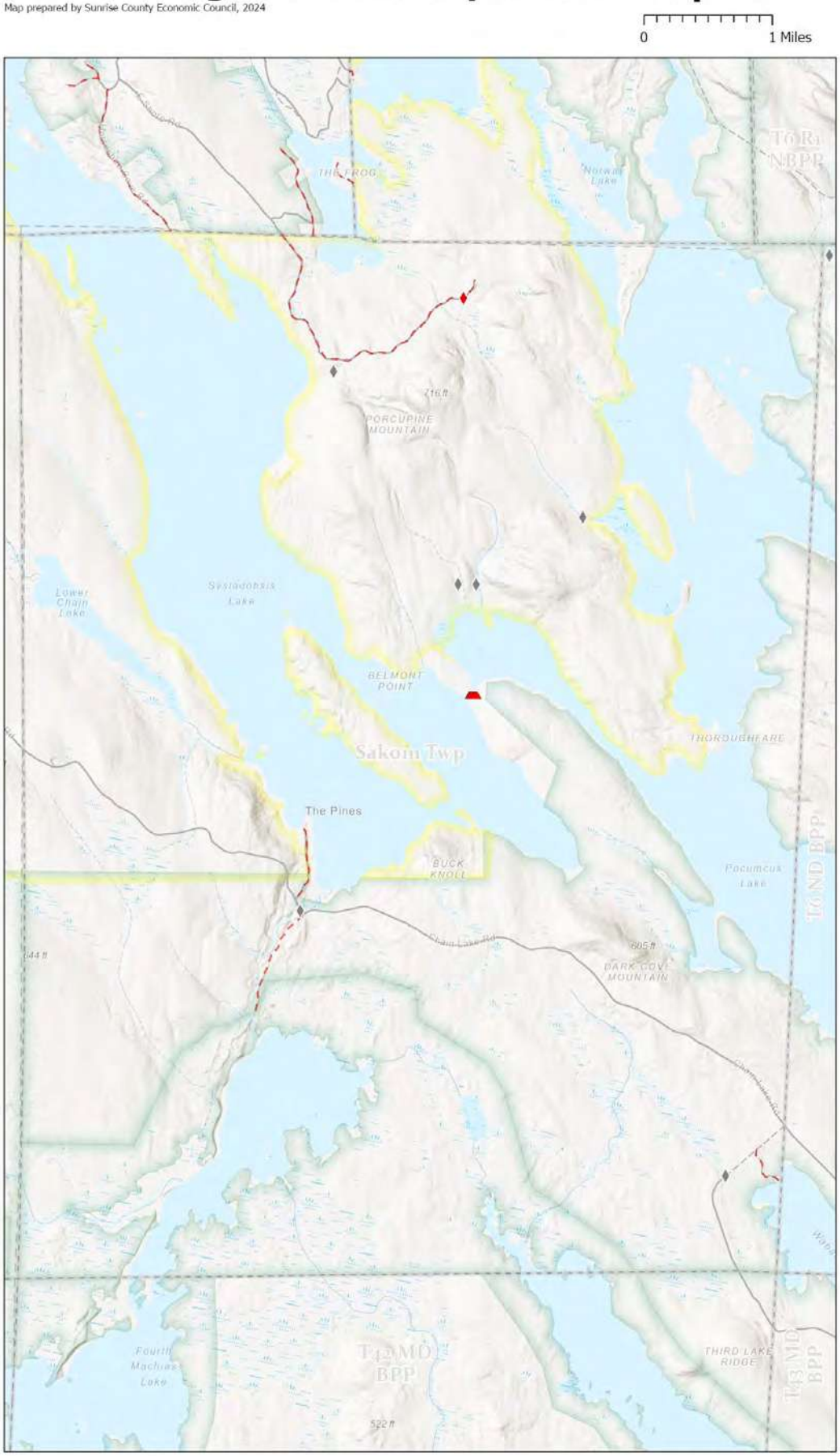
Hazard Mitigation Plan Map: Robbinston

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Sakom Twp

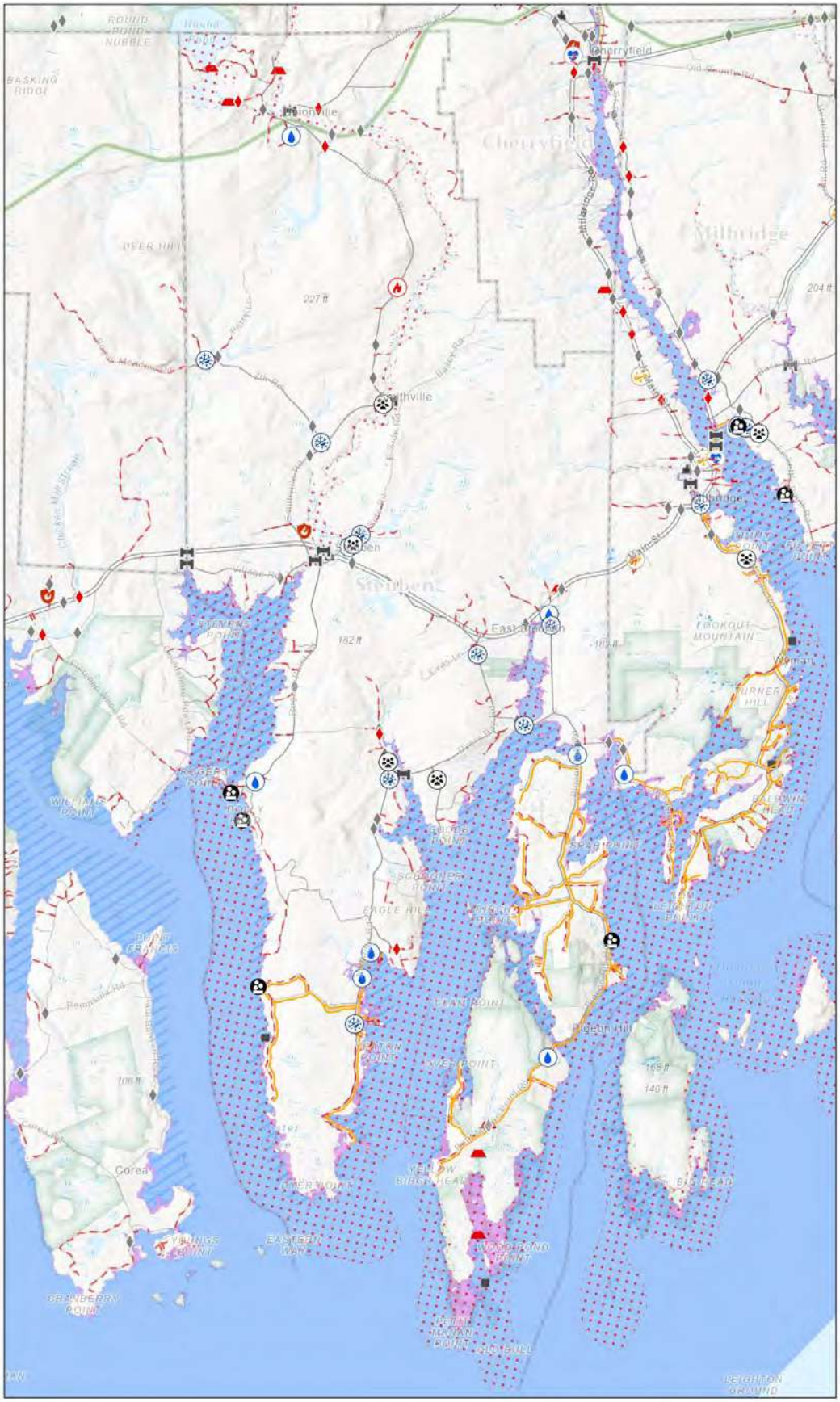
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Steuben

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Hazard Mitigation Plan Map: T6 ND BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: T6 R1 NBPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

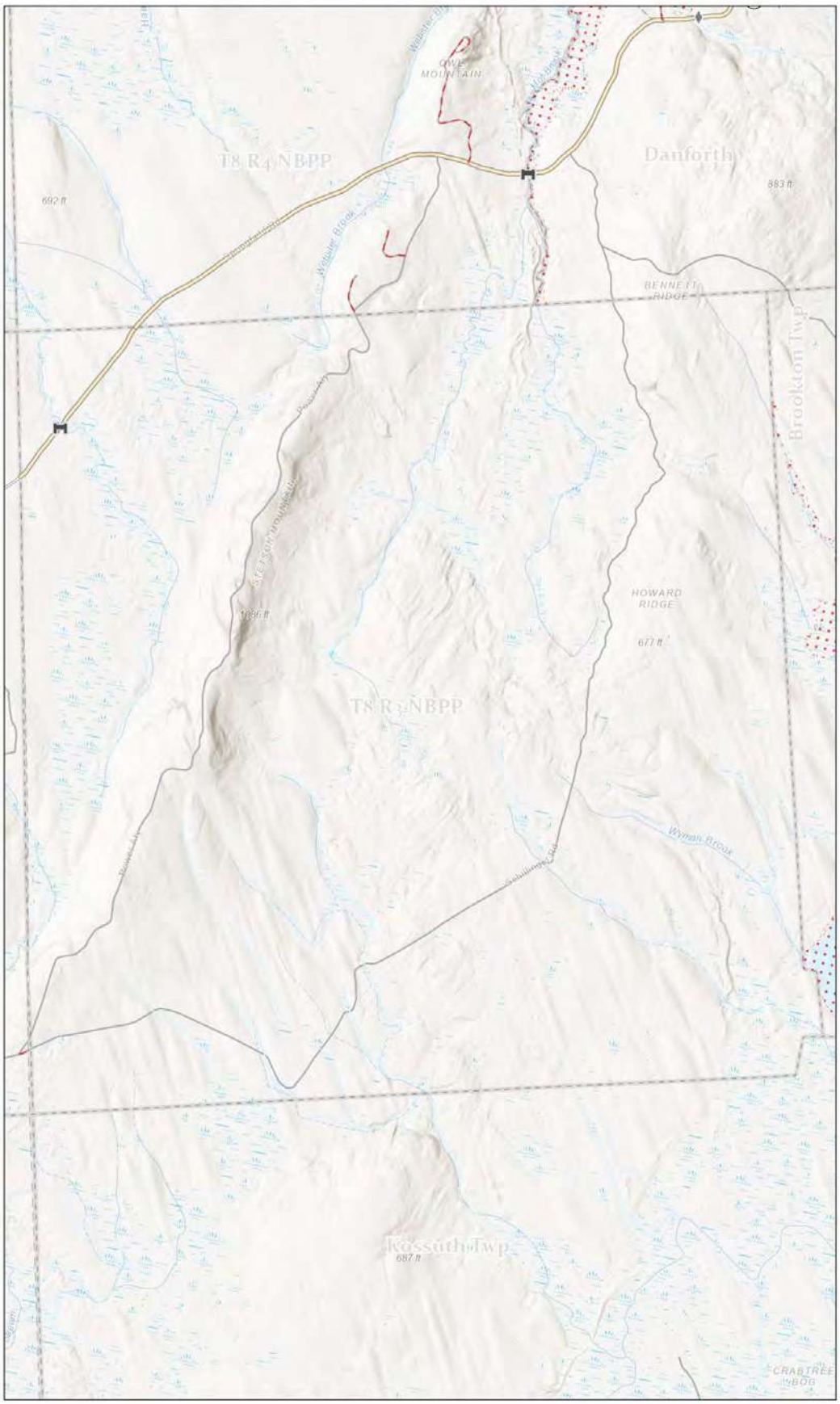
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Conserved Lands
- Tribal Areas

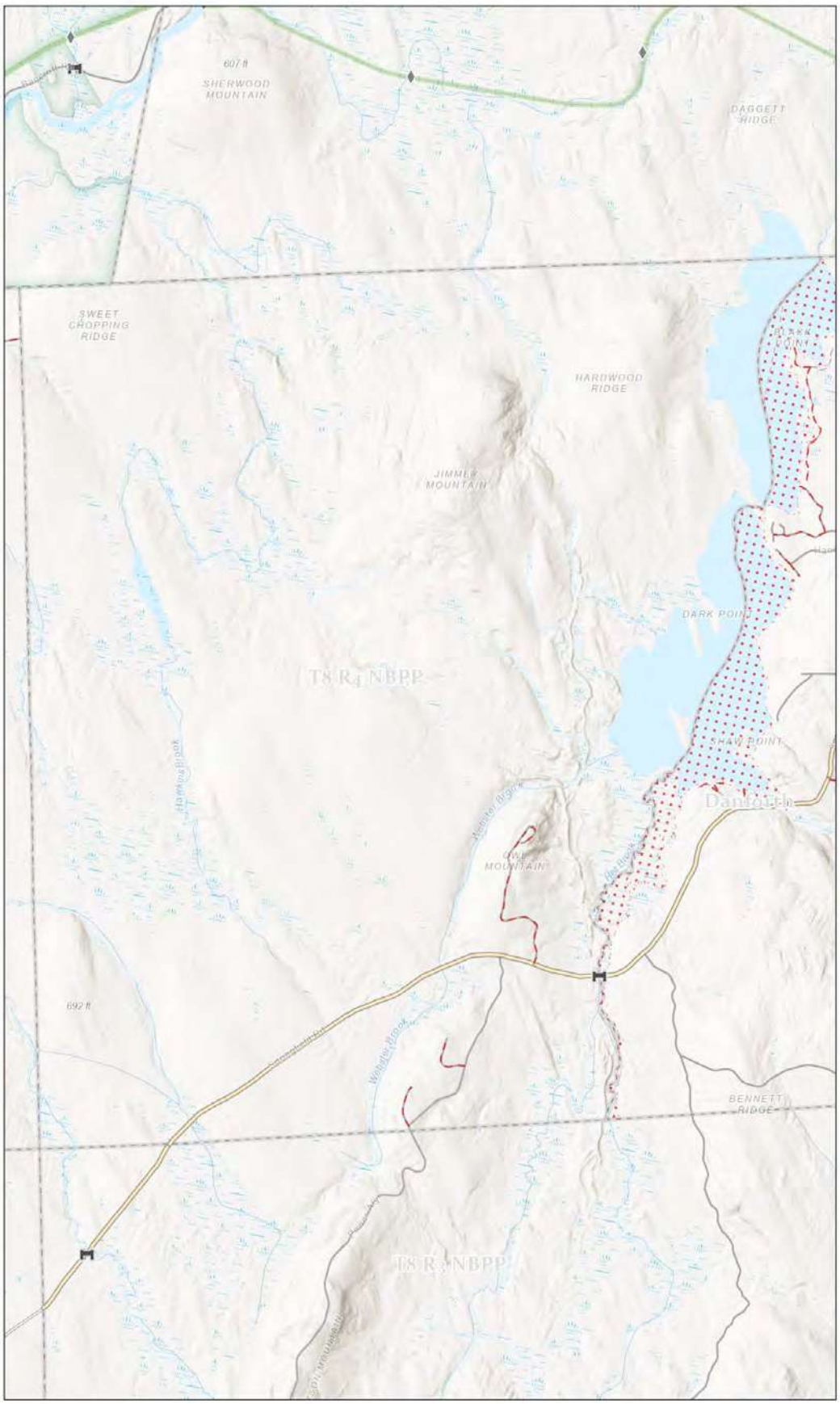
Hazard Mitigation Plan Map: T8 R3 NBPP

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: T8 R4 NBPP

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: T11 R3 NBPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- Dead-end Road
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

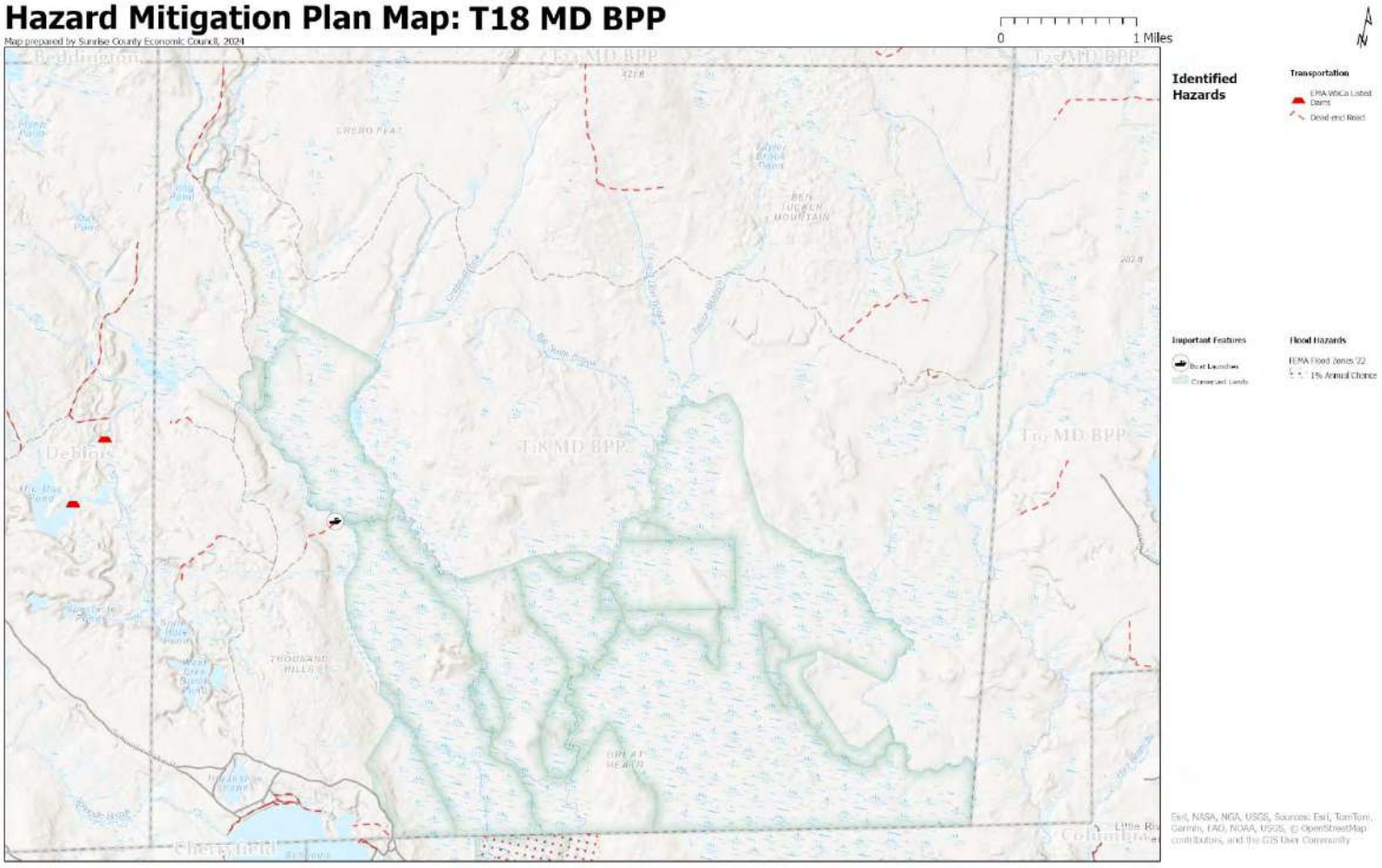
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Conserved Lands

Hazard Mitigation Plan Map: T18 MD BPP

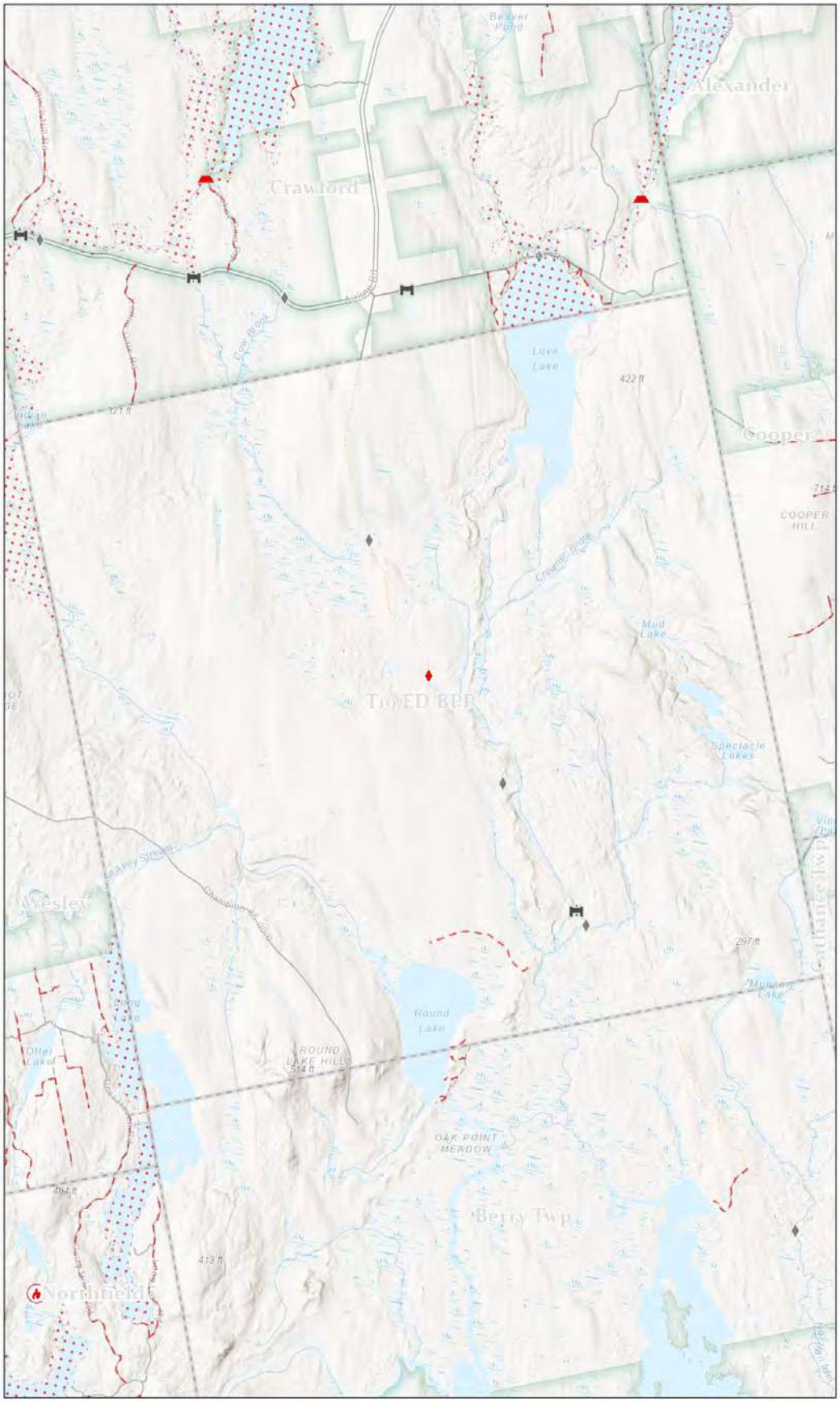
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: T19 ED BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

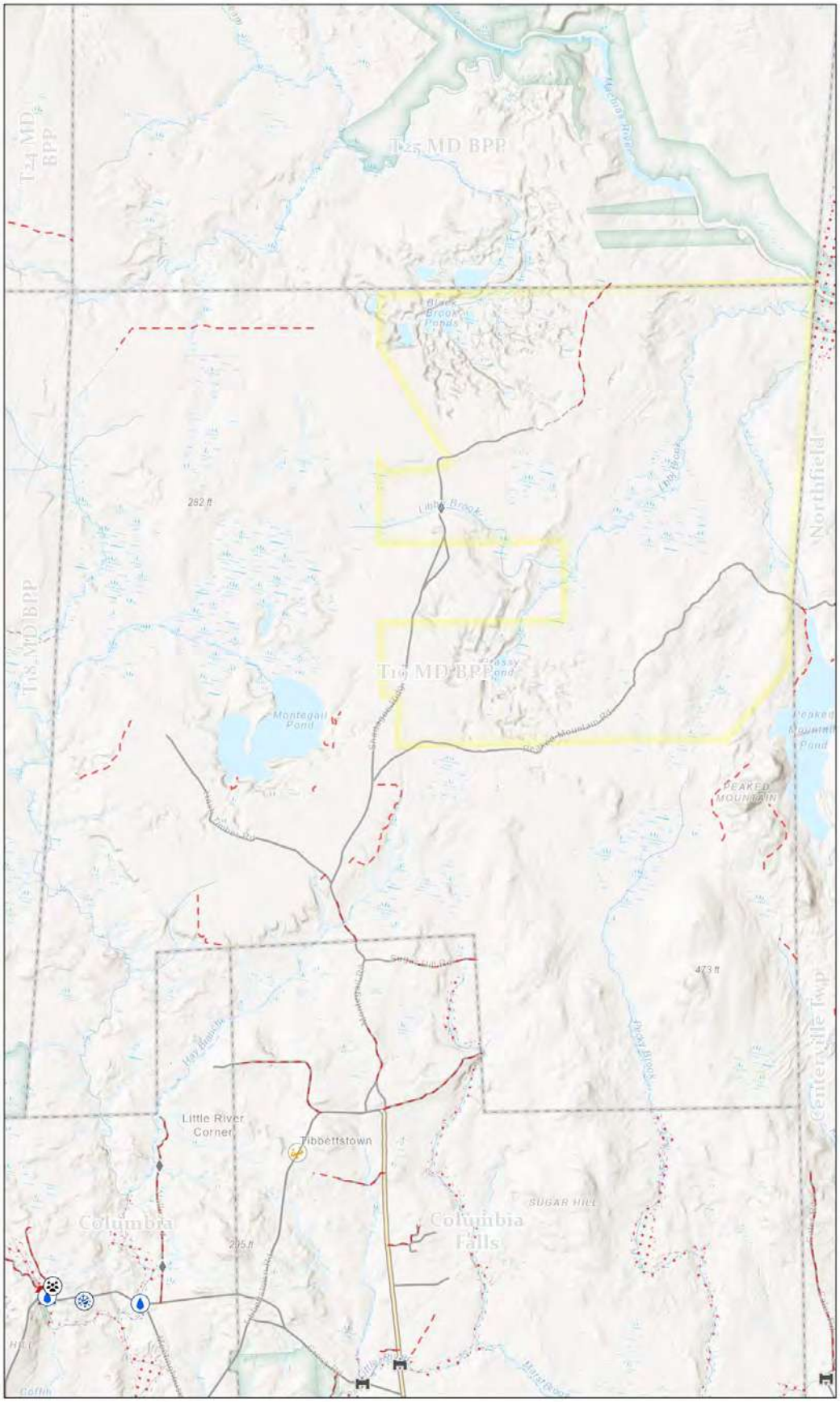
Important Features

- Conserved Lands

Hazard Mitigation Plan Map: T19 MD BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

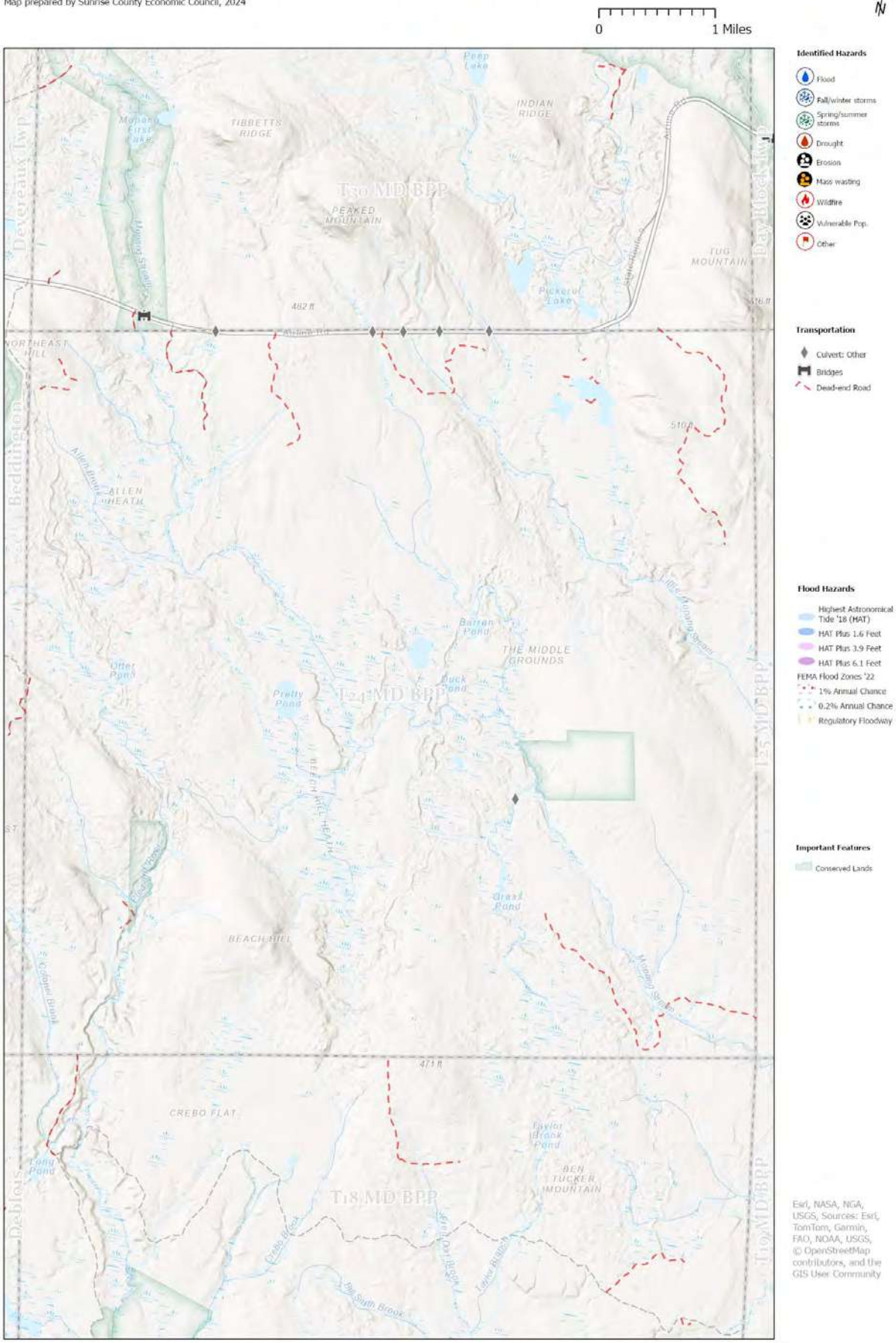
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Childcare Providers
- Conserved Lands
- Tribal Areas

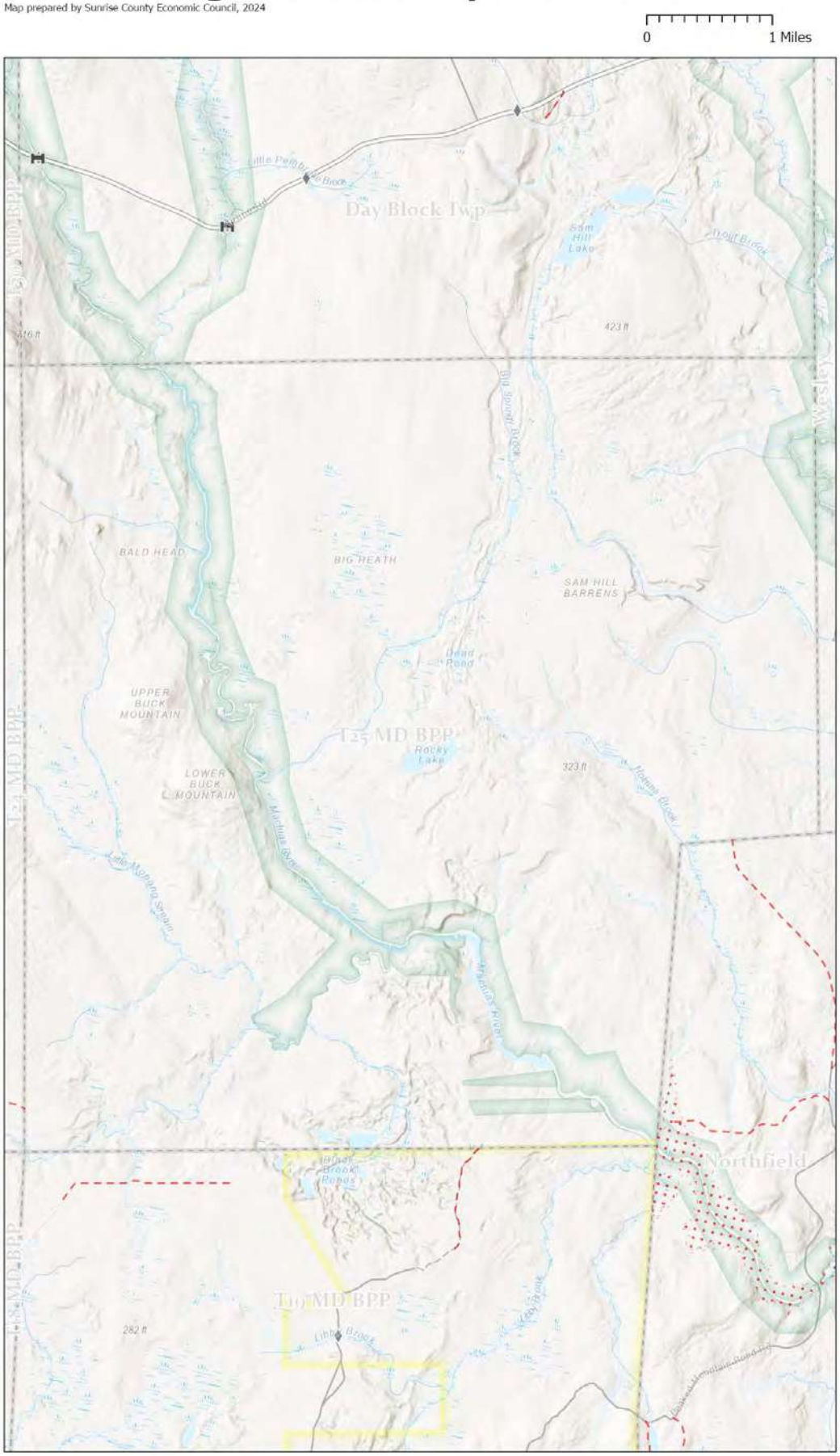
Hazard Mitigation Plan Map: T24 MD BPP

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: T25 MD BPP

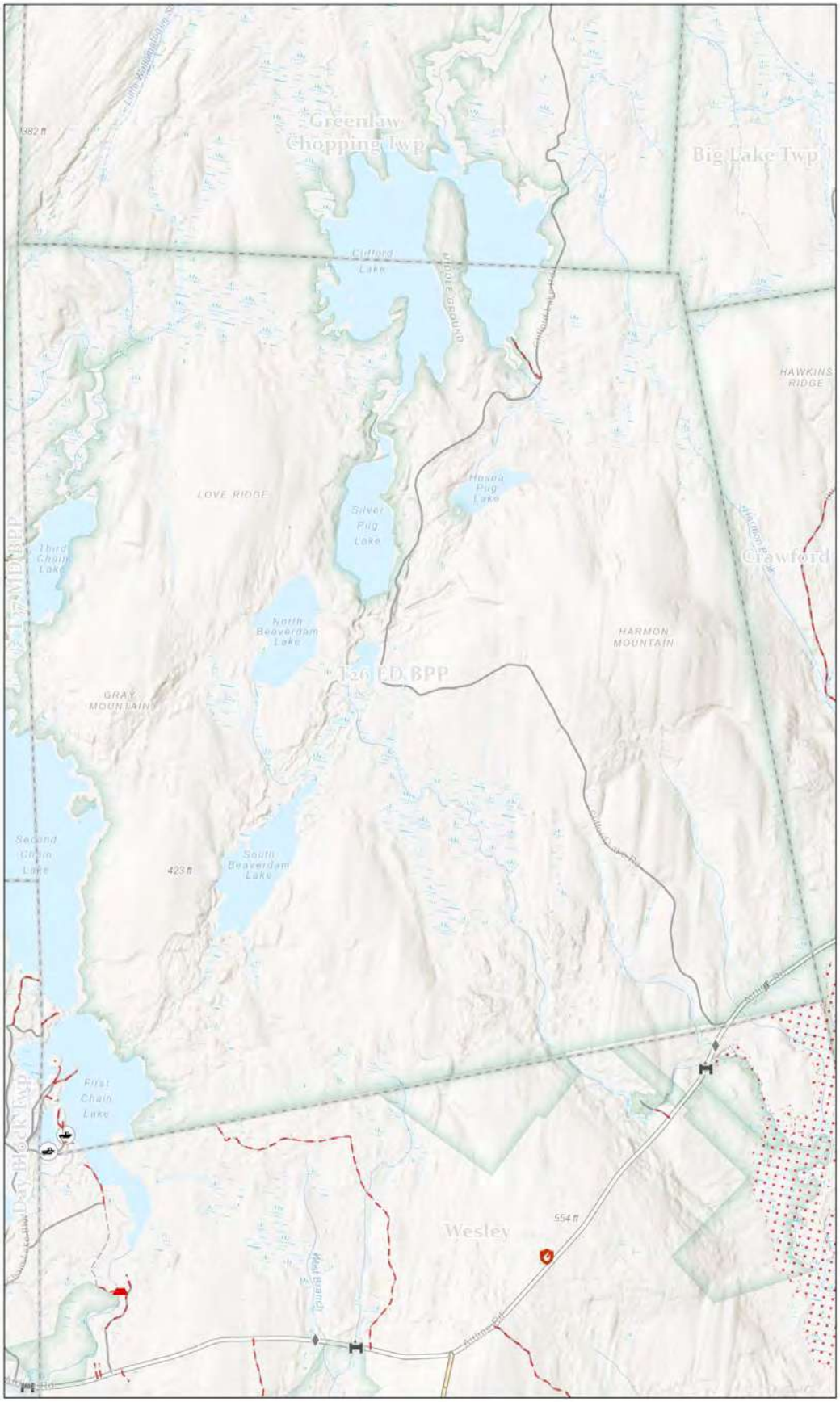
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: T26 ED BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: T30 MD BPP

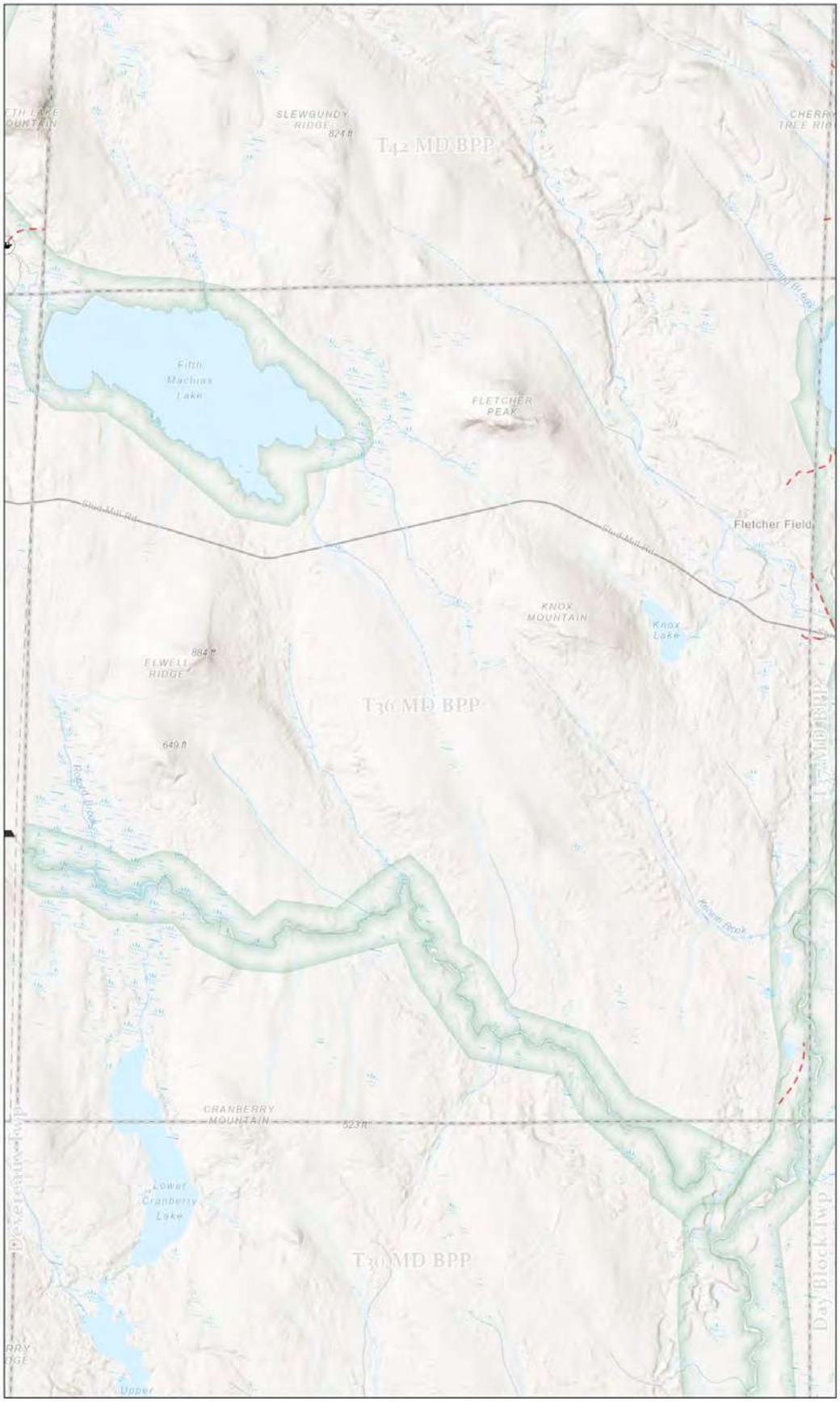
Map prepared by Sunrise County Economic Council, 2024

0 1 Miles

Hazard Mitigation Plan Map: T36 MD BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

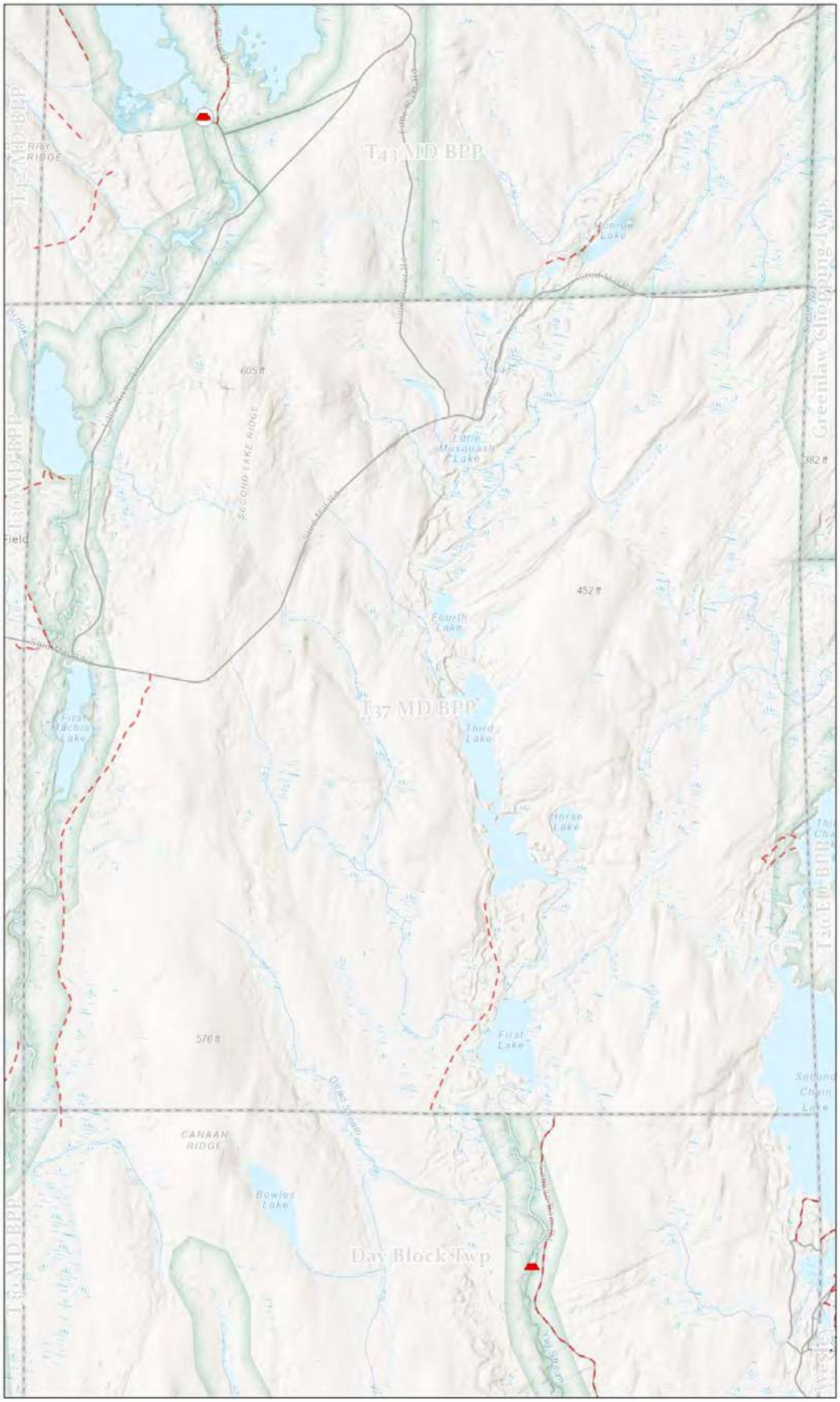
Important Features

- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: T37 MD BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Boat Launches
- Conserved Lands

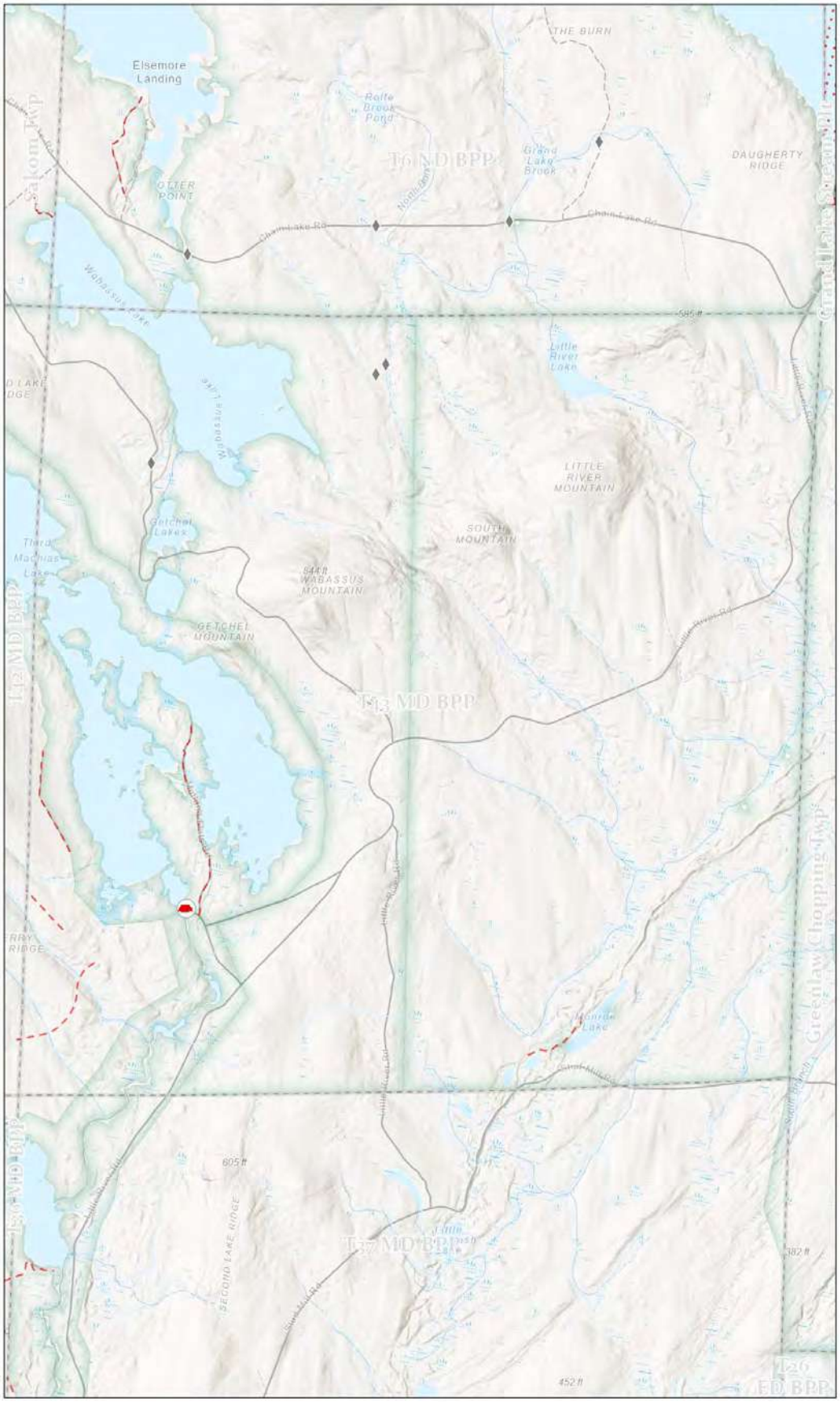
Hazard Mitigation Plan Map: T42 MD BPP

Map prepared by Sunrise County Economic Council, 2024

Hazard Mitigation Plan Map: T43 MD BPP

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Other
- EMA WaCo Listed Dams
- Dead-end Road

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

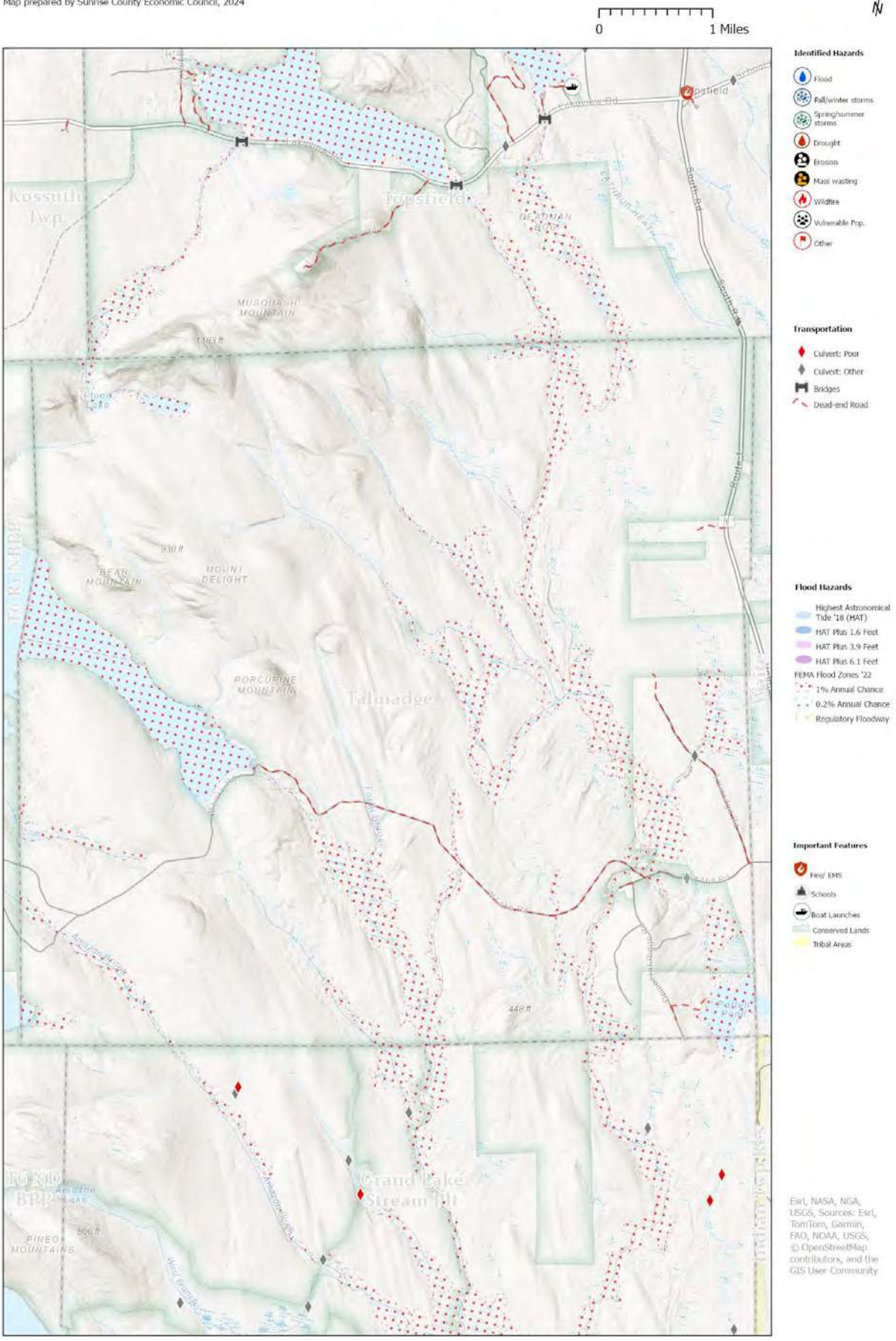
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Boat Launches
- Conserved Lands

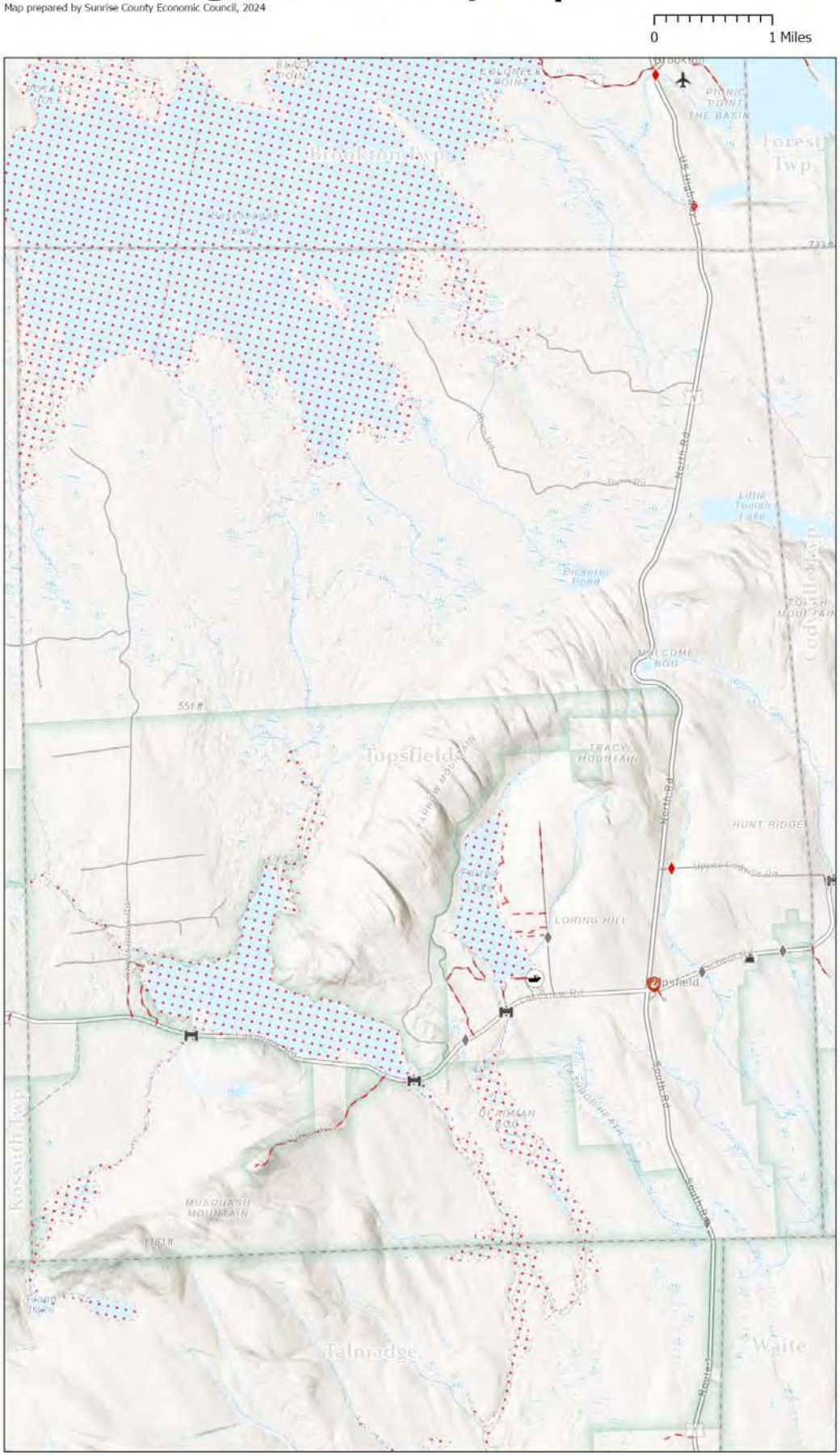
Hazard Mitigation Plan Map: Talmadge

Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Topsfield

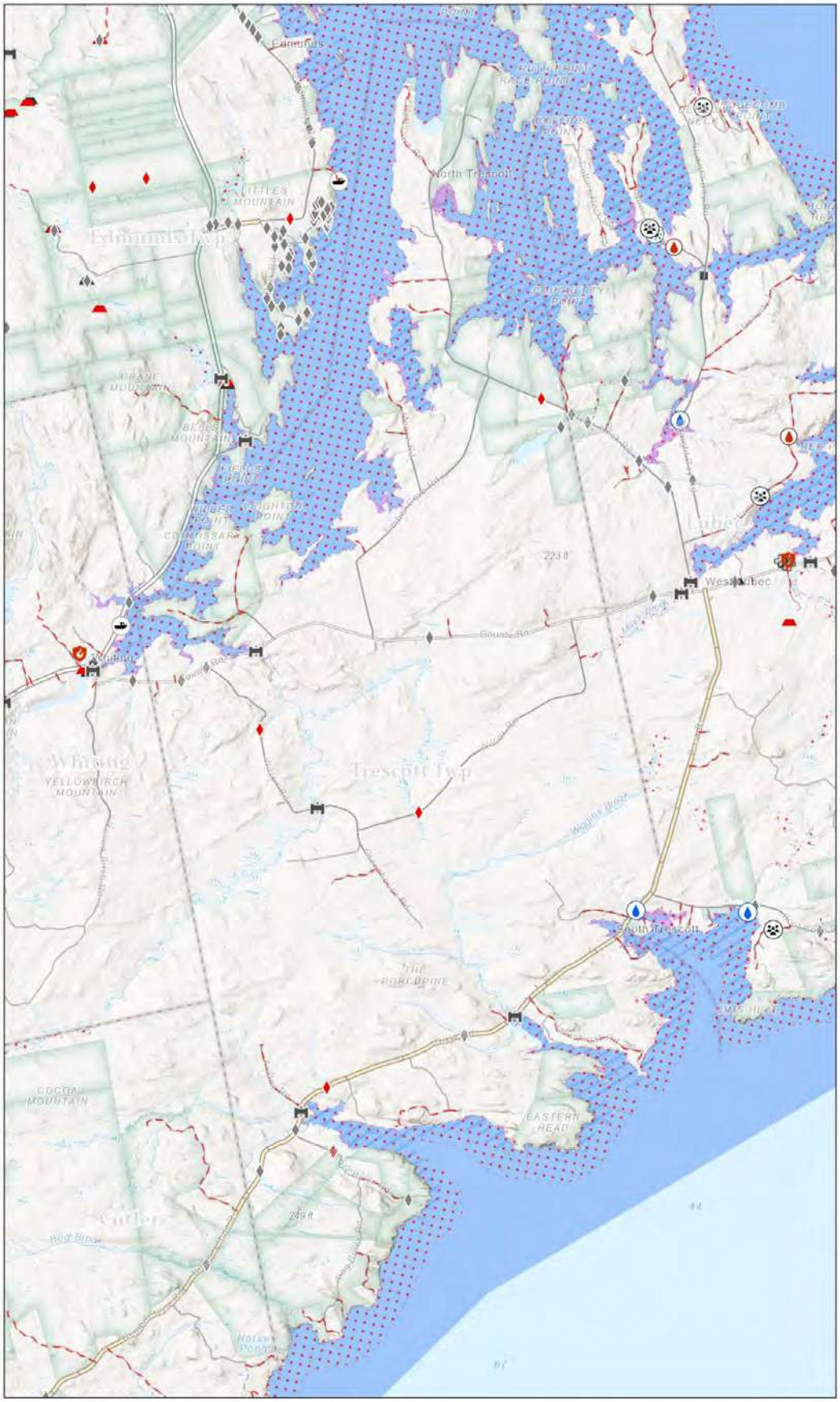
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Trescott Twp

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

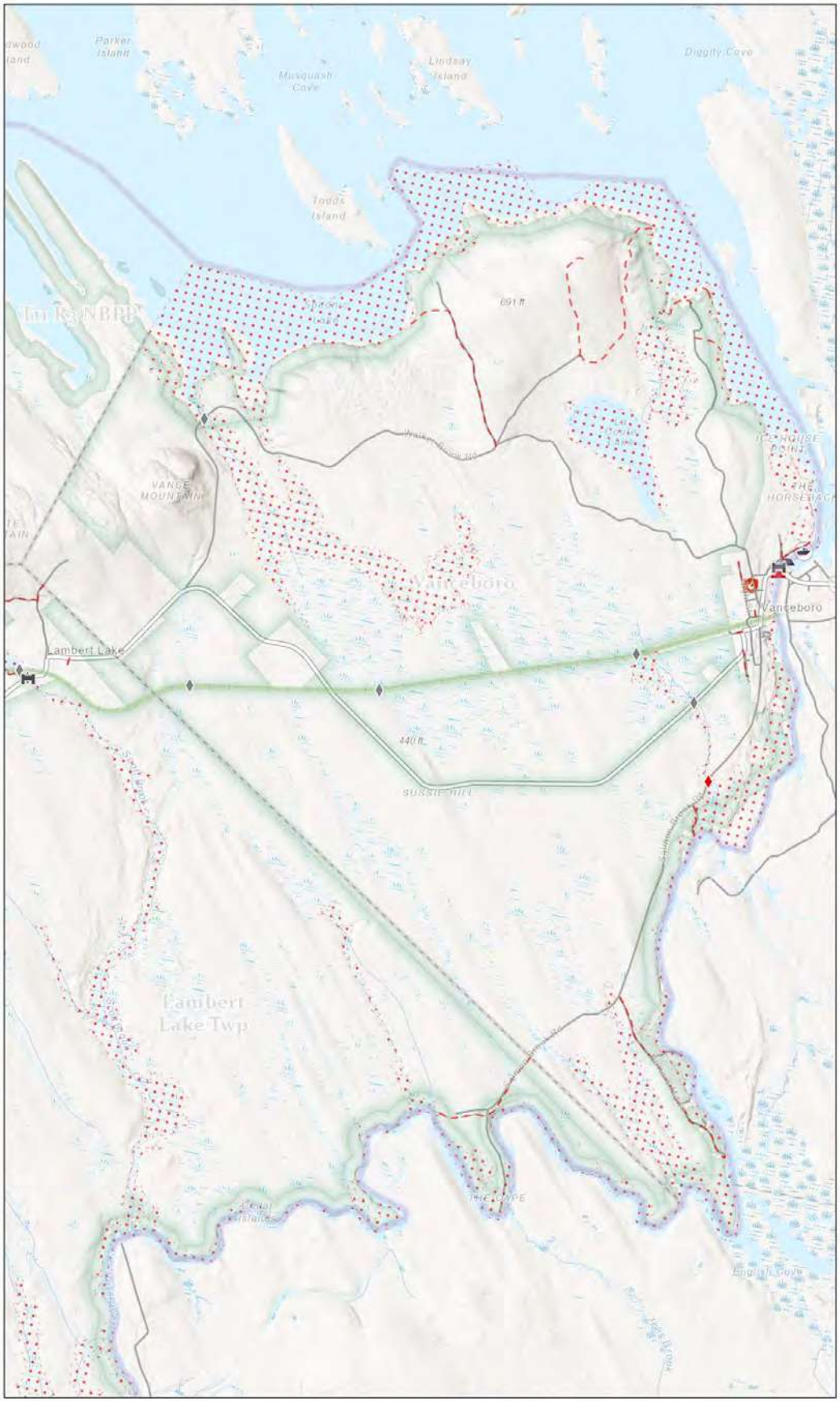
Important Features

- Fire/ EMS
- Nursing/Asst Living
- Schools
- Boat Launches
- **Fishing Critical Infrastructure**
- Clam Mudflats
- Conserved Lands

Hazard Mitigation Plan Map: Vanceboro

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

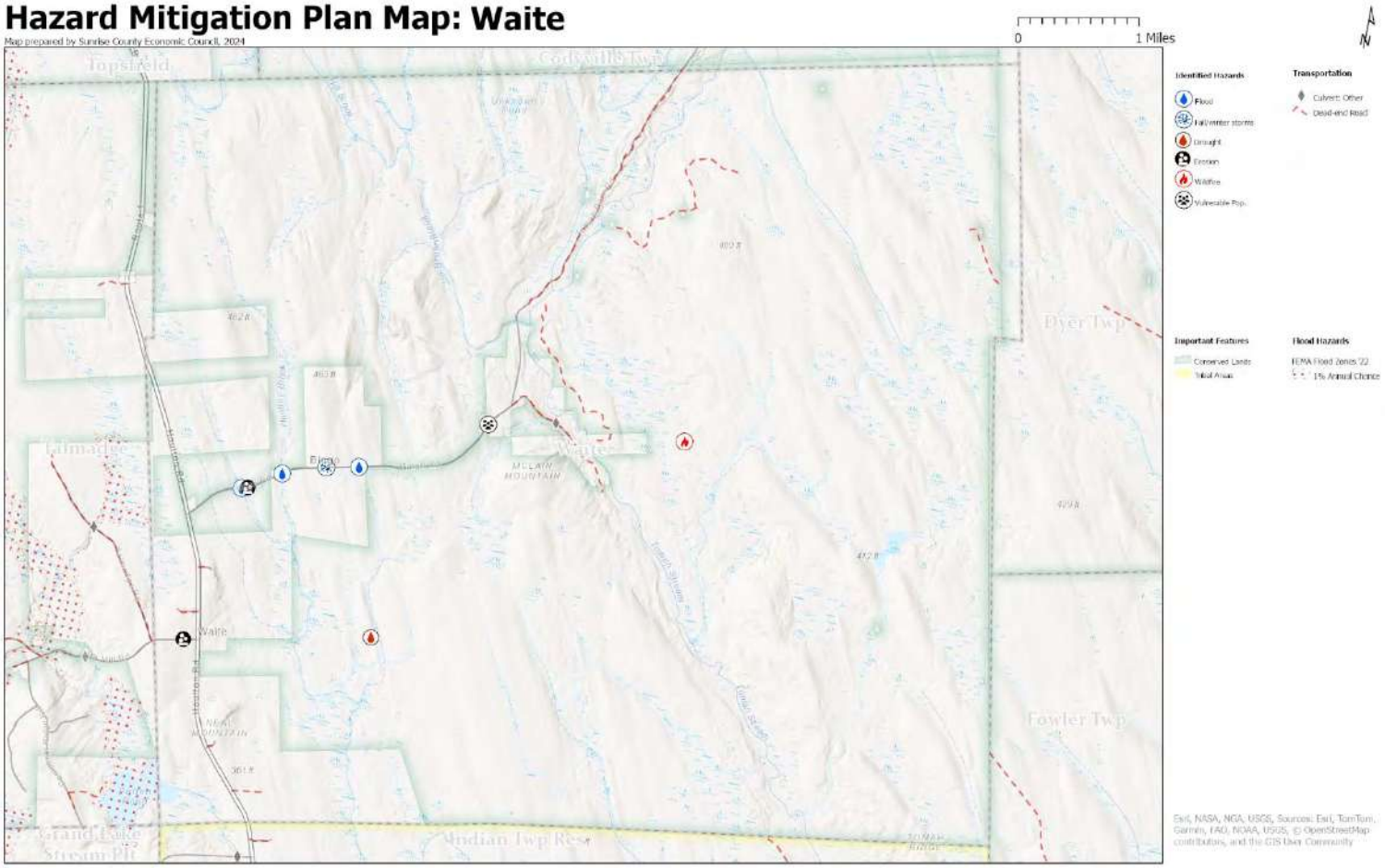
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Waite

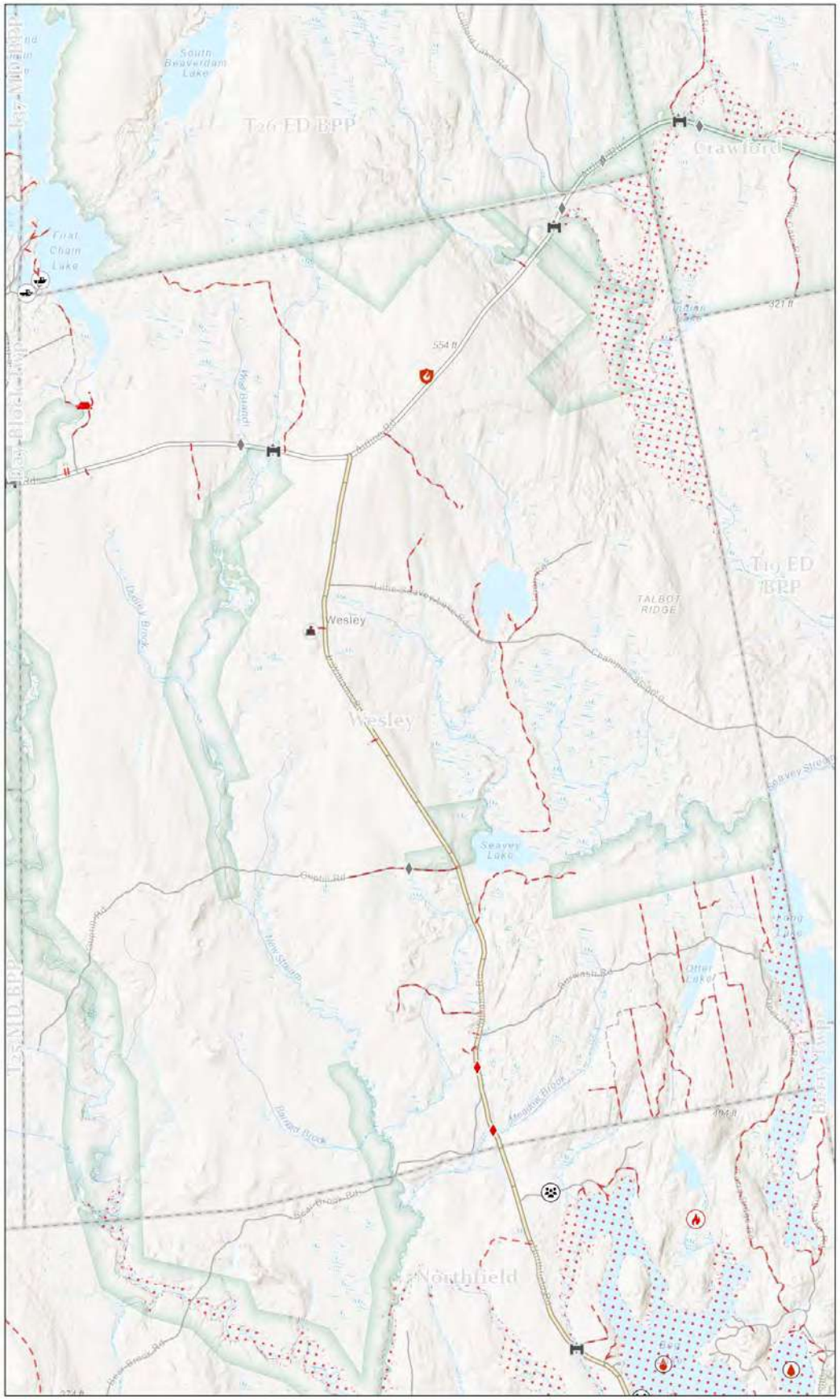
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Wesley

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Dead-end Road
- State Aid Roads

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

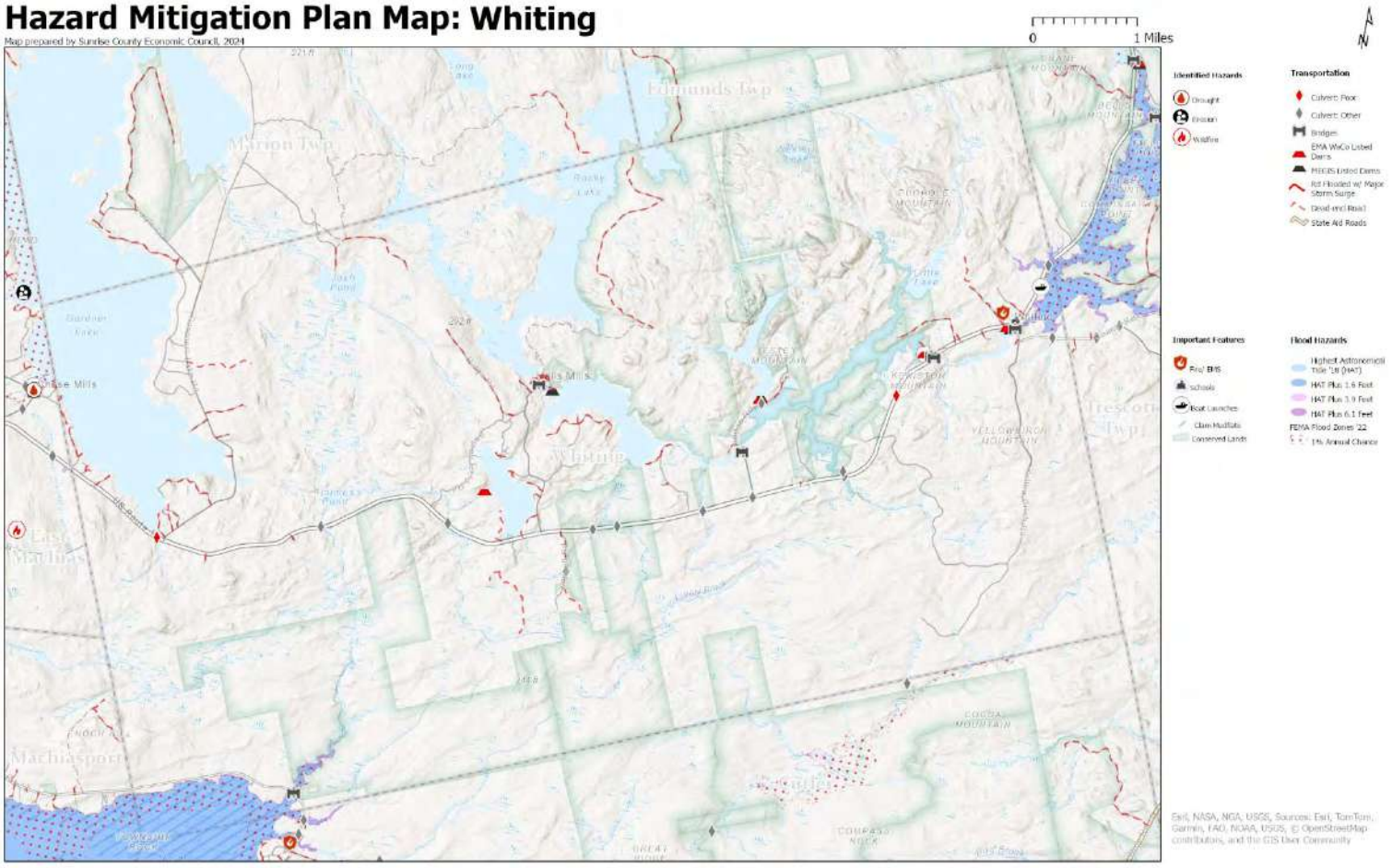
- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Fire/ EMS
- Schools
- Boat Launches
- Conserved Lands

Hazard Mitigation Plan Map: Whiting

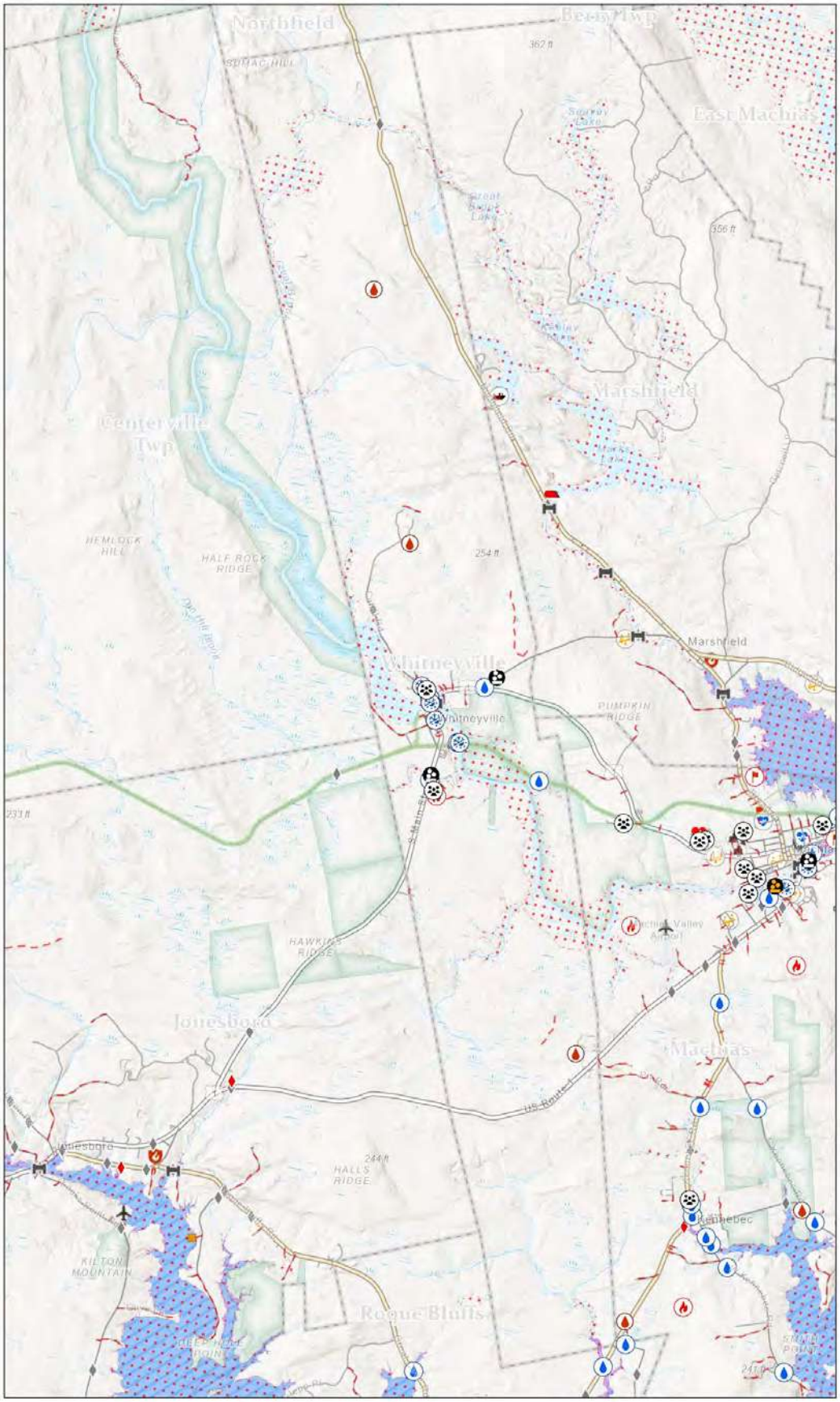
Map prepared by Sunrise County Economic Council, 2024



Hazard Mitigation Plan Map: Whitneyville

Map prepared by Sunrise County Economic Council, 2024

0 1 Miles



Identified Hazards

- Flood
- Fall/winter storms
- Spring/summer storms
- Drought
- Erosion
- Mass wasting
- Wildfire
- Vulnerable Pop.
- Other

Transportation

- Culvert: Poor
- Culvert: Other
- Bridges
- EMA WaCo Listed Dams
- MEGIS Listed Dams
- Rd Flooded w/ Major Storm Surge
- Dead-end Road
- State Aid Roads
- Sunrise Trail/ Rail

Flood Hazards

- Highest Astronomical Tide '18 (HAT)
- HAT Plus 1.6 Feet
- HAT Plus 3.9 Feet
- HAT Plus 6.1 Feet

FEMA Flood Zones '22

- 1% Annual Chance
- 0.2% Annual Chance
- Regulatory Floodway

Important Features

- Ambulance
- Fire/ EMS
- Hospitals
- Nursing/Asst Living
- Childcare Providers
- Schools
- Correctional Facilities
- Boat Launches
- Fish Wharf- Poor Condition
- Airports
- Clam Mudflats
- Conserved Lands