# *2017*
# *Multi-Jurisdictional*
# *HAZARD MITIGATION PLAN*
# *For Select Municipalities in*
# *WALDO COUNTY, MAINE*

January 2017

Waldo County Emergency Management Agency
4 Public Safety Way, Belfast, ME 04915

# WALDO COUNTY HAZARD MITIGATION PLAN

## TABLE OF CONTENTS


Section1. Introduction ..... 1-1

Municipal Populations (2010) ..... 1-2

County Demographic Profile ..... 1-3

County Map ..... 1-4

Section 2. Prerequisites ..... 2-1

Multi –Jurisdictional Plan Adoption ..... 2-1

Section 3. Planning Process ..... 3-1

Multi-Jurisdictional Planning Participation ..... 3-1

Documentation of the Planning Process ..... 3-3

Section 4. Risk Assessment ..... 4-1

Identifying Hazards ..... 4-2

Profiling Hazards ..... 4-6

County Base Maps ..... 4-8

Municipal Base Maps ..... 4-10

Assessing Vulnerability: Overview ..... 4-11

Assessing Vulnerability: Addressing Repetitive Loss Prop ..... 4-12

Assessing Vulnerability: Identifying Structures ..... 4-13

Assessing Vulnerability: Estimating Potential Losses ..... 4-15

Assessing Vulnerability: Analyzing Development Trends ..... 4-21

Multi-Jurisdictional Risk Assessment ..... 4-23

Section 5. Mitigation Strategy ..... 5-1

Local Hazard Mitigation Goals ..... 5-2

Identification and Analysis of Mitigation Actions ..... 5-4

Implementation and Administration ..... 5-6

Status of Mitigation Actions from the 2011 Plan ..... 5-8

Section 6. Plan Maintenance Process ..... 6-1

Monitoring, Evaluating, and Updating the Plan ..... 6-2

Incorporation into Existing Planning Mechanisms ..... 6-3

Continued Public Involvement ..... 6-4

Appendix

Rosters of Mitigation Planning Meetings

# WALDO COUNTY HAZARD MITIGATION PLAN

## SECTION 1 - INTRODUCTION

Understanding that the Local Mitigation Plan requirements in §201.6 of the Interim Final Rule applies to local jurisdictions, the County of Waldo, State of Maine decided to complete a multi-jurisdictional mitigation plan, beginning in 2002, to include and incorporate each of its member towns. This was due to the majority of these communities being too small to complete such an undertaking on their own. The county-wide mitigation planning effort encouraged agencies at all levels, local 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 these various stakeholders and reflects the needs of the county-wide community.

The Disaster Mitigation Act (DMA) of 2000 specifically required mitigation planning for natural hazards. It does not require mitigation planning for man-made hazards. The prior versions of the Waldo County Hazard Mitigation Plan were developed solely for natural hazards. The current Waldo County Hazard Mitigation Planning Team decided to continue to assess only natural hazards for this version of the Plan.

The Waldo County Hazard Mitigation Plan includes the following sections:

- Prerequisites
- Planning Process
- Risk Assessment
- Mitigation Strategy
- Plan Maintenance Process

Waldo County in the State of Maine, combines the scenic beauty of the rugged Maine coast with the lush forests and farmlands of the inland hills, yielding harvests both cultivated and wild.

The County consists of 39,051 residents (Census 2014 population estimate) living in 21,566 households (Census 2000). The County contains 852.76 square miles, 729.92 square miles of land and 122.84 square miles of water. This derives a population density of 53.1 people per square mile. There are no U.S. Census designated Metropolitan areas in the County. 16.4% of residents are considered below poverty. Age distribution from the census indicate that 5.6% of residents are under 5 years of age; 24.2% are under 18 years of age; and 13.6% are over 65 years of age.

There are twenty-five incorporated towns and one incorporated city, which is the county seat of Waldo County. The County government contains the County Sheriff's Office, County Jail, County Clerk's Office, County Treasurer's Office, Registrar of Deeds, Probate Judge, Assistant District Attorney, and the Emergency Management Office. The municipalities are responsible for Tax Collection, Clerk's Office, Road Maintenance and Snow Removal, Refuse Collection, Land Use Planning, Code Enforcement, Animal Control, Fire Protection, and Cemetery Maintenance.

The ten largest employers in the County are Athenahealth, Bank of America, Waldo County General Hospital, Sweetser, Unity College, Penobscot-McCrum Frozen Foods, Hannaford, Pride Manufacturing, Duck Trap River Fish Farm, and Matthews Brothers.

**MUNICIPAL POPULATIONS (2010 CENSUS)**

| Town/City | Year Round Population | Median Age | Density | Total Homes | Occup Homes | House hold Density |
|---|---|---|---|---|---|---|
| Belfast | 6,668 | 46.9 | 194.0 | 3,582 | 3,049 | 2.19 |
| Belmont | 942 | 44.8 | 66.4 | 462 | 405 | 2.32 |
| Brooks | 1,078 | 38.6 | 42.5 | 562 | 446 | 2.42 |
| Burnham | 1,164 | 43.3 | 28.3 | 714 | 502 | 2.32 |
| Frankfort | 1,124 | 41.6 | 45.2 | 537 | 452 | 2.49 |
| Freedom | 719 | 44.7 | 32.4 | 343 | 292 | 2.46 |
| Islesboro | 566 | 52.1 | 39.6 | 850 | 270 | 2.09 |
| Jackson | 546 | 44.6 | 21.5 | 272 | 237 | 2.30 |
| Knox | 806 | 39.6 | 27.7 | 382 | 313 | 2.57 |
| Liberty | 913 | 47.2 | 32.2 | 718 | 395 | 2.28 |
| Lincolnville | 2,164 | 47.5 | 55.1 | 1,465 | 959 | 2.26 |
| Monroe | 890 | 47.5 | 22.8 | 461 | 402 | 2.21 |
| Montville | 1,032 | 43.6 | 23.9 | 553 | 433 | 2.38 |
| Morrill | 884 | 40.9 | 51.9 | 379 | 337 | 2.62 |
| Northport | 1,520 | 47.8 | 62.7 | 1,162 | 681 | 2.23 |
| Palermo | 1,535 | 43.8 | 35.3 | 975 | 623 | 2.46 |
| Prospect | 709 | 44.3 | 39.0 | 357 | 291 | 2.43 |
| Searsmont | 1,392 | 41.0 | 35.6 | 741 | 577 | 2.41 |
| Searsport | 2,615 | 46.9 | 89.0 | 1,510 | 1,186 | 2.20 |
| Stockton Springs | 1,591 | 49.9 | 81.1 | 939 | 694 | 2.29 |
| Swanville | 1,388 | 40.2 | 64.2 | 793 | 558 | 2.49 |
| Thorndike | 890 | 38.0 | 35.3 | 396 | 330 | 2.69 |
| Troy | 1,030 | 43.1 | 28.7 | 476 | 414 | 2.48 |
| Unity | 2,099 | 31.2 | 50.8 | 939 | 750 | 2.80 |
| Waldo | 762 | 42.9 | 39.5 | 373 | 332 | 2.30 |
| Winterport | 3,757 | 41.5 | 105.7 | 1,645 | 1,503 | 2.50 |
| TOTAL | 38,786 | 44.1 | 51.7 | 21,566 | 16,431 | 2.36 |

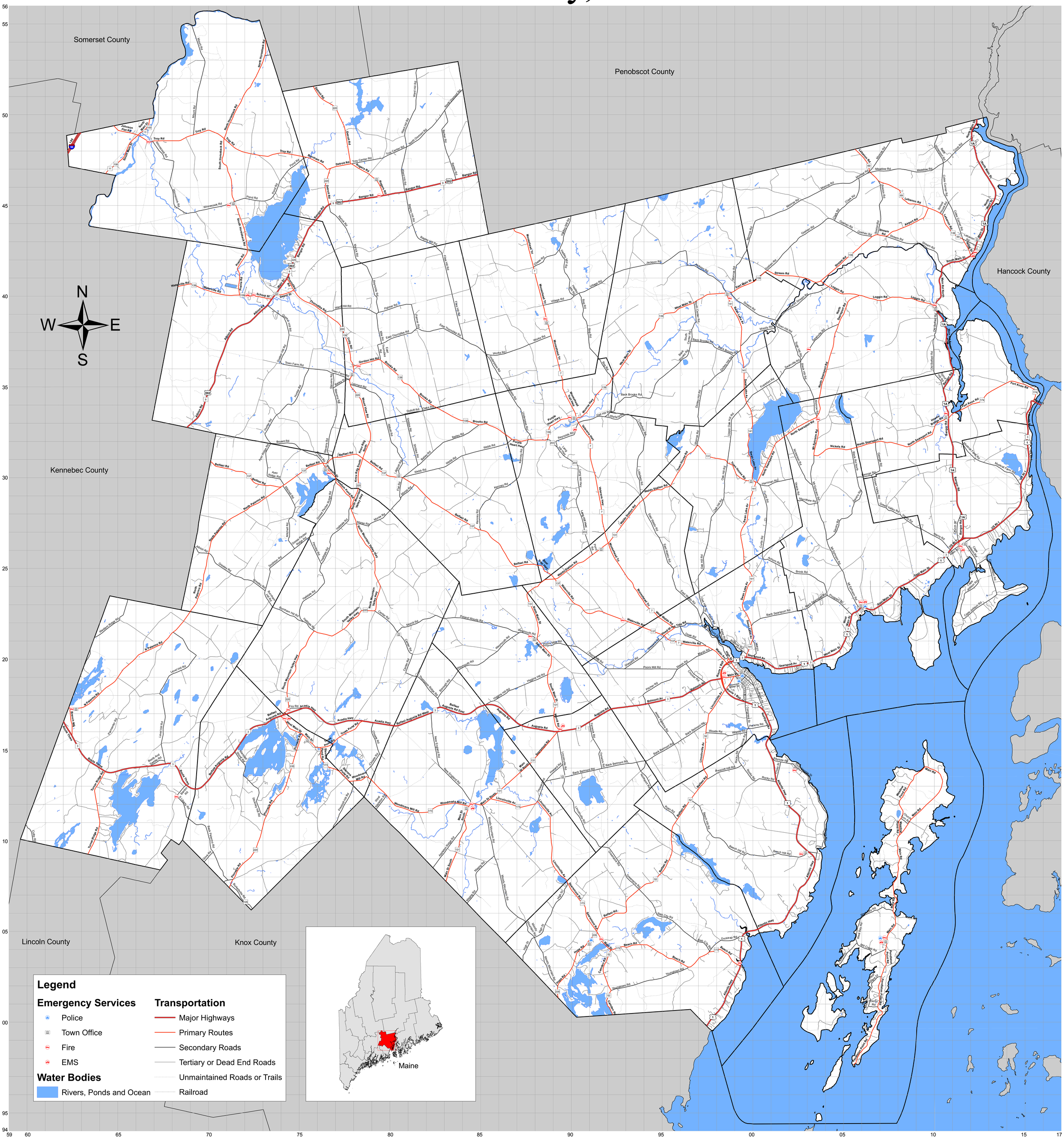
The overall 10-year census trend for Waldo County is a slow population growth of 6.9%, with the median age increasing 12.2%. The household density decreased by 4.19%. The number of total homes increased by 11.6%, however much of this was due to the increase of seasonal homes which increased by 19.6%.

In general, the residents of Waldo County are getting older and the households are getting smaller. The percentage of children as a whole is shrinking, however, the poverty rate among households with children is increasing.

**COUNTY DEMOGRAPHIC PROFILE - Waldo County, State of Maine**

| Measure | 2010 Waldo | 2000 Waldo | 2010 Maine | 2010 USA |
|---|---|---|---|---|
| **Population** | | | | |
| Total Population | 38,786 | 36,280 | 1,328,361 | 308,745,538 |
| % White | 97.1 | 97.9 | 95.2 | 72.4 |
| % of Hispanic Origin | 0.9 | 0.6 | 1.3 | 16.3 |
| % Black | 0.4 | 0.2 | 1.2 | 12.6 |
| % American Indian | 0.4 | 0.4 | 0.6 | 0.9 |
| % Asian | 0.4 | 0.2 | 1.0 | 4.8 |
| **Households** | | | | |
| Total Households | 16,431 | 14,726 | 557,219 | 116,716,292 |
| Household Units | 21,566 | 18,904 | 721,830 | 131,704,730 |
| Avg. Household Size | 2.36 | 2.43 | 2.32 | 2.58 |
| **Income** | | | | |
| Median Household Income ($) | 41,312 | 33,986 | 46,933 | 51,914 |
| Persons below poverty, % | 14.6 | 13.9 | 12.6 | 13.8 |
| Children below poverty, % | 20.9 | 18.6 | 17.0 | 19.2 |
| **Sex and Age** | | | | |
| Median Age, Total Population | 44.1 | 39.3 | 42.7 | 37.2 |
| % Female | 51.0 | 50.9 | 51.1 | 50.8 |
| % Male | 49.0 | 49.1 | 48.9 | 49.2 |
| % Under 5 Years | 5.3 | 5.6 | 5.2 | 6.5 |
| % 18 Years and over | 79.0 | 75.8 | 79.3 | 76.0 |
| % 65 Years and over | 16.2 | 13.6 | 15.9 | 13.0 |
| Population Density (sq. mi.) | 51.7 | 49.7 | 41.3 | 84 |

# Road Map
# Waldo County, Maine




US National Grid Zone: 19T
100,000m Square ID: DJ, DK, EJ, EK

Map created by Jake Weisberg for the Waldo County Emergency Management Agency.
Data sourced from the Maine office of GIS, DeLorme Maine Atlas and Gazetteer, and local knowledge.
This version published 7-3-2009

# WALDO COUNTY HAZARD MITIGATION PLAN

## SECTION 2 - PREREQUISITES
## 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. The updated plan indicates the specific jurisdictions represented in the plan.** |
| | **B. The local governing body of each jurisdiction has adopted the updated plan.** |
| | **C. Supporting documentation (resolution) is included for each participating jurisdiction.** |

Note: Not all municipalities decided to participate in this 2017 version of the multi-jurisdictional plan.

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Waldo County Commissioners hereby adopt the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

Betty J. John — 2-1-2017
Commissioner, Waldo County — Date

Wm. D Shorey — 2-1-2017
Commissioner, Waldo County — Date

Amy R Fowler — 2-1-2017
Commissioner, Waldo County — Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Freedom hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

| | |
|---|---|
| Selectman, Freedom | 1/23/2017 Date |
| Selectman, Freedom | 1/23/2017 Date |
| Selectman, Freedom | 01.23.2017 Date |

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Knox hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

Galen D. Larrabee 1/24/17
Selectman, Knox Date

1-24-17
Selectman, Knox Date

1/24/17
Selectman, Knox Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Liberty hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

1-30-17
Selectman, Liberty — Date

1-3017
Selectman, Liberty — Date

1/30/17
Selectman, Liberty — Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Lincolnville hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

| | |
|---|---|
| Selectman, Lincolnville | Date 2.17.17 |
| Selectman, Lincolnville | Date 2/17/17 |
| Selectman, Lincolnville | Date 2/17/17 |
| Selectman, Lincolnville | Date 2/17/17 |
| Selectman, Lincolnville | Date 2/17/17 |

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Montville hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

| | |
|---|---|
| _____ | 1/23/2017 |
| Selectman, Montville | Date |
| _____ | 1/23/2017 |
| Selectman, Montville | Date |
| Robert A. Price | 1/23/2017 |
| Selectman, Montville | Date |

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Northport hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

_____ 2/20/17
Selectman, Northport Date

_____ 1/25/17
Selectman, Northport Date

_____ 1.25.2017
Selectman, Northport Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Palermo hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

H. Dean Potter 2-2-2017
Selectman, Palermo Date

2/2/17
Selectman, Palermo Date

Cheryl York 2/2/17
Selectman, Palermo Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Prospect hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

Diane Terry 2/7/17
Selectman, Prospect Date

William A. Sweet Jr 2/7/2017
Selectman, Prospect Date

Selectman, Prospect Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Searsmont hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

Bruce E Brierley 4/11/17
Selectman, Searsmont Date

Donald Corcoran 4/11/17
Selectman, Searsmont Date

Stephen S Staples 4-11-17
Selectman, Searsmont Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Searsport hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

| | |
|---|---|
| _____ | 3-21-17 |
| Selectman, Searsport | Date |
| _____ | 3-21-17 |
| Selectman, Searsport | Date |
| _____ | 3-21-17 |
| Selectman, Searsport | Date |
| _____ | 3-22-17 |
| Selectman, Searsport | Date |
| _____ | 3-21-17 |
| Selectman, Searsport | Date |

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Selectmen of the Town of Unity hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

4/5/17
Selectman, Unity — Date

4-5-17
Selectman, Unity — Date

4-5-17
Selectman, Unity — Date

# WALDO COUNTY HAZARD MITIGATION PLAN

RESOLUTION

Whereas natural disasters may occur at any time, we recognize that to lessen the impacts of these disasters, we will save lives, property and the environment in Waldo County;

And whereas the revision of the County Hazard Mitigation Plan is necessary for the development of a risk assessment and effective mitigation strategy;

And whereas the municipalities of Waldo County are committed to the mitigation goals and measures as presented in this plan;

Therefore, the Board of Councilors of the Town of Winterport hereby adopts the 2017 Waldo County Hazard Mitigation Plan.

AUTHORIZING SIGNATURES

| | |
|---|---|
| Councilor, Winterport | Date 1/31/17 |
| Councilor, Winterport | Date 1-31-17 |
| Councilor, Winterport | Date 1-31-17 |
| Councilor, Winterport | Date 1-31-17 |
| Councilor, Winterport | Date |

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# WALDO COUNTY HAZARD MITIGATION PLAN

## SECTION 3 - PLANNING PROCESS

### MULTI-JURISDICTIONAL PLANNING PARTICIPATION

| | |
|---|---|
| **Requirement §201.6(a)(3)** | **Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.** |

The Waldo County Hazard Mitigation Plan is a multi-jurisdictional plan and has been prepared by a Hazard Mitigation Planning Team hosted by the Waldo County Emergency Management Agency with representatives from the county and municipal governments. The Planning Team also met or spoke with representatives of each of the 26 municipalities, the private sector, and individual residents to collect their comments and recommendations on the identification of hazards, assessment of vulnerabilities and risks, and the determination of mitigation goals and measures.

**The Hazard Mitigation Planning Team consisted of the following representatives:**

| | | |
|---|---|---|
| Dale Rowley | County of Waldo | EMA Director |
| Christine Spaulding | Town of Freedom | EMA Director |
| Matthew Shaw | Town of Knox | EMA Director, Fire Chief, EMS Officer |
| Galen Larrabee | Town of Knox | Selectperson |
| Elise Brown | Town of Liberty | EMA Director |
| Warren Steeves | Town of Liberty | Selectperson |
| Hank Lang | Town of Lincolnville | EMA Director |
| John York | Town of Montville | EMA Director, Fire Chief |
| Robert Price | Town of Montville | Selectperson |
| Peter Simpson | Town of Northport | EMA Director, Deputy Fire Chief |
| Barbara Ashey | Town of Northport | Town Administrator |
| Cheryl York | Town of Palermo | EMA Director |
| Tim Terry | Town of Prospect | EMA Director, Fire Chief |
| Diane Terry | Town of Prospect | Selectperson |
| James Ames | Town of Searsmont | EMA Director, Fire Chief |
| Almon Rivers | Town of Searsport | EMA Director |
| Nicholas Brancato | Town of Unity | EMA Director |
| Emily Newell | Town of Unity | Selectperson |
| Thomas Doe | Town of Winterport | EMA Director, Fire Chief |

Every municipality in Waldo County, who were included in the Plan, had at least one member who attended at least one of the County Hazard Mitigation Planning Team meetings. Additionally, other county and municipal officials participated through the collection of data involving land use planning, capitol improvement plans, roadway information, and damage information from past disaster events. Every municipality, included in the Plan, participated in the development and selection of their community's Mitigation Measures.

**Documentation of local participation**

Waldo County held all its planning meetings as open forums. Notices were sent to municipal town offices; press releases sent to the local newspaper; and updates to the County EMA website were utilized to advertise and explain the mitigation planning process to the public. The Team included opportunities for the public and our neighboring counties to comment on the plan during all stages of its formation. The Planning Team reviewed the existing County Hazard Mitigation Plan, existing county and municipal emergency plans and incorporated information, as appropriate. Sign in sheets were completed for all meetings.

**Status of Local Participation**

In 2004, all 26 municipalities in Waldo County participated and approved the original County Hazard Mitigation Plan. All 26 municipalities in Waldo County participated and approved the revised County Hazard Mitigation Plan completed in 2009. However, not all 26 municipalities decided to participate in the update for 2016. The County EMA office attempted to communicate with all town officials through e-mails, telephone calls, and faxes and with each municipal EMA office regarding the Hazard Mitigation planning efforts. The County EMA office assumes that the towns who decided no longer saw any benefit in the Hazard Mitigation Planning process. No reasons were given for the noninvolvement. The Planning Team decided to continue on with the planning process for those municipalities who did decide to be involved.

## DOCUMENTATION OF THE PLANNING PROCES

| | |
|---|---|
| **Requirement §201.6(b)** | **In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:<br>(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;<br>(2) 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; and<br>(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.** |
| **§201.6(c)(1)** | **The plan shall document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.** |

### A. Narrative Description

The planning process included a series of meetings for local officials, augmented by follow-up e-mail messaging and various phone calls.

On Tuesday, August 26, 2014, the Waldo County Hazard Mitigation Planning Team met for the first time to review the steps for the revision of the County Hazard Mitigation Plan.

On Thursday, April 9, 2015 Waldo County EMA hosted a public officials workshop to explain the Hazard Mitigation Planning process.

On Thursday, June 11, 2015, the Waldo County Hazard Mitigation Planning Team met to review the 2011 version of the Plan.

On Thursday, August 13, 2015, the Waldo County Hazard Mitigation Planning Team met to update the County Hazard Identification and Risk Analysis. The Planning Team determined that for the revision of the plan, they would continue with the originally identified hazards of flooding, severe summer storms and severe winter storms. The Team also identified changes in public facilities and discussed new vulnerabilities.

On Thursday, September 10, 2015, the Waldo County Hazard Mitigation Planning Team met to provide updated data for the plan revision.

On Friday, November 6, 2015, the Waldo County EMA Director met with officials from the Town of Palermo to explain the Hazard Mitigation Planning process, review the sections of the 2011 version and to discuss what data will be needed for the updated plan. This information was then e-mailed to the County EMA Director.

On Wednesday, February 24, 2016, the Waldo County Hazard Mitigation Planning Team met to update the mitigation strategy and projects.

On Wednesday, June 22, 2016, the Waldo County EMA office held a public hearing to present the plan to the general public and to encourage comments. The meeting was advertised through local newspapers; e-mails were sent to every Town Office, emergency management director, fire department, public health entity, and local social service organizations' posted on the County EMA website; posted on Facebook and links on Twitter. Several members of the planning team were in attendance, however, no one from the general public attended.

After incorporating the final comments, the plan was then sent off for review by the State Mitigation Officer and by FEMA prior to the plan being formally adopted by the elected Municipal Officers and County Commissioners.

**B. People who were involved in the planning process**

Waldo County created its existing County Hazard Mitigation Plan in 2004 and updated it in 2011. The Waldo County Commissioners assigned the responsibility for the development of the original and revised hazard mitigation plans to the Waldo County Emergency Management Agency. The County EMA office formed a local hazard mitigation planning team composed of representatives from county government and from the municipal governments. This Team met on several occasions over the course of 2 years. See page 19 for the list of members.

**C. How the public was given an opportunity to be heard**

A general public meeting was held in the County EMA office on June 22, 2016 to receive comments on the final draft. These meetings were advertised in local newspapers, e-mails sent to various groups and by posting online and social media.

However, we must admit that there was very little participation from the general public, non-profits and local businesses, who basically and repeatedly expressed that they had little or no interest in the mitigation process, this project or the plan.

**D. Opportunities for additional comments**

A press release was released to the local newspaper, the Republican Journal, to advertise and explain the mitigation planning process to county residents. The Press Release included the phone number, postal address, e-mail address, and website address of the County EMA office, so that those who could not attend public forums would have a chance to voice concerns or to provide input during the planning process. See the Press Release that follows this section.

**E. Review and incorporation of existing plans and studies**

The Hazard Mitigation Planning Team was assisted in the revision of the 2011 version of the Plan by the County Emergency Management Director, who facilitated the meetings, assisted in research and outreach programs, completed GIS mapping, completed the loss estimates, and consolidated the information and comments provided by the planning team and the public. The 2013 version of the State Plan was also reviewed. The Risk Assessment portion of this plan provides a more detailed summary of plans, studies, and other materials that were used identify and document various hazards. The Hazard Identification and Risk Assessment has been incorporated into the latest version of the County Emergency Operations Plan (EOP). All information from the 2011 version of the Hazard Mitigation Plan is available for inclusion into municipal comprehensive plans.

**F. How the Planning Team reviewed and analyzed each section of the Plan and whether each section was revised**

All sections of the 2011 County Hazard Mitigation Plan were reviewed and analyzed during the development of the 2017 version of the Plan. The Maine Emergency Management Agency's "Guidelines for Preparing County Hazard Mitigation Plans" and FEMA's 2013 version of the "Local Mitigation Planning Handbook were both consulted during the revision process.

Section 1 – Introduction: Revisions incorporated new census data.

Section 2 – Prerequisites: The date 2011 was changed to 2017 on each jurisdiction's signature page.

Section 3 - Dates were updated. Information related to meeting dates and what occurred was updated.

Section 4 – Risk Assessment: A new risk assessment was completed. The hazard maps were redeveloped using updated GIS information.

Section 5 – Mitigation Strategy: The status of the original mitigation measures and new mitigation measures were included. The costs estimates were re-calculated. New Mitigation measures/projects were determined and added.

Section 6 – Plan Maintenance Process: New dates were identified for plan maintenance.

# WALDO COUNTY HAZARD MITIGATION PLAN

## PRESS RELEASE

*(Belfast, Maine) -- The Waldo County Emergency Management Agency (EMA) has initiated an effort to update the County Hazard Mitigation Plan using the guidelines as provided by the Federal Emergency Management Agency.*

*The purpose of a Hazard Mitigation Plan is to assess the County's risk to likely disasters, inventory critical infrastructure and special need populations, and develop goals and strategies to lessen the impacts of a potential disaster. Examples of disaster mitigation include floodplain management, whereby new construction in floodplains is limited, and the upgrading of storm water management systems along our roadways.*

*"An important aspect of the Hazard Mitigation Planning process is the involvement of the public in the revision of the County Plan," stressed Dale Rowley, Director of the Waldo County EMA program. "Inputs from all municipalities and all interested citizens are vital in order to make this plan work."*

*County residents, businesses, non-profit groups, and municipal officials with knowledge of past disaster events, repetitive areas of repair after storms and floods, and locations of critical facilities and utilities and special needs populations that could be impacted by a disaster are strongly encouraged to provide that information to the Hazard Mitigation Planning Team hosted by the Waldo County EMA office.*

*A Public Hearing is scheduled for Wednesday, June 22, 2016 at 6:00 pm in the County EMA office.*

*For more information, contact Dale Rowley at phone 338-3870 or by e-mail at emadirector@waldocountyme.gov . You may also visit the Waldo County Emergency Management Agency website at http://www.waldocountyme.gov/ema or write or visit the office at 4 Public Safety Way, Belfast, ME 04915.*

## SECTION 4. RISK ASSESSMENT

§201.6(c)(2) of the Rule outlines specific information that Waldo County must consider when completing the risk assessment portion of this mitigation plan. Our local risk assessments provide sufficient information to enable the jurisdiction 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 the jurisdiction along with an analysis of the jurisdiction'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 the jurisdiction 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.

This section includes the following seven subsections as follows:

- Identifying Hazards
- Profiling Hazards
- Assessing Vulnerability: Overview
- Assessing Vulnerability: Identifying Structures
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- Multi-jurisdictional Risk Assessment

## IDENTIFYING HAZARDS

| | |
|---|---|
| ***Requirement §201.6(c)(2)***(i): | **The risk assessment shall include a description of the type … of all natural hazards that can affect the jurisdiction…** |

The Waldo County Hazard Mitigation Planning Team reviewed the various natural hazards that could impact Waldo County. These hazards were identified through an extensive process that utilized input from the Hazard Mitigation Planning Team members, public input, researching past disaster declarations in the County, a review of current maps, climatology and geologic data, and a hazard identification and risk assessment completed by the Waldo County Emergency Management Agency and the Hazard Mitigation Planning Team.

The following table identifies the natural hazards to be profiled.

| Hazard | How identified | Why identified |
|---|---|---|
| Flooding | Review of FIRM Maps<br>Review of SLOSH Maps<br>Input from residents<br>Review of past disaster declarations<br>Identification of repetitive losses | Associated with the effects of spring runoff and coastal storms.<br>Several repetitive loss properties and roadways are located in the County.<br>The County contains one major river and many streams and lakes, and is located along the coast.<br>Several coastal communities experience coastal flooding during major storm events-winter and summer. |
| Severe Winter Storm Events | Review of past disaster declarations<br>Inputs from residents | Maine is frequently hit with blizzards, “Northeaster” storms, and ice storms. |
| Hurricanes, Tropical Storms and Microbursts | Review of past disaster declarations<br>Review of library historical data<br>Input from residents | The County is hit about every two decades by a hurricane or tropical storm. They are typically no greater than a Category 1.<br>There have been 3 microbursts in 10 years.<br>Flooding from these events will be discussed under the Flooding hazard. |

The primary hazard events profiled in this plan are flooding, severe summer storms/hurricanes and severe winter storm events. The results of these events are coastal and inland flooding and high winds. These three hazards (flooding, winter storms, and hurricanes) are also in line with the top three hazards identified in the 2013 State of Maine Hazard Mitigation Plan.

The following table identifies 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 "guarantee" that any of these events will not or could not occur and cause great damage. It was decided by the Waldo County Hazard Mitigation Planning Team to keep our plan simple by only profiling the top three hazards.

| | | |
|---|---|---|
| Avalanche | Review of USGS Maps | There are no mountains in the county that hold large amounts of snow which would create avalanches. |
| Blight/ Infestation | Review of State Entomological Office historical records<br>Inputs from residents<br>Risk Assessments | Though the County is heavily dependent on its agricultural production, to include forestry, farming and fishing, there are no historical records of major damage to these industries that have caused serious economic conditions. |
| Coastal Erosion | Input from State Planning Office<br>Input from NRCS<br>Input from Maine DEP<br>Input from Maine Geologic Svs | The County is undergoing residential development pressure along the coast. Coastline stabilization measures have been implemented in the past years. |
| Drought | Review of State EMA records<br>Review of NOAA records | Rainfall data doesn't show a serious problem. The drought effects have never been sufficient enough to create disaster conditions. |
| Earthquake | Review of Maine Geological Survey records | Although small Earthquakes are common in Maine, no significant damaging movement has occurred in 20,000 years. |
| Landslide | Review of Maine Geological Survey records | Landslides are not common and very little damages have occurred in Waldo County. There are some coastal erosion issues. |
| Severe Thunderstorm | Review of NWS records<br>Review of Maine EMA records | Although we frequently get severe thunderstorms, they rarely cause major widespread damage. Thunderstorms have not caused situations greater than the residential structure fire threat or local power outage. |
| Subsidence | Review of Maine Geological Survey records | There has been one known cases of subsidence in Waldo County. (Stockton Springs affecting 2 homes.) |
| Tornado | Review of NWS records | On average, 1-2 tornadoes occur in the State of Maine each year, yet there have been no loss of life or major damages in many years. |
| Wildfire | Review of Maine Forest Service records. | Much of the County is covered with forests. However, Waldo County does not have a history of large wildfires. Overall, wildfire acres burned per year have been reduced dramatically in the past 40 years. |

# WALDO COUNTY HAZARD MITIGATION PLAN

## HISTORICAL CHART OF HAZARD EVENTS IN WALDO COUNTY

The following chart is a compilation of the Waldo County Hazard Mitigation Team's research efforts to determine what disaster events have occurred in Waldo County in the last century. We found few disasters during the first half of the 20th Century. This is due in part from the poor records that were kept; the fact that there was very little development in the County before 1950; and the fact that the residents mostly lived in homes built in the 19th Century which were built to withstand winter storms and were built out of known flood areas. After 1950, people started moving in from outside the State and these people began to build in flood-prone areas and in less hardy structures.

| YEAR | MONTH | DAY | WALDO DAMAGE ESTIMATE | STATEWIDE DAMAGE ESTIMATE | TYPE OF DAMAGE | DECLARATION |
|---|---|---|---|---|---|---|
| 1954 | August | 31 | Unknown | $10,000,000 | Hurricane Carol | SBA |
| 1954 | September | 11 | Unknown | $15,000,000 | Hurricane Edna | Disaster #24 |
| 1963 | October | 29 | Unknown | Unknown | Hurricane Ginny | |
| 1969 | | | $198,479 | Unknown | Flooding | |
| 1973 | April | 24 | Unknown | $908,404 | Flooding | Prez Denied |
| 1973 | July | 1 | Unknown | Unknown | Flooding | SBA |
| 1973 | December | | Unknown | $3,000,000 | Flooding | |
| 1974 | May | 29 | $240,110 | $3,000,000 | Flooding | SBA |
| 1978 | January | 10 | Unknown | Unknown | Snow | |
| 1978 | February | 8 | Unknown | $20,693,181 | Flooding | Disaster |
| 1979 | September | 6 | Unknown | Unknown | Tropical Storm David | |
| 1980 | October | 25 | Unknown | $715,350 | Coastal Storm | SBA |
| 1985 | September | 27 | Unknown | Unknown | Hurricane Gloria | |
| 1987 | April | 1 | $180,149 | $100,000,000 | Flood of '87 | DR 788 |
| 1991 | August | 20 | Unknown | $42,000,000 | Hurricane Bob | DR 915 |
| 1992 | March | 11 | $551,479 | $3,462,787 | Flooding | DR 940 |
| 1993 | March | 14 | $85,823 | Unknown | Winter Storm | EM 3099 |
| 1993 | April | | Unknown | $3,476,507 | Flooding | DR 988 |
| 1996 | January | | $202,253 | $2,181,170 | Flooding | DR 1106 |
| 1998 | January | 13 | $2,530,680 | $47,748,466 | Ice Storm | DR 1198 |
| 2003 | December | 31 | Unknown | $2,411,750 | Flooding | DR 1508 |
| 2005 | August | 10 | $645,441 | $6,969,403 | Flooding | DR 1591 |
| 2007 | March | 17 | $322,864 | $1,241,633 | Flooding | DR 1691 |
| 2007 | April | 16 | $934,650 | $25,954,650 | Flooding | DR 1693 |
| 2008 | April | 29 | $296,550 | $3,854,077 | Flooding | DR 1755 |
| 2008 | December | 11 | $210,000 | Unknown | Ice Storm | EM 3298 |
| 2009 | January | 9 | $225,125 | $9,781,024 | Winter Storm | DR 1815 |
| 2009 | June | 18 | $424,660 | $2,915,456 | Severe Summer Storm | DR 1852 |
| 2013 | December | 24-27 | $525,912 | ~$2M | Ice Storm | |

The team decided to concentrate on the top three prioritized hazards for profiling. These included Severe Winter Storms, Hurricanes and Flooding. Historical disaster event information bears this out.

### Impacts of Climate Change Theory on Hazard Risk in Waldo County

According to the data provided by Maine Geological Service, Maine could experience three feet of sea level rise by the year 2100. This amounts to a linear calculation of about 4 inches in the next 10 years. Because this Plan must be reevaluated every five years and because Federally-funded mitigation projects can take 2-3 years to implement, it was decided to evaluate the possible impacts to the hazard risk assessment over the next decade (4 inches of potential sea level rise).

| Hazard | Possible Impact | Reasoning |
|---|---|---|
| Flooding | Potentially less washed out gravels roads in hilly areas. | Sea level rise would have to be much greater than current predictions to impact the coast in Waldo County. If the result was more rain in the late winter instead of snow, then this would lessen the storm water runoff due to less snowpack to melt all at once. |
| Severe Winter Storm Events | Less severe snowstorms, but potentially more ice storms. | Current climate change predictions could change Maine's climate to more resemble Southern New England's climate, which typically has less snowfall and more rain and ice. |
| Hurricanes, Tropical Storms and Microbursts | Uncertain. There could be more or less in number and severity depending on how the climate were to change. | Maine has not been impacted by a hurricane since 1991 and the worst was in 1954. The number of tropical storms to impact Maine has also lessened in the last 25 years. There are no historical records to speak of to determine if microbursts are happening more or less often. |
| Avalanche | None | There are no terrain features in Waldo County that could cause avalanches, no matter what the climate is doing. |
| Blight/ Infestation | Potentially more infestation of pests. | Current climate change predictions could change Maine's climate to more resemble Southern New England's climate, which has more pests like ticks, but agriculture has not shown to be worse in southern Maine then in northern Maine. If anything, there would be a longer growing season. |
| Coastal Erosion | More erosion in areas near Stockton Springs | Much of the Waldo coast is rocky, but the area near Stockton springs is very sandy. If coastal waters rise, they could potentially impact coastal areas there. However, development in that area is very sparse, so there is little impact. |
| Drought | Unknown | These has been no evidence of less rainfall in Waldo County resulting from potential climate change. |
| Earthquake | None | Earthquakes are not connected to a warming of the climate. Earthquakes are geologic phenomenon. |
| Landslide | Potentially more | See Coastal erosion above. |
| Severe Thunderstorm | Unknown | These hasn't been any evidence thunderstorms becoming more severe and more often in Waldo County resulting from potential climate change. |
| Subsidence | None | See coastal erosion above. |
| Tornado | No | Waldo's last tornado occurred in 1954. The probability is so low that even a modest increase in probability due to climate change will still have a low probability. |
| Wildfire | Fewer wildfires | These has been no evidence of less rainfall in Waldo County resulting from potential climate change. |

## PROFILING HAZARDS

| | |
|---|---|
| **Requirement §201.6(c)(2)(i):** | **The risk assessment shall include … a description of the 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.** |

Severe Winter Storm Events

LOCATION & EXTENT: Waldo County is subject to severe winter storm events. The entire county is subject to major snowfall events; however, the northern half of the county typically will receive slightly greater snowfall amounts. The entire County can experience a major ice storm, as it did in January 1998 and December 2013; however, the coastal communities on the mainland and on the islands, which contain the vast majority of the population, experience ice in their snow storms slightly more frequently. Finally, the entire County is very susceptible to "Northeaster" storms, especially from the very high winds that are involved in such a storm. The Gulf Stream follows a path up the eastern seaboard bringing major storms with it to the Gulf of Maine. Much colder air flows down from Canada and collides with the Gulf Stream over the New England region.

PREVIOUS OCCURRENCES: There have been three Federally-declared winter storm disaster events in the last 18 years. The worst storm in the past 18 years was an ice storm that occurred in January 1998 and caused $2,530,680 in damage throughout the entire County. Three inches of ice resulted. This storm, which severely damaged the electrical transmission system in the State of Maine, caused major damage to the forests, covered many roadways with debris and ice, and caused some limited building damages. In December 2013, the County was hit with an ice storm which accumulated 1-1/2 inches of ice. Power was lost for three days and caused $525,912 in local public damages. However, most winter storms in the County are major snow storms which overtax the highway snow removal operations and cause localized power outages.

PROBABILITY: It is expected that a severe winter storm could cause damage in Waldo County at least once every three to five years. If the results of climate change are that the County experiences generally slightly warmer temperatures, then the potential impacts from winter storms will be somewhat less snow accumulation and more potential for icy snow storms. Ice storms tend to result in more regional power outages, but far less roadway snow removal. Both require sand, salt and calcium chloride to treat the roads.

Severe Summer Storms/Hurricanes

LOCATION & EXTENT: Waldo County is subject to Hurricane and Tropical Storm events. Waldo County is a coastal county located on Penobscot Bay. The County has been impacted by six Category 1 hurricanes or severe tropical storms from 1954 to 1991. The County averaged a hurricane/tropical storm every ten years. It has been 25 years since the last hurricane impacted Waldo County. The last tropical storm (Irene) to have even minor effects was in 2011. There were a few scattered powers outages and a number of trees down in the roads.

Since the County is only about 25 miles deep from the coast, all parts of the County are subject to the effects of a Hurricane. However the coastal towns will be hardest hit during the storm with storm surge and very high winds and rainfall. The northern half of the county will experience heavy rainfalls that will overwhelm rudimentary storm water control systems and will experience trees on power lines and in the roads.

PREVIOUS OCCURRENCES: Hurricanes Carol and Edna in September and October 1954 were not only the most destructive hurricanes to have impacted Waldo County in recorded times, they were separated by less than 2 weeks. The area had not even begun to recover when the second major storm struck. Two lives were lost in Unity, Maine during Hurricane Edna, due to drowning. In 1985, Hurricane Gloria brushed past Waldo County causing power outages and some localized flooding. In 1991, the Hurricane Bob path went directly over Waldo County, but had downgraded to a tropical storm.

PROBABILITY: It is expected that a Category 1 hurricane could cause major damage in Waldo County at some point within the next decade.

Flooding

LOCATION & EXTENT: Waldo County is subject to riverine, storm surge, and wetland area flooding. The County EMA has reviewed the County's Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) to compile a profile of the flooding hazard in the County. The EMA staff completed research on flooding history in the County and indicated this data on the GIS base maps. The Municipal Base Maps show the areas susceptible to potential flooding. This provides a clear picture of areas and structures most vulnerable to flooding.

There are three major rivers located along the border of Waldo County. The Penobscot River and Bay is bordered on the towns of Belfast, Frankfort, Islesboro, Lincolnville, Northport, Prospect, Searsport, Stockton Springs and Winterport. The Sebastacook River is bordered by the Town of Burnham. A smaller river, the Passagassawakeg River flows through the City of Belfast. There are no dams on the Penobscot River in Waldo County, although there is a number of dams on the river, north in Penobscot County. The majority of the Waldo County dams are small and located at the outlets of lakes and ponds and would not have a major flooding impact. If a large dam on the Penobscot River, such as the Dolby dam in northern Maine were to catastrophically fail, it would take a day and a half for the flooding to occur along the Penobscot River section in Waldo County. This would provide us with sufficient warning time to prepare for the floodwaters. There is one dam in Waldo County on the Sebastacook River, however, that section adjacent to the Sebastacook River in Burnham is an undeveloped boggy area. This Dam is in excellent condition and procedures are in place for effective flood management. Flooding from the Penobscot and Sebastacook rivers is not expected to be likely; however, flooding along the Penobscot River would cause damage to a small number of residential structures if it were to occur.

The most susceptible communities to coastal flooding are Islesboro and Lincolnville. The island community of Islesboro could be split into two halves during storm surge. Public Safety resources must be divided to protect each half of the community during a major coastal storm. Lincolnville Beach, which is also the home of a State of Maine Ferry Service, is susceptible to flooding and several Lincolnville Beach area businesses have experienced minor flooding in the past.

The majority of the flood damage in the County is caused by water runoff in the springtime which undercuts or overtops rural roads. When Maine has an above average snowfall for the winter and than warmer temperatures and rainfall suddenly arrive in early spring, the snow pack melts off quicker then the watersheds can handle. This causes local water bodies to overflow their boundaries and flood nearby road surfaces.

Typically, this road damage is not major, though it can absorb a major portion of a municipal road maintenance budget for an entire year and does happen in several of the towns every other year or so.

PREVIOUS OCCURRENCES: The most destructive flooding events occurred in 2007 within four weeks of one another. The St Patrick's Day Flood caused a major flooding, especially to the eastern half of the County. Nearly all of the damages were to roads and storm water management systems. Four weeks later, the Patriot's Day Flood caused nearly three times the level of damages and impacted the entire County, although the majority of the damages occurred in the eastern half of the County. Again, nearly all of the damages were to roads and storm water management systems.

PROBABILITY: It is expected that a major flood event could cause road damage in Waldo County at least once every 2-4 years. Flood zones are shown on the Municipal Base Maps included in this section.

**COUNTY BASE MAP**

This section contains base maps of the entire geographic area of Waldo County. The base maps were completed in ArcInfo GIS format by the Waldo County EMA office and contain the following layers:

County and Municipal Boundaries

Neither the State of Maine nor the National Weather Service maintain data on snowfall and ice storms on a town-by-town basis. Normally there are only one or two locations within a Maine County that record weather data. For Waldo County, the only weather station is located in Belfast. Therefore, the entire county is modeled as one entire hazard area for severe winter storms.

FEMA has recently completed new flood maps for Waldo County. The GIS data resulting from this map revision and from new LIDAR data have been incorporated into this plan.

The County Map may be used to orient the user of this plan to the locations of the municipalities in relation to each other.

The National Weather Service (NWS) "Maine Weather Regions" is also attached for reference purposes. Waldo County is subdivided into two weather regions – "Interior" and "Midcoast". Throughout this plan, discussion is made as to the two separate weather patterns that split Waldo County into the "northern" or "interior" and into the "southern" or "coastal".

# Waldo County Political Subdivisions Map

0 5 10 20 Kilometers

0 2.5 5 10 Miles

Waldo County Towns
Other Counties
Ocean

Map created by Jake Weisberg for the Waldo County Emergency Management Agency.
Data sourced from the Maine office of GIS
This version published 3-10-2009

## MUNICIPAL BASE MAPS

This section contains base maps of the 26 municipalities located in Waldo County. The maps were completed in ArcInfo GIS format and contain the following layers:

Municipal Boundaries
State and Local Roads and Bridges
USGS Topographical Contours
Ocean, Lakes, Ponds, Rivers, Streams, and Wetlands
Locations of critical facilities
Georeferenced Aerial Photos

FEMA FIRM Flood zone Areas
FEMA/ACE Hurricane Surge Inundation Areas

The purpose of these maps is to graphically identify those facilities that overlap with flood and costal surge zone hazard areas in order to determine what assets are potentially impacted.

None of the Municipal Comprehensive Land Use Plans with Waldo County are maintained in a GIS format and could not be mapped for this project.

There is no common map scale for any of the maps; the largest view of each town was used. The maps are for reference purposes only and not for detailed measurements.

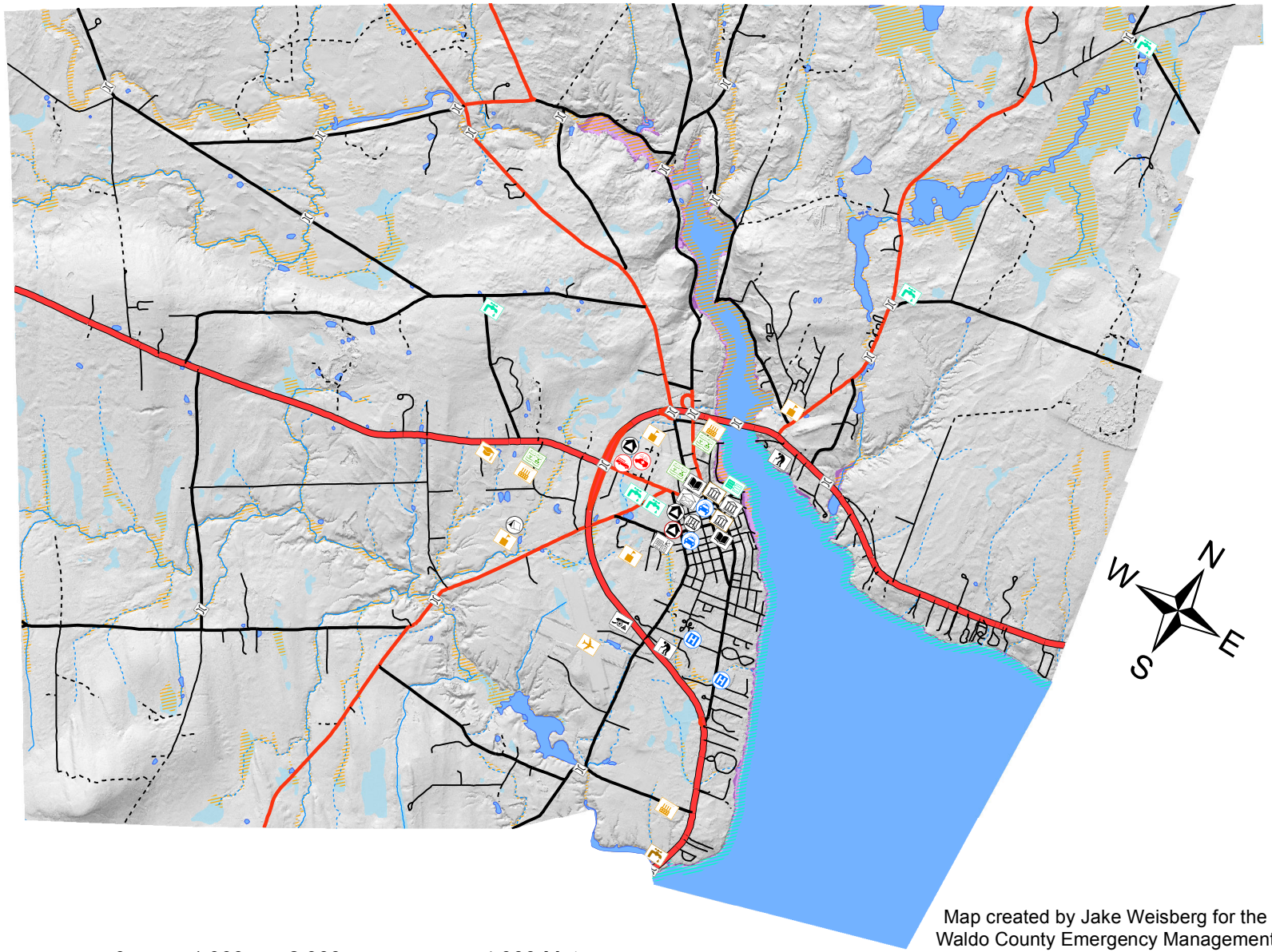
Although there are 26 municipalities in Waldo County, only 12 decided to participate and adopt the 2017 version of this plan.

NOTE: For those municipalities that had critical facilities impacted by potential flood zones or hurricane inundation areas, a second map was created of the potential hazard area which zoomed in on that area. Text balloons were added to these “zoomed in maps” to indicate the facilities or systems that could be impacted.

# Hazard Mitigation Map

City of Belfast

Flood and Hurricane Hazard Areas



**Legend**

**Critical Facilities**

- Airport
- Armory
- Assisted Living
- College
- Communications Center
- Courthouse
- Emergency Management Agency
- EOC
- EMS
- Fire
- Hazmat (EHS)
- Hospital
- Industrial Facility
- Jail
- Library
- Police
- Post Office
- Red Cross Shelter
- School
- Town Office
- Water Management
- Water Supply
- Water Treatment

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

**Flood Zones (FIRM 2014)**

- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

**Storm Surge (mean high tide)**

- Category 1 Hurricane
- Category 2 Hurricane

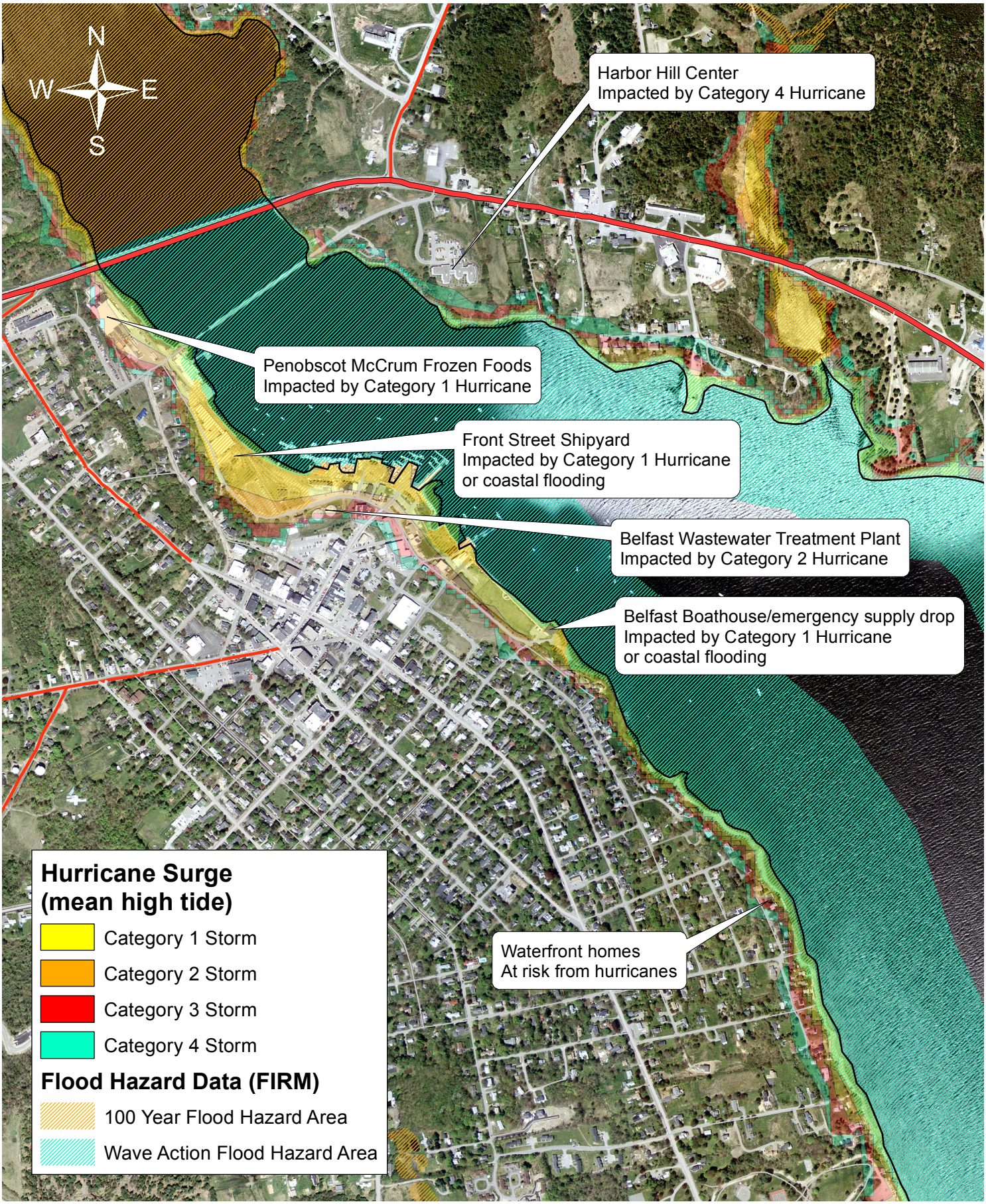
N W E S

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

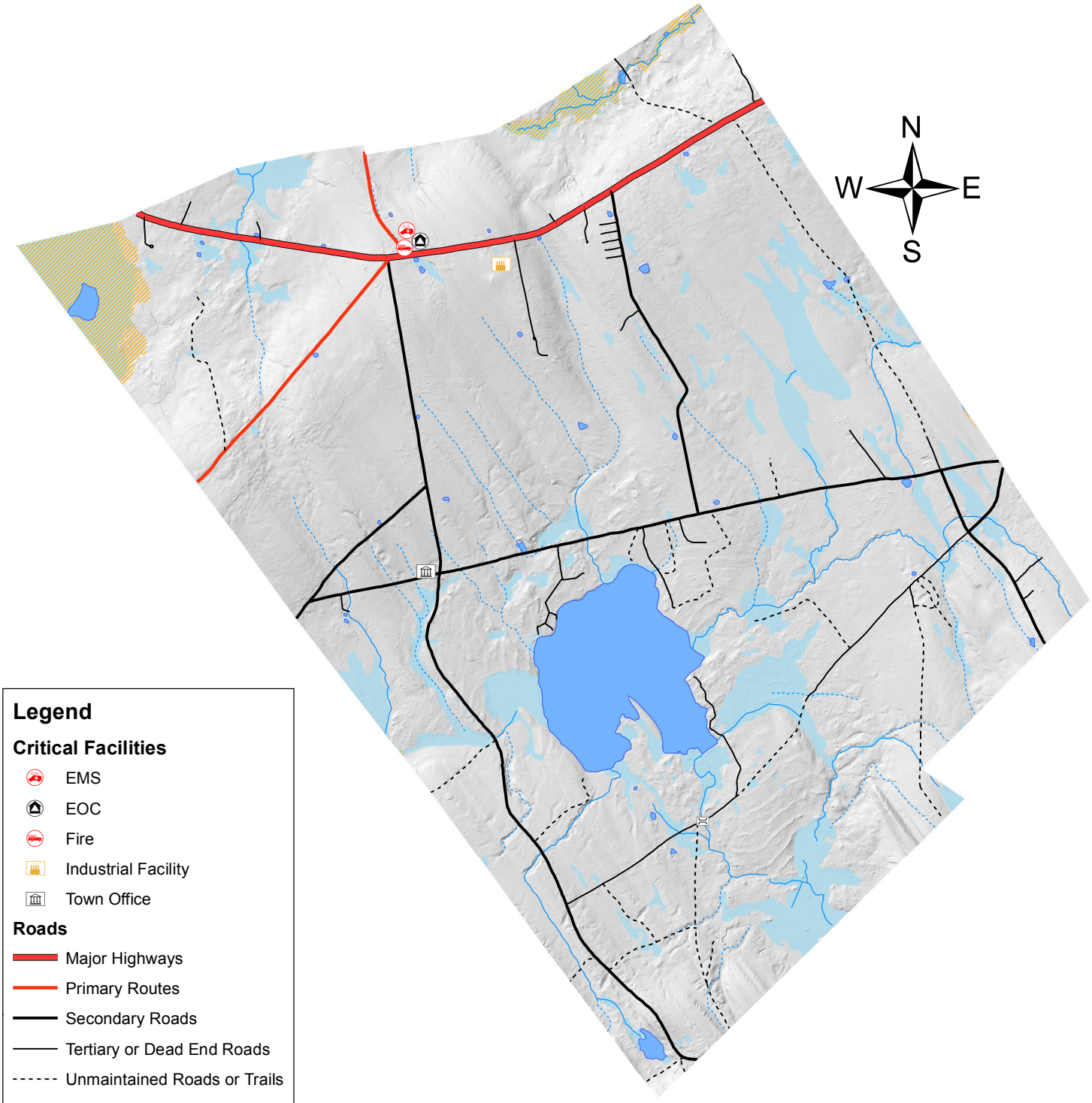
# Facilities in Flood/Hurricane Hazard Zones
# Belfast Downtown



# Hazard Mitigation Map

Town of Belmont

Flood Hazard Area




**Legend**

**Critical Facilities**

- EMS
- EOC
- Fire
- Industrial Facility
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

0 1,000 2,000 4,000 Meters

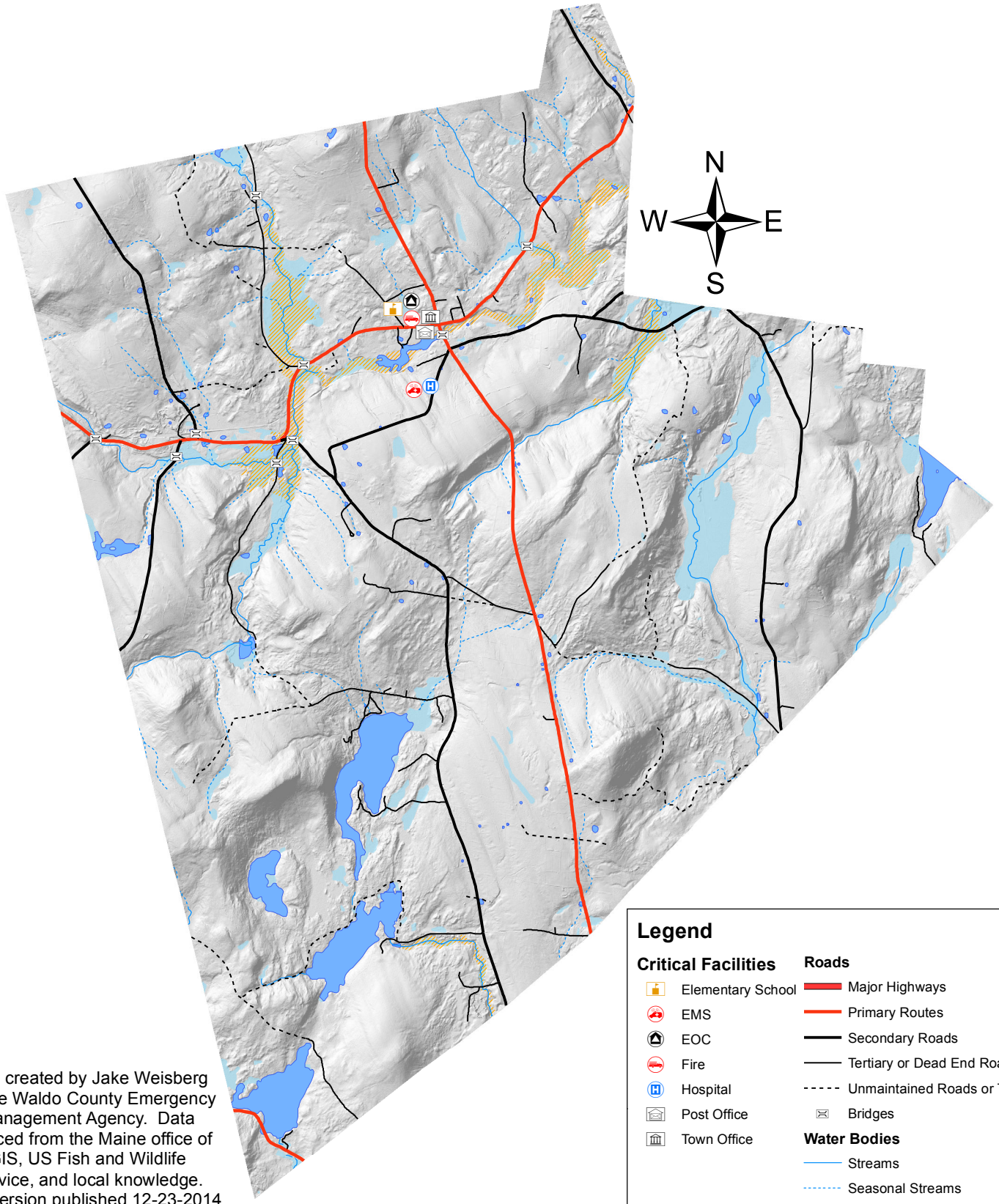
0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency.
Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 12-23-2014

# Hazard Mitigation Map

Town of Brooks

Flood Hazard Area




Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 12-23-2014

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

## Legend

**Critical Facilities**

- Elementary School
- EMS
- EOC
- Fire
- Hospital
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

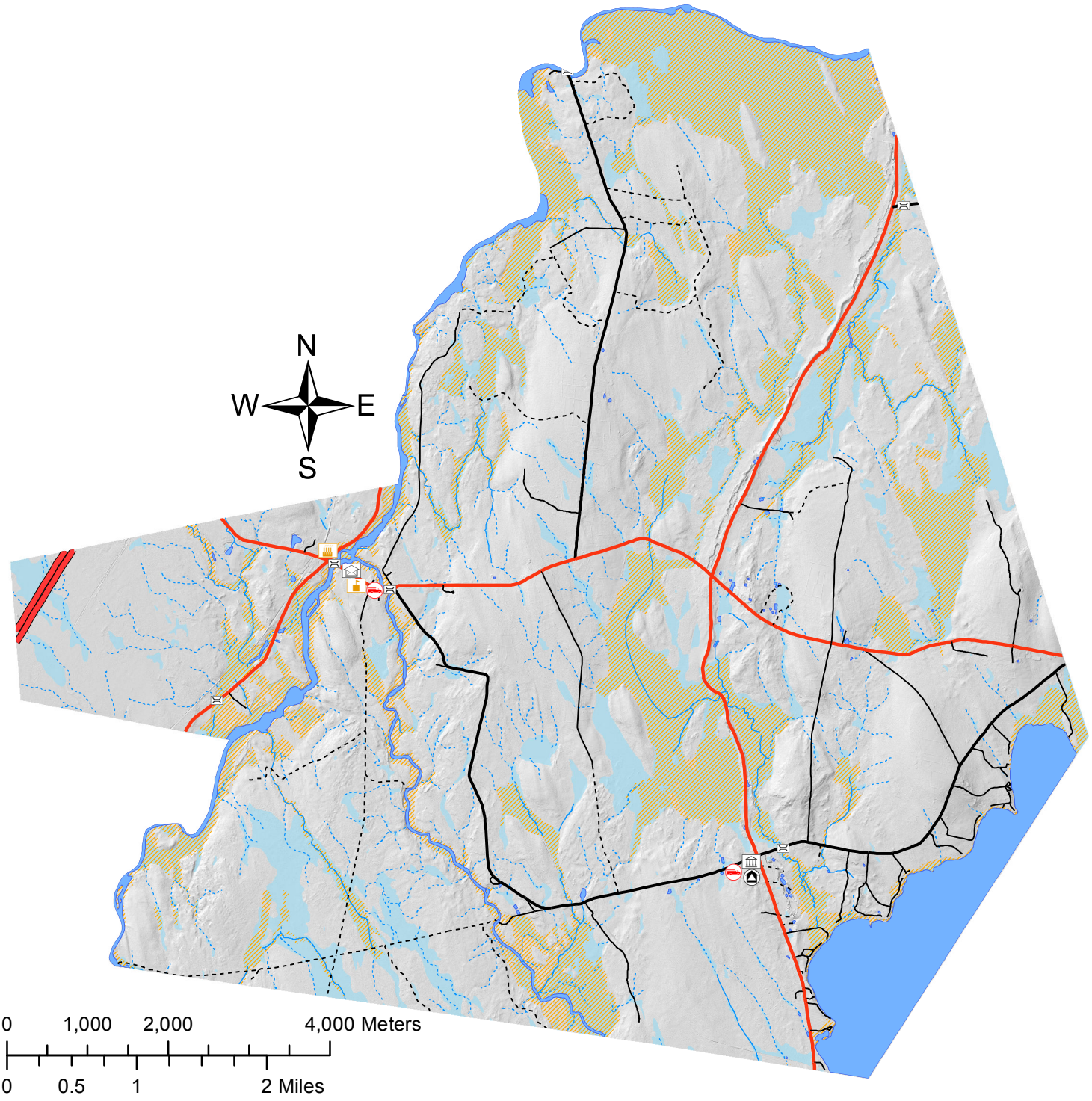
**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

# Hazard Mitigation Map

Town of Burnham

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary School
- EOC
- Fire
- Industrial Facility
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

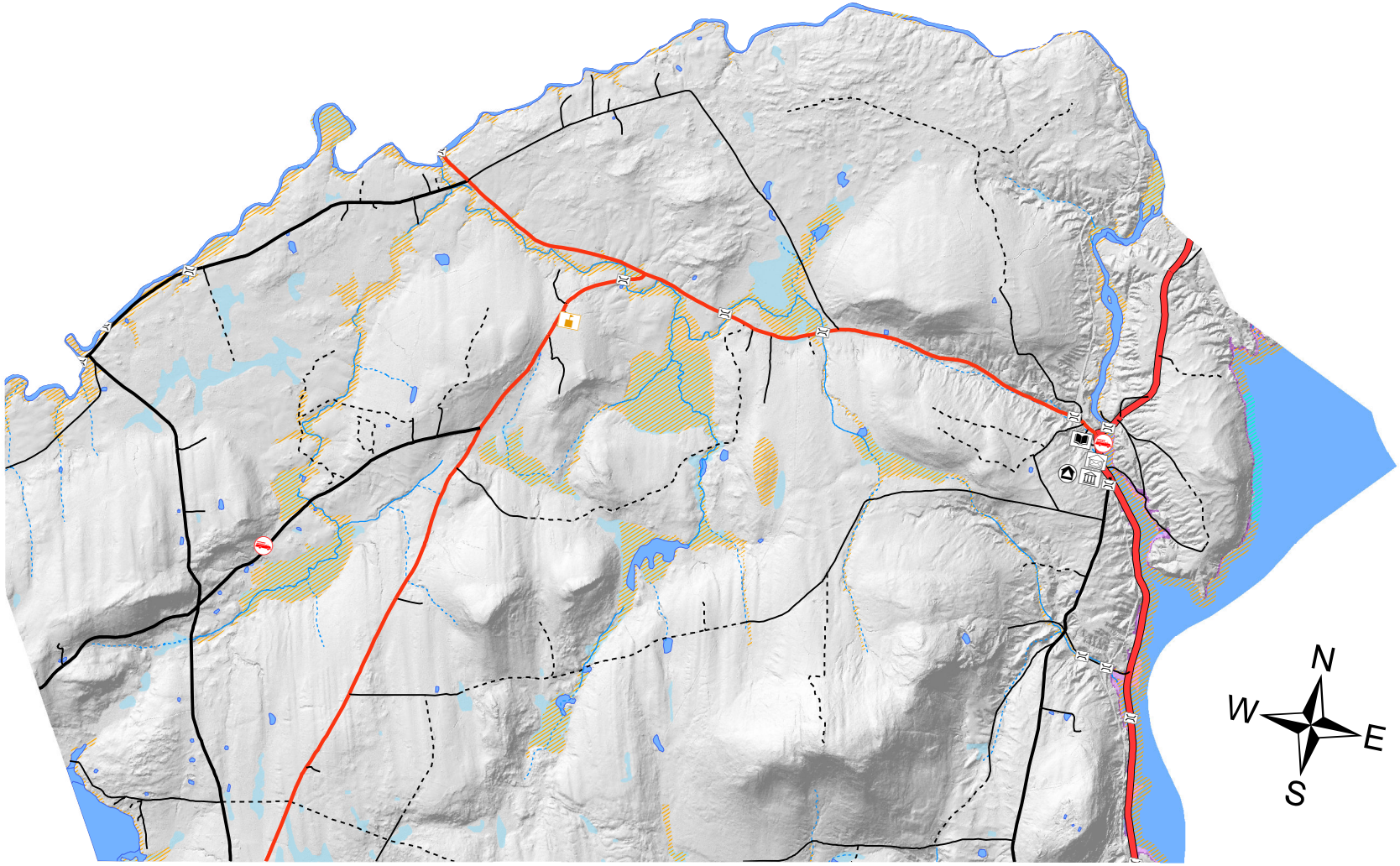
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 01-07-2015

# Hazard Mitigation Map

Town of Frankfort

Flood and Hurricane Hazard Areas




## Legend

**Critical Facilities**
- Elementary School
- EOC
- Fire
- Library
- Post Office
- Town Office

**Roads**
- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**
- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

**Flood Zones (FIRM 2014)**
- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

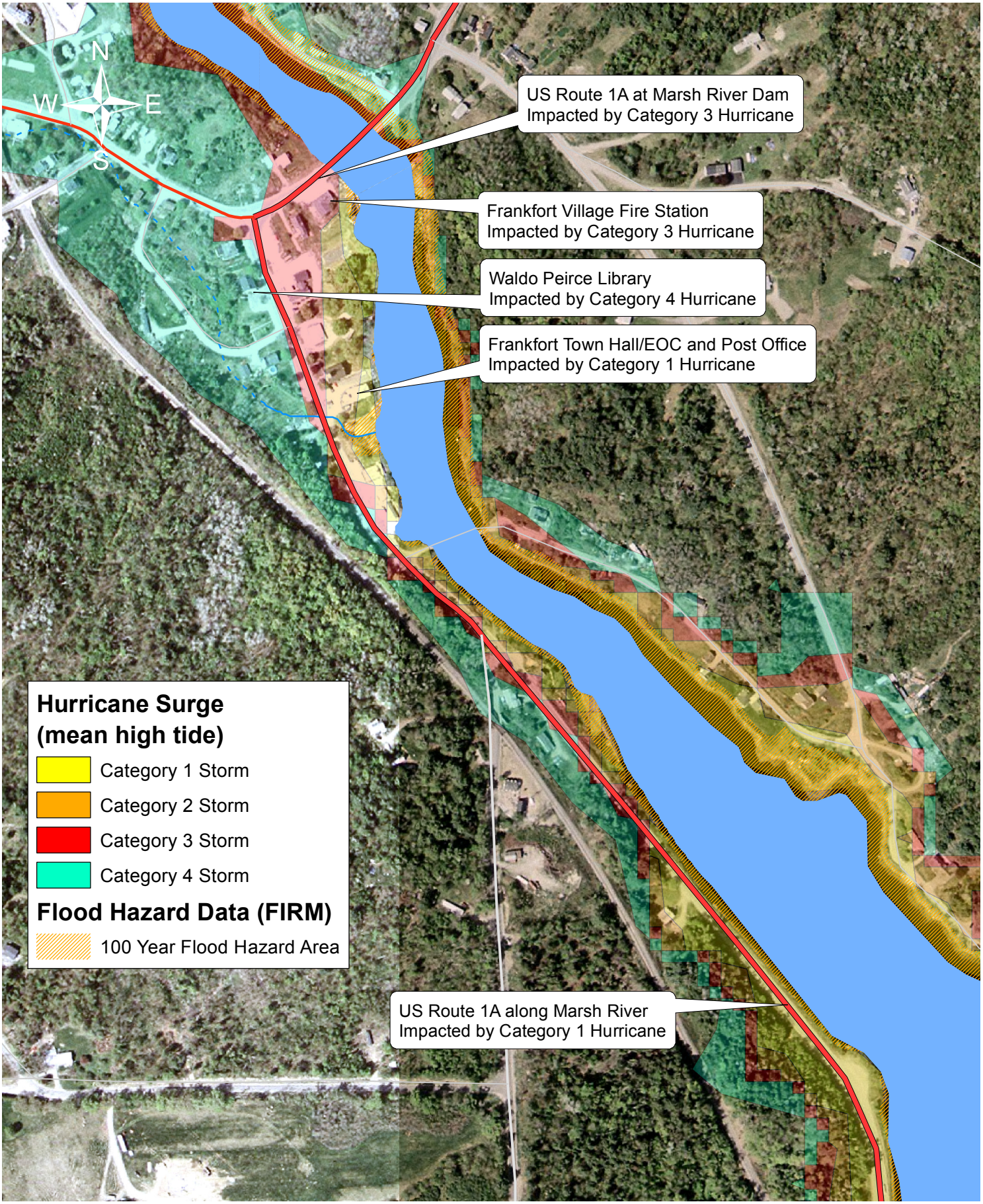
**Storm Surge (mean high tide)**
- Category 1 Hurricane
- Category 2 Hurricane

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

Map created by Jake Weisberg for the
Waldo County Emergency Management Agency.
Data sourced from the Maine office of GIS,
US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

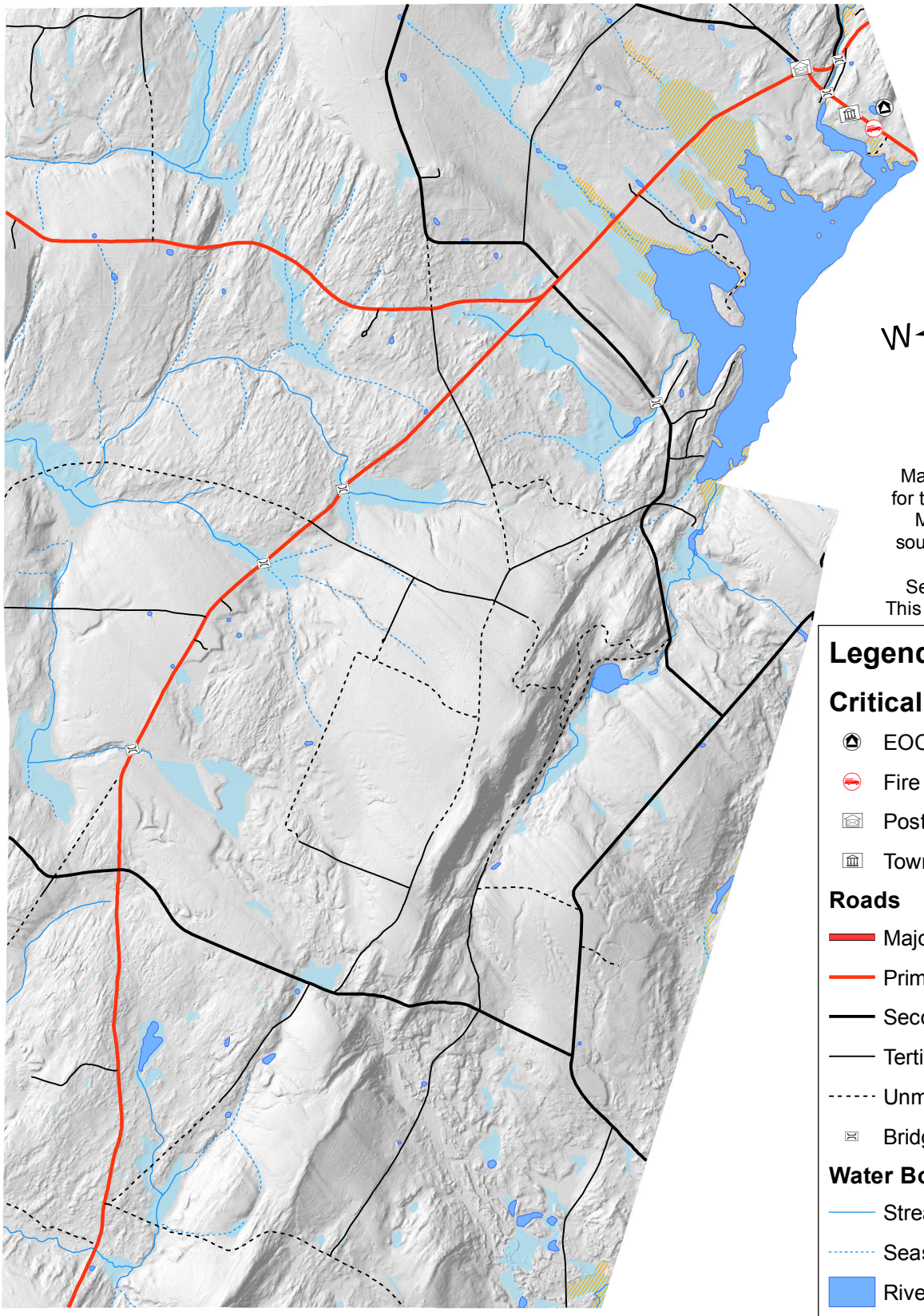
# Facilities in Flood/Hurricane Hazard Zones
# Frankfort Village



# Hazard Mitigation Map

Town of Freedom

Flood Hazard Area



N

W E

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Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

## Legend

### Critical Facilities

- EOC
- Fire
- Post Office
- Town Office

### Roads

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

### Water Bodies

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

### Flood Zones (FIRM 2014)

- 100 Year Flood Hazard Area

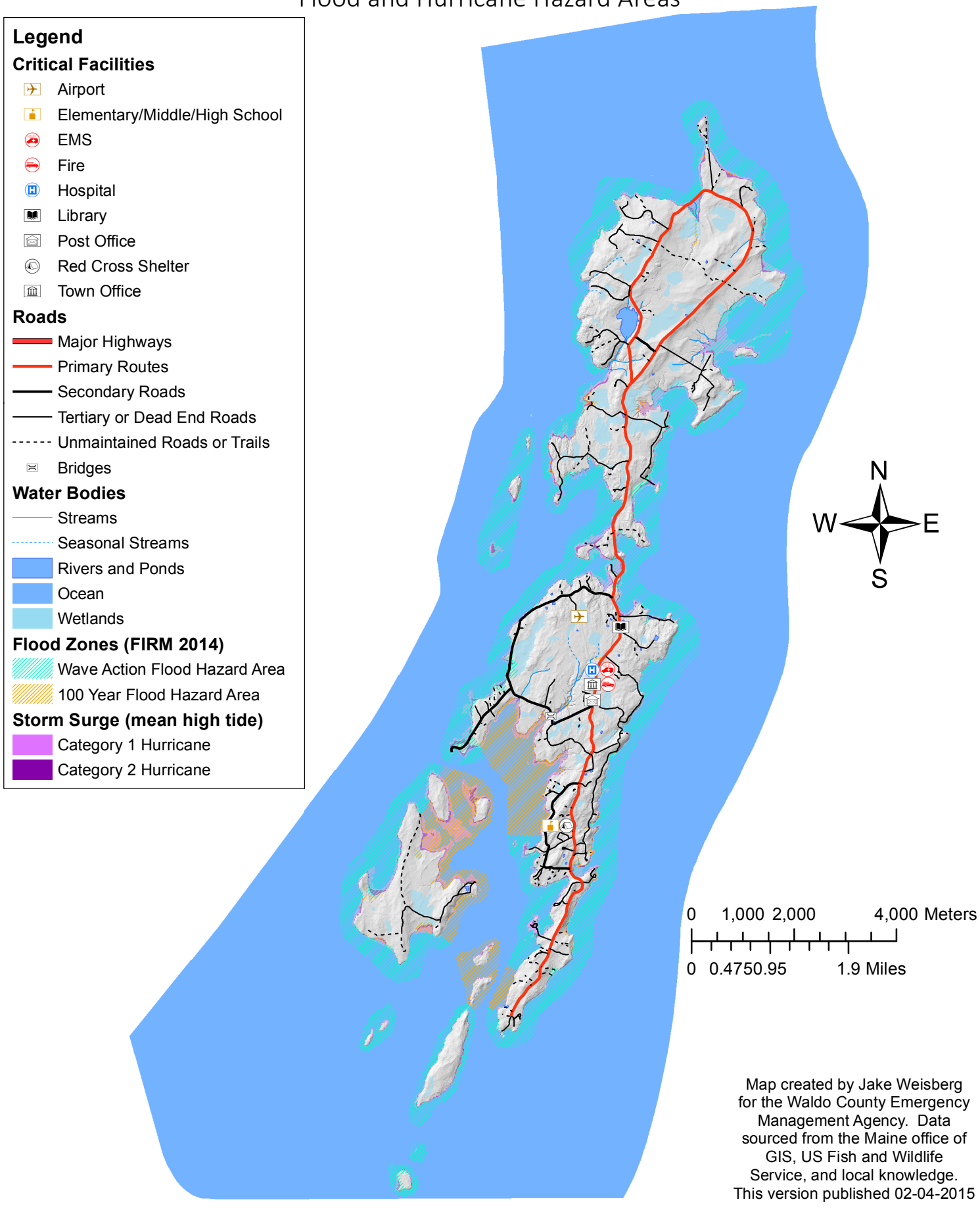
0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

# Hazard Mitigation Map

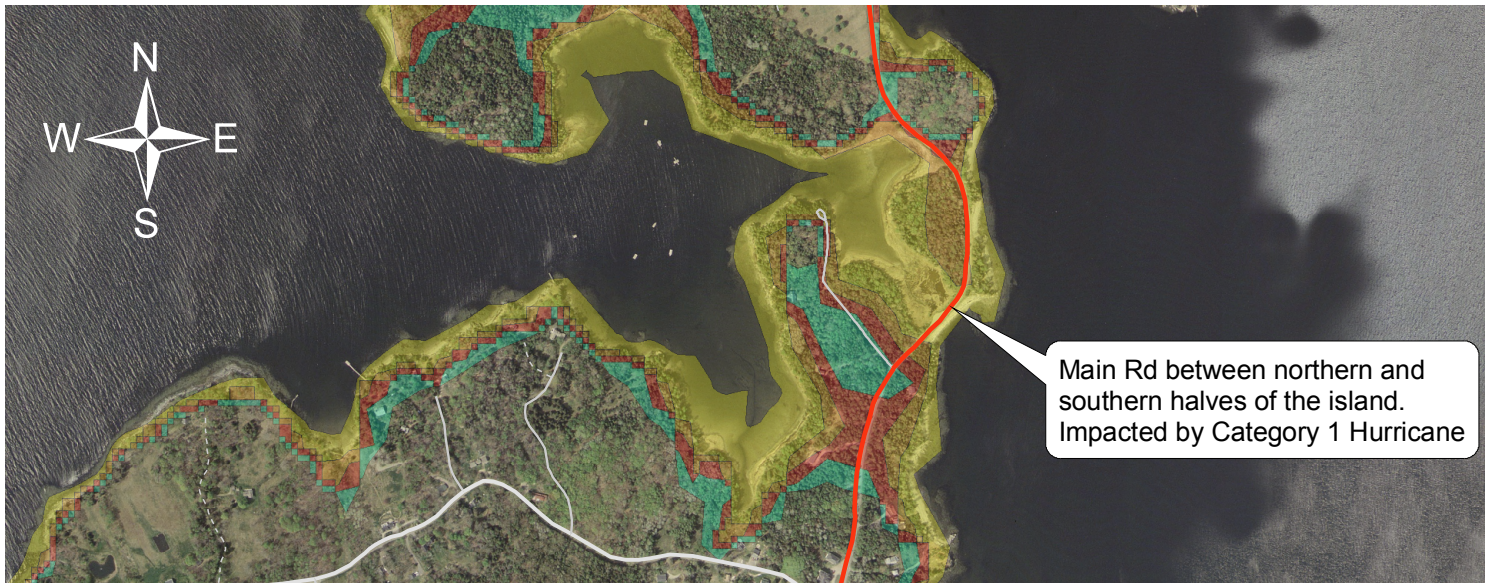
Town of Islesboro

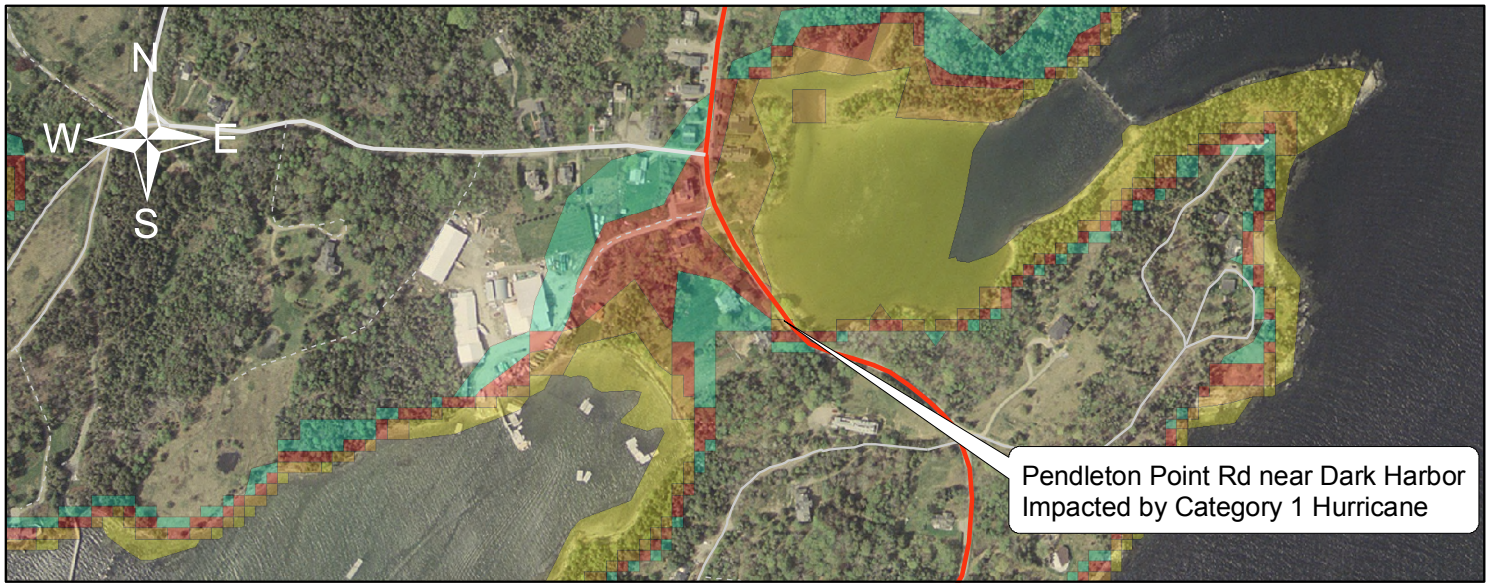
Flood and Hurricane Hazard Areas

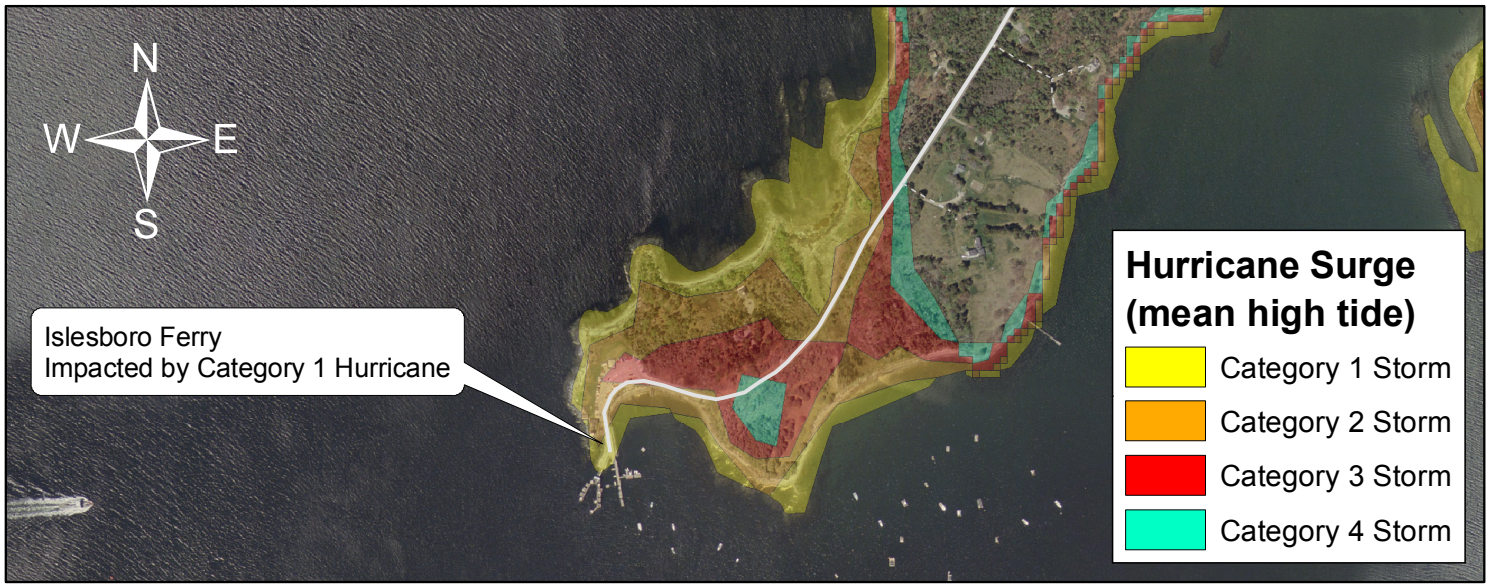



Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-04-2015

# Facilities in Flood/Hurricane Hazard Zones
# Islesboro Transportation Risks



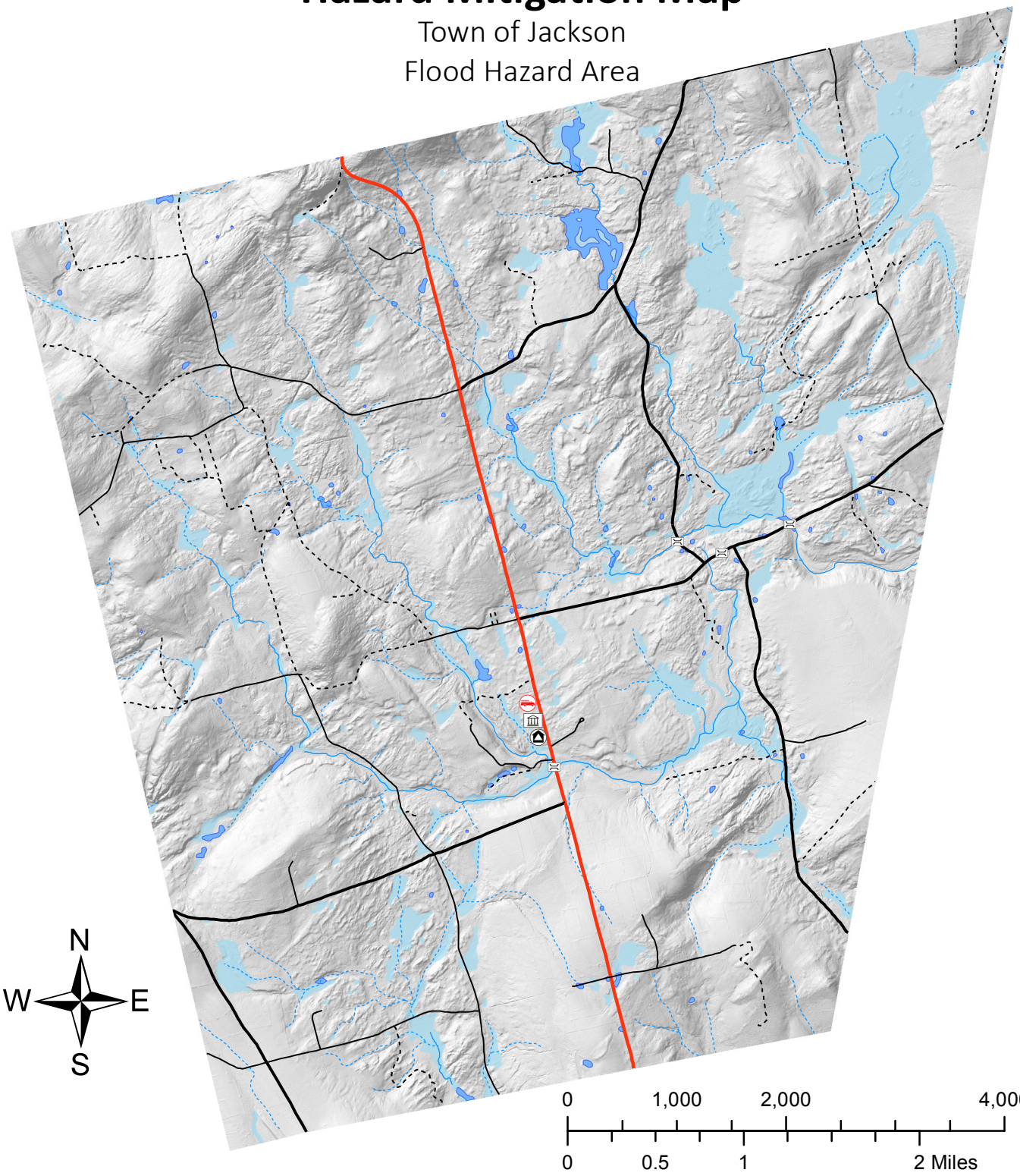



# Hazard Mitigation Map

Town of Jackson

Flood Hazard Area




## Legend

**Critical Facilities**

- EOC
- Fire
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

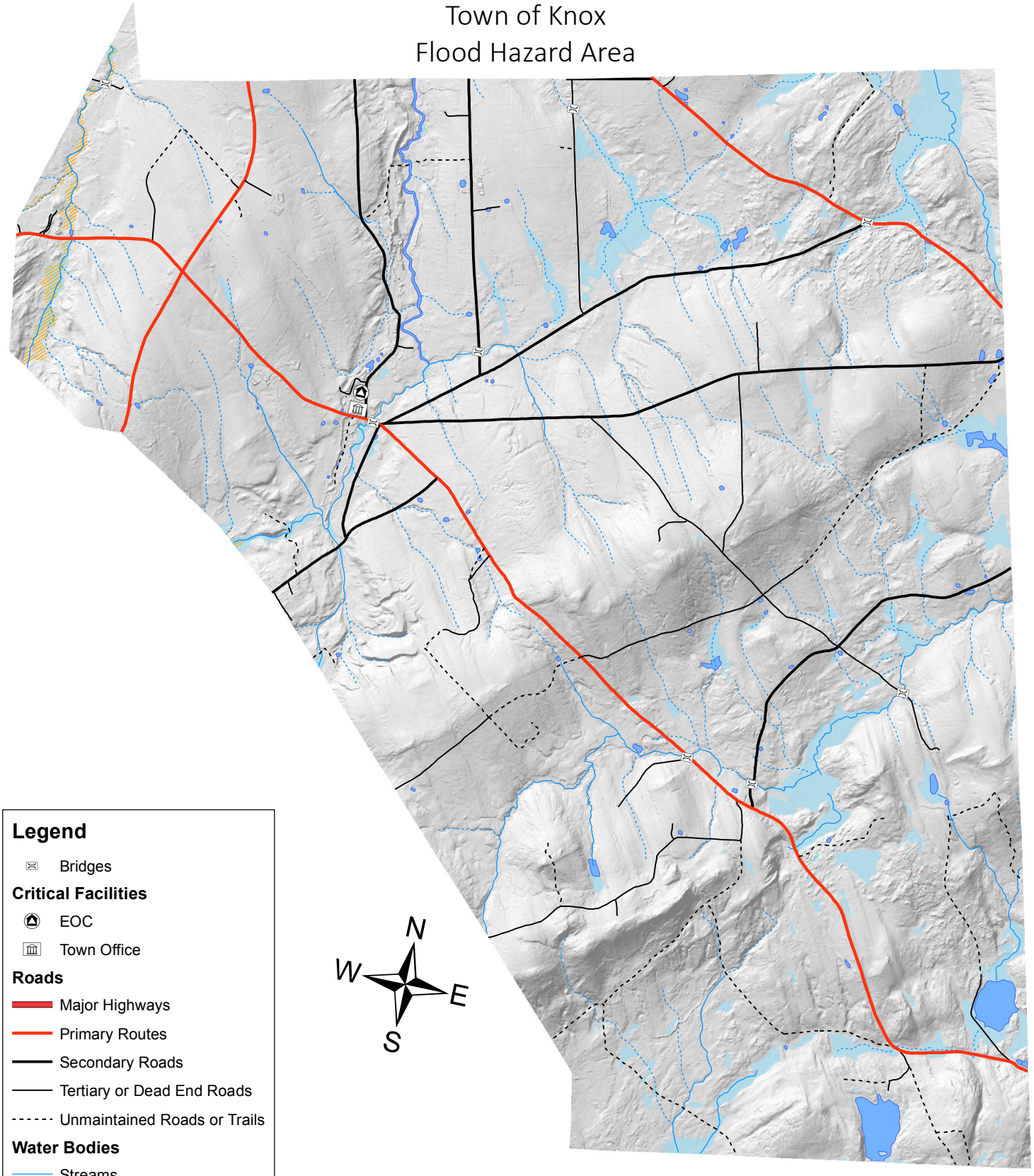
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

# Hazard Mitigation Map

Town of Knox

Flood Hazard Area



**Legend**

- Bridges

**Critical Facilities**

- EOC
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

N

W E

S

0 1,000 2,000 4,000 Meters

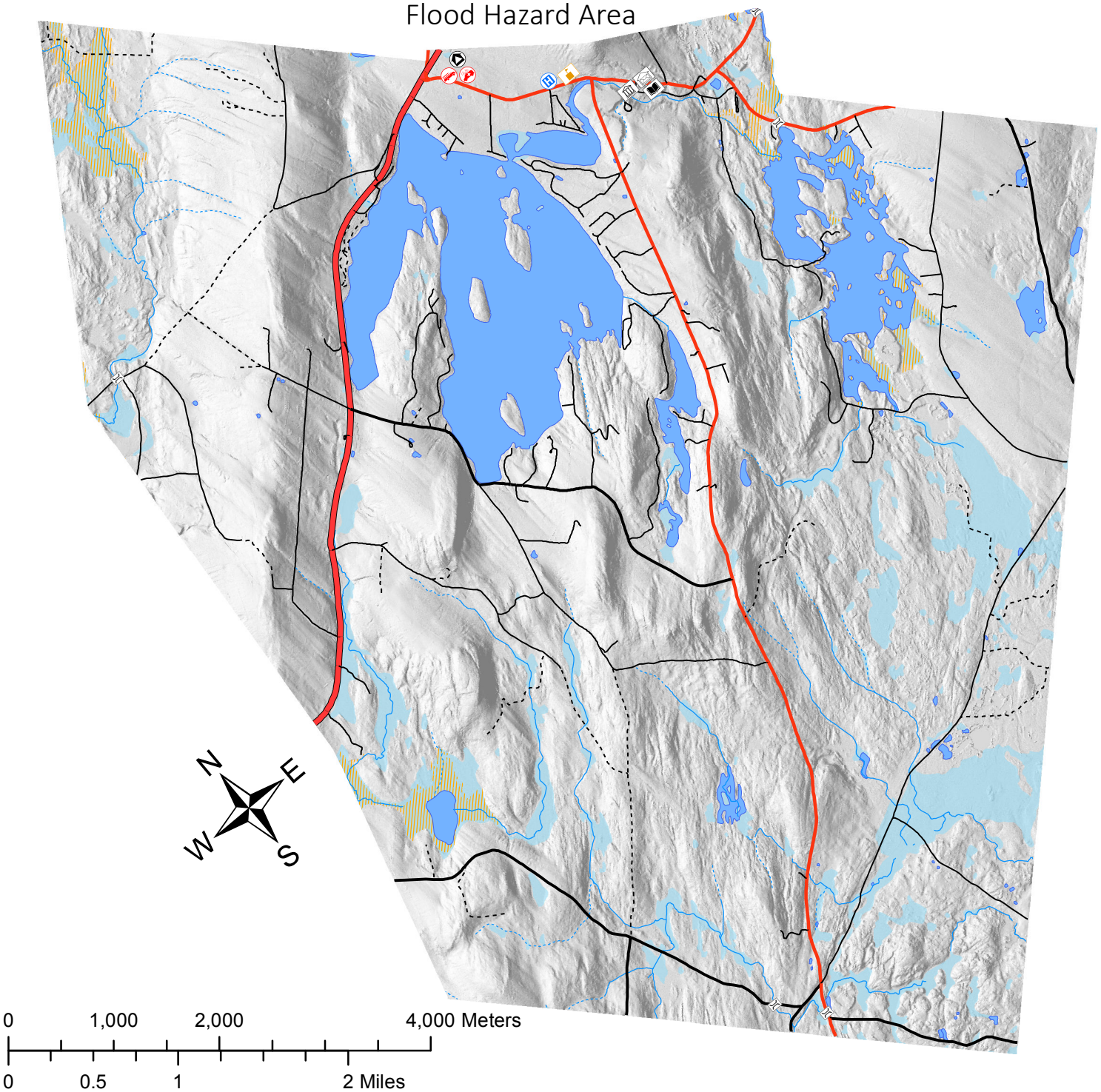
0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-04-2015

# Hazard Mitigation Map

Town of Liberty

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary School
- EMS
- EOC
- Fire
- Hospital
- Library
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

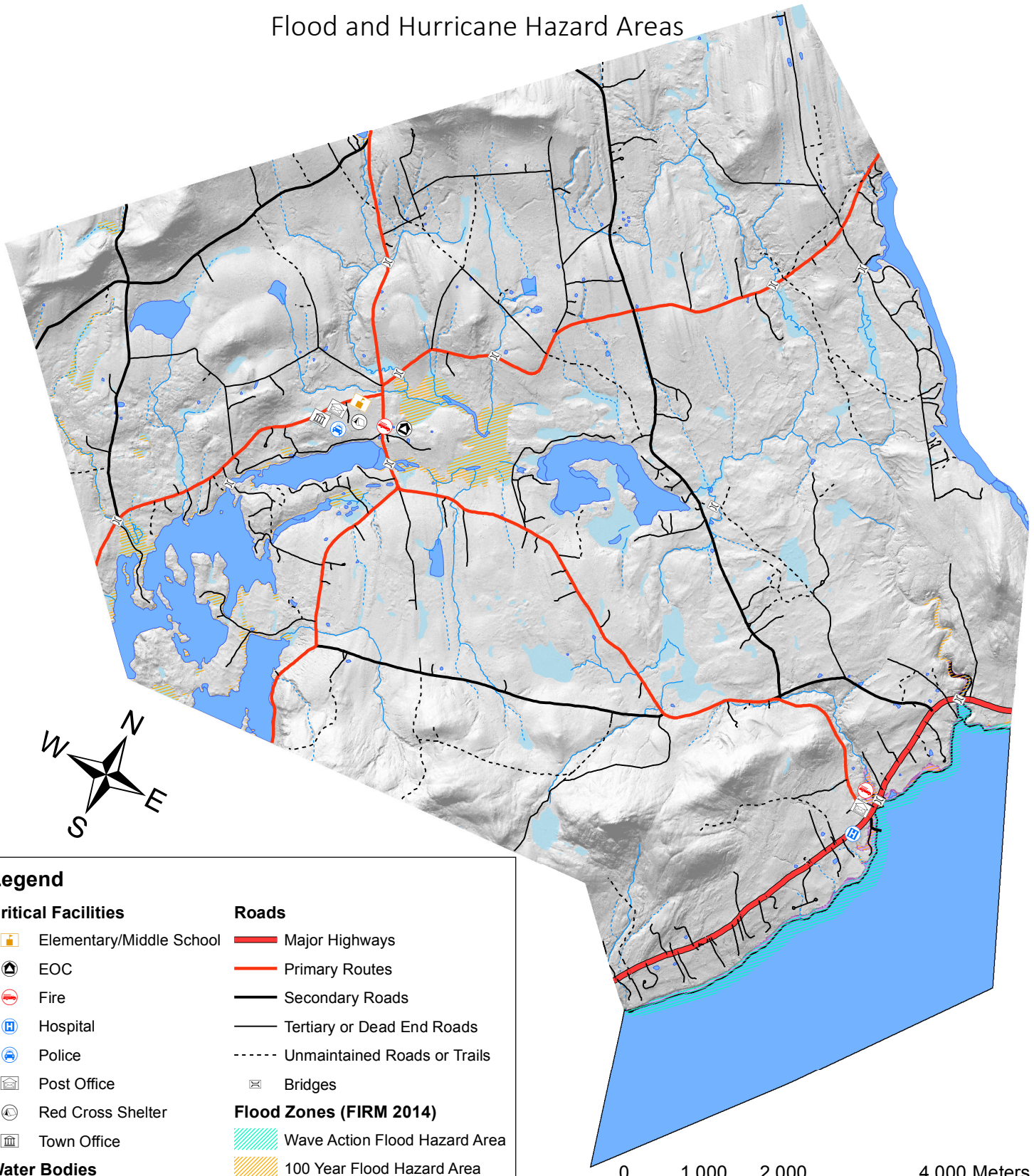
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

# Hazard Mitigation Map

Town of Lincolnville

Flood and Hurricane Hazard Areas




## Legend

**Critical Facilities**

- Elementary/Middle School
- EOC
- Fire
- Hospital
- Police
- Post Office
- Red Cross Shelter
- Town Office

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Flood Zones (FIRM 2014)**

- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

**Storm Surge (mean high tide)**

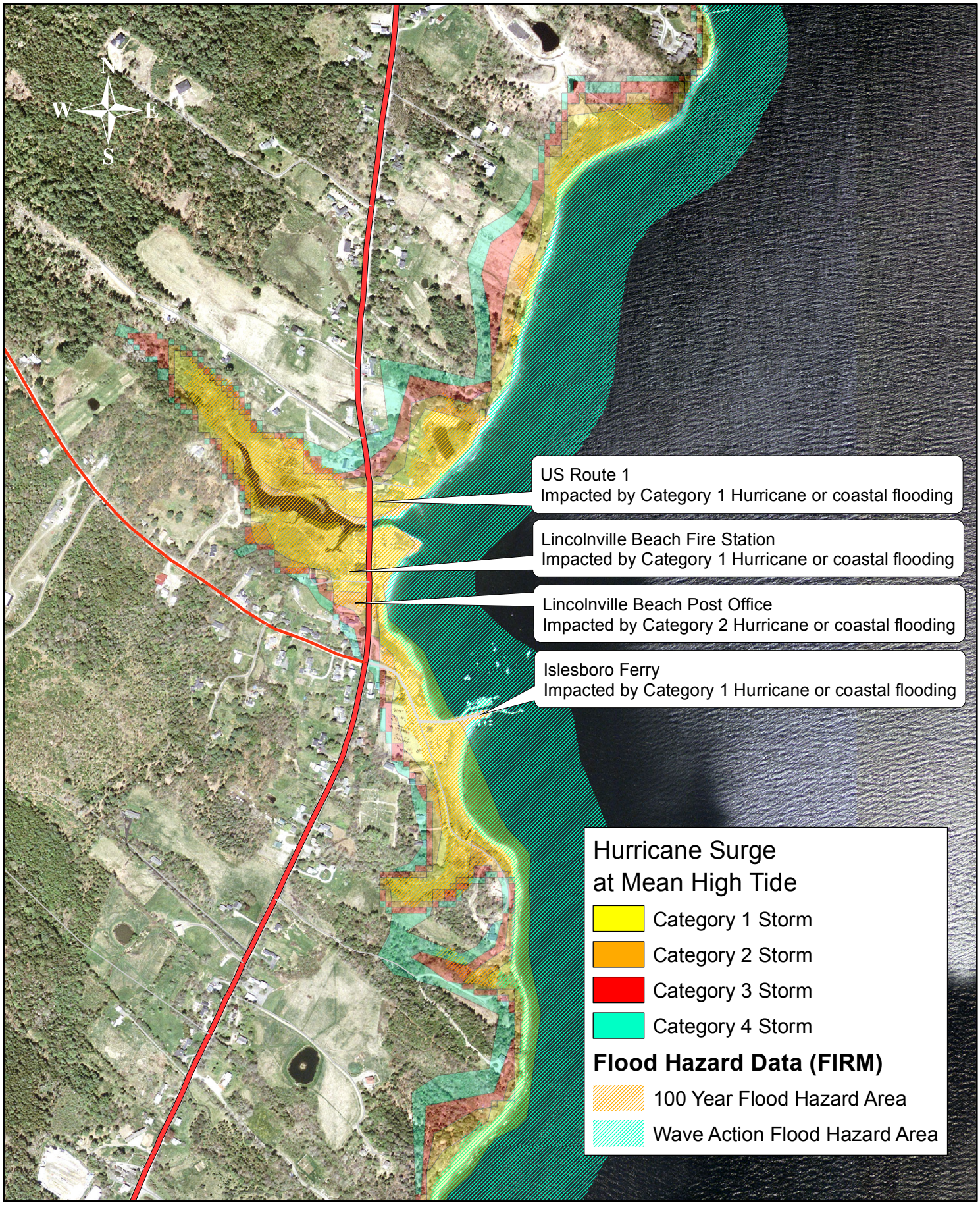
- Category 1 Hurricane
- Category 2 Hurricane

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

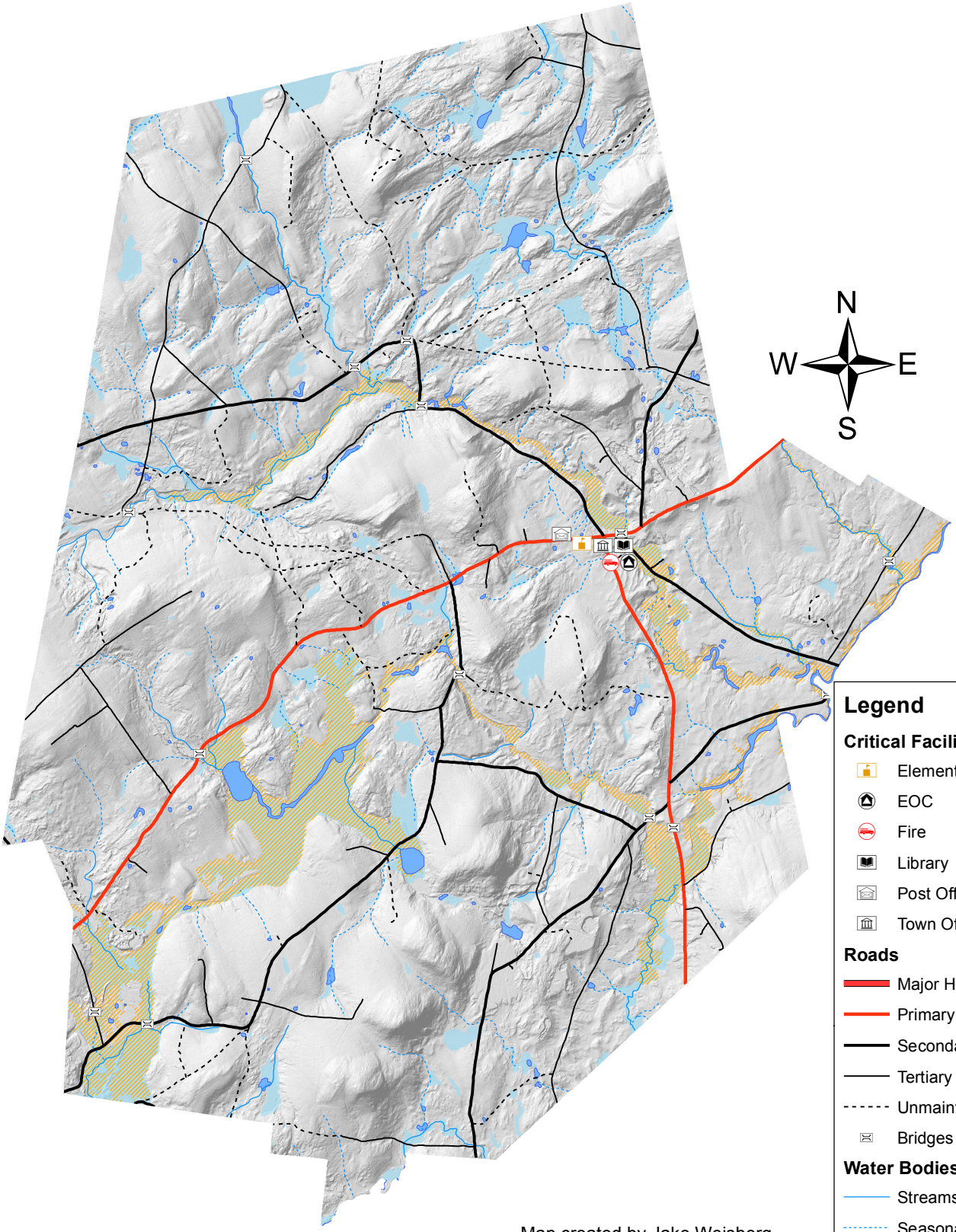
# Facilities in Flood/Hurricane Hazard Zones
# Lincolnville Beach



# Hazard Mitigation Map

Town of Monroe

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary School
- EOC
- Fire
- Library
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

0 1,000 2,000 4,000 Meters

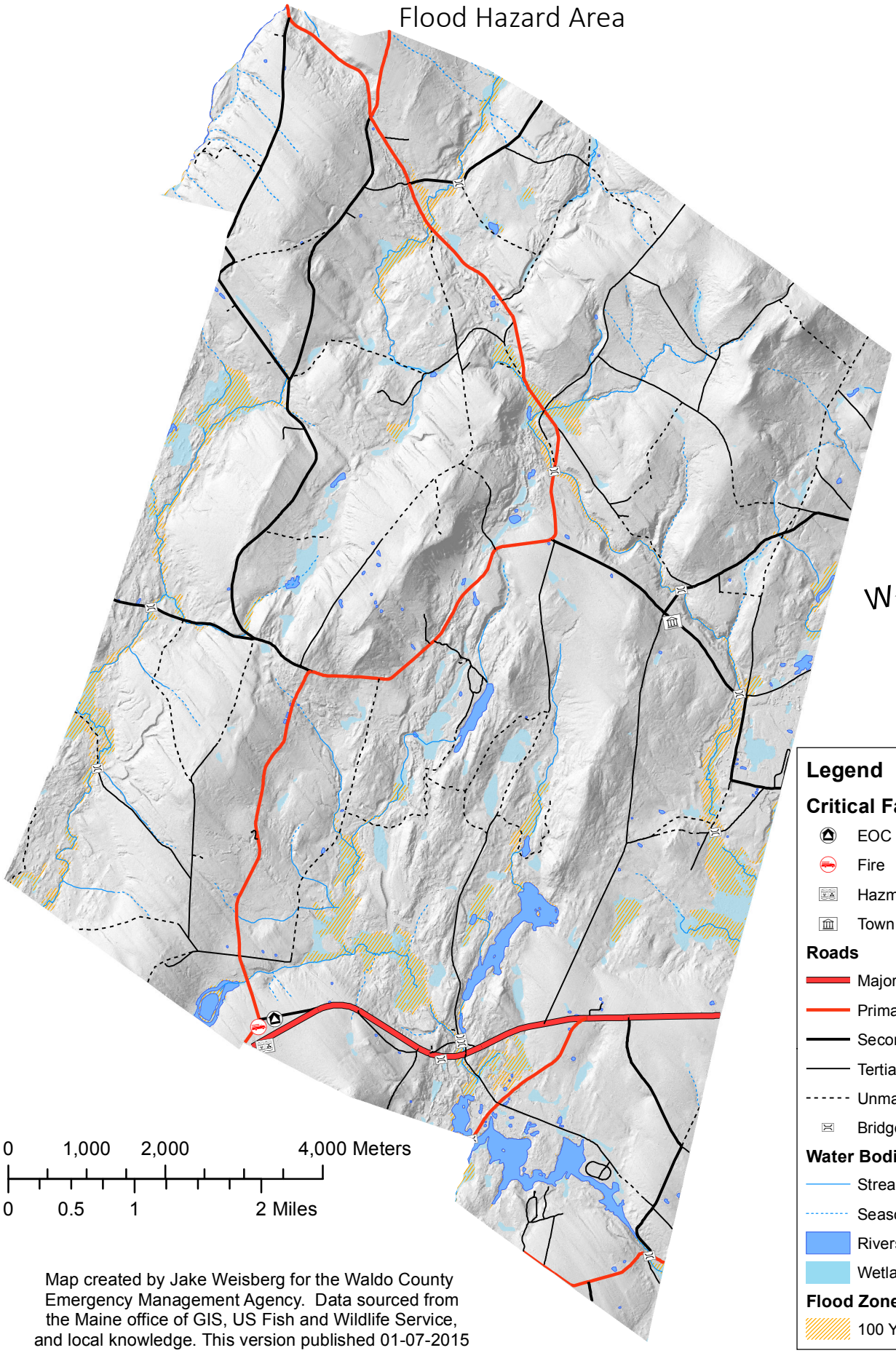
0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

# Hazard Mitigation Map

Town of Montville

Flood Hazard Area



N

W E

S

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

**Legend**

**Critical Facilities**

- EOC
- Fire
- Hazmat (Petroleum)
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

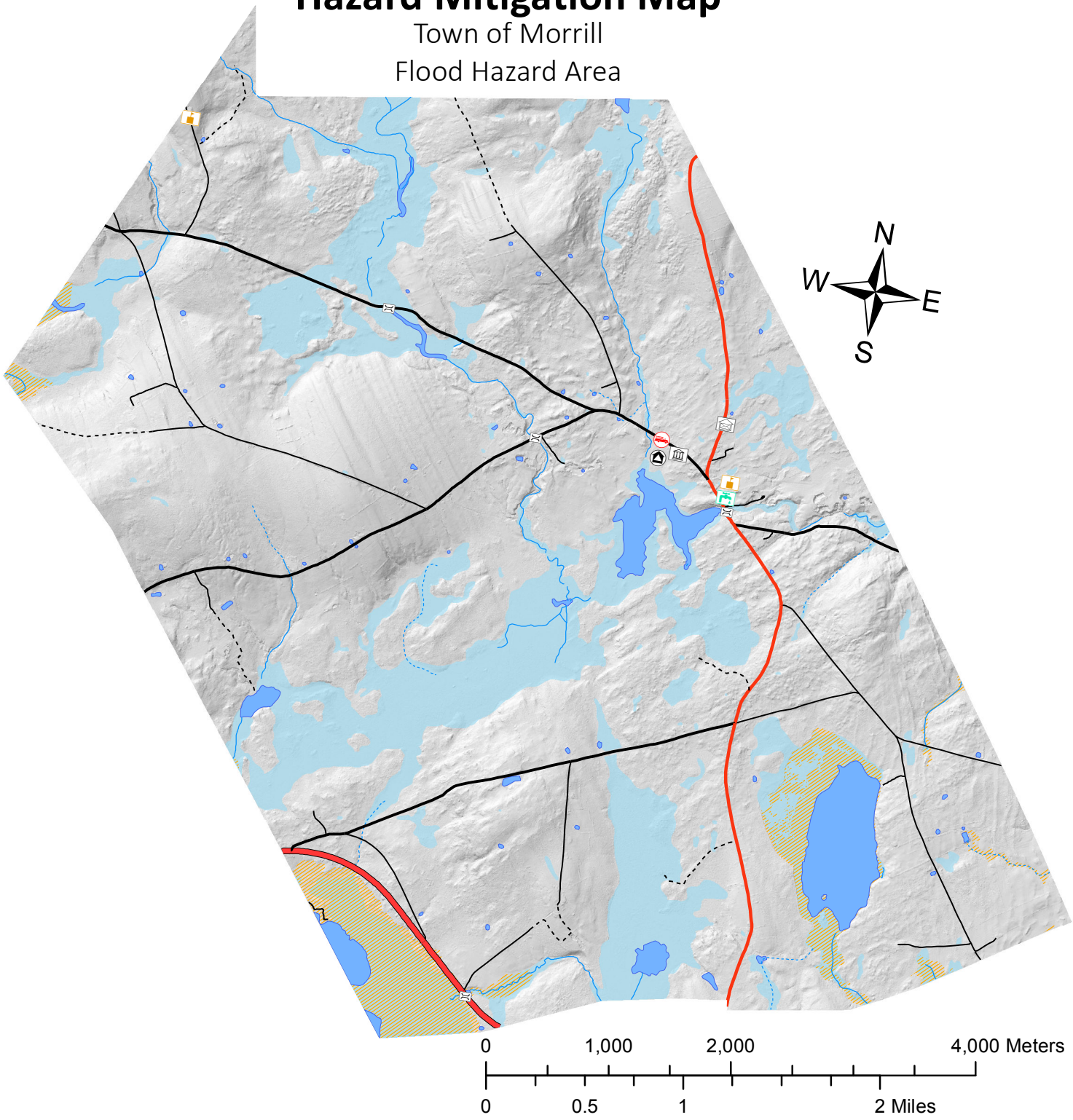
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

# Hazard Mitigation Map

Town of Morrill

Flood Hazard Area




## Legend

**Critical Facilities**

- Alternative School
- Elementary School
- EOC
- Fire
- Post Office
- Town Office
- Water Supply

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 01-07-2015

# Hazard Mitigation Map

Town of Northport

Flood and Hurricane Hazard Areas

## Legend

**Critical Facilities**

- Elementary School
- EOC
- Fire
- Town Office
- Water Supply

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

**Flood Zones (FIRM 2014)**

- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

**Storm Surge (mean high tide)**

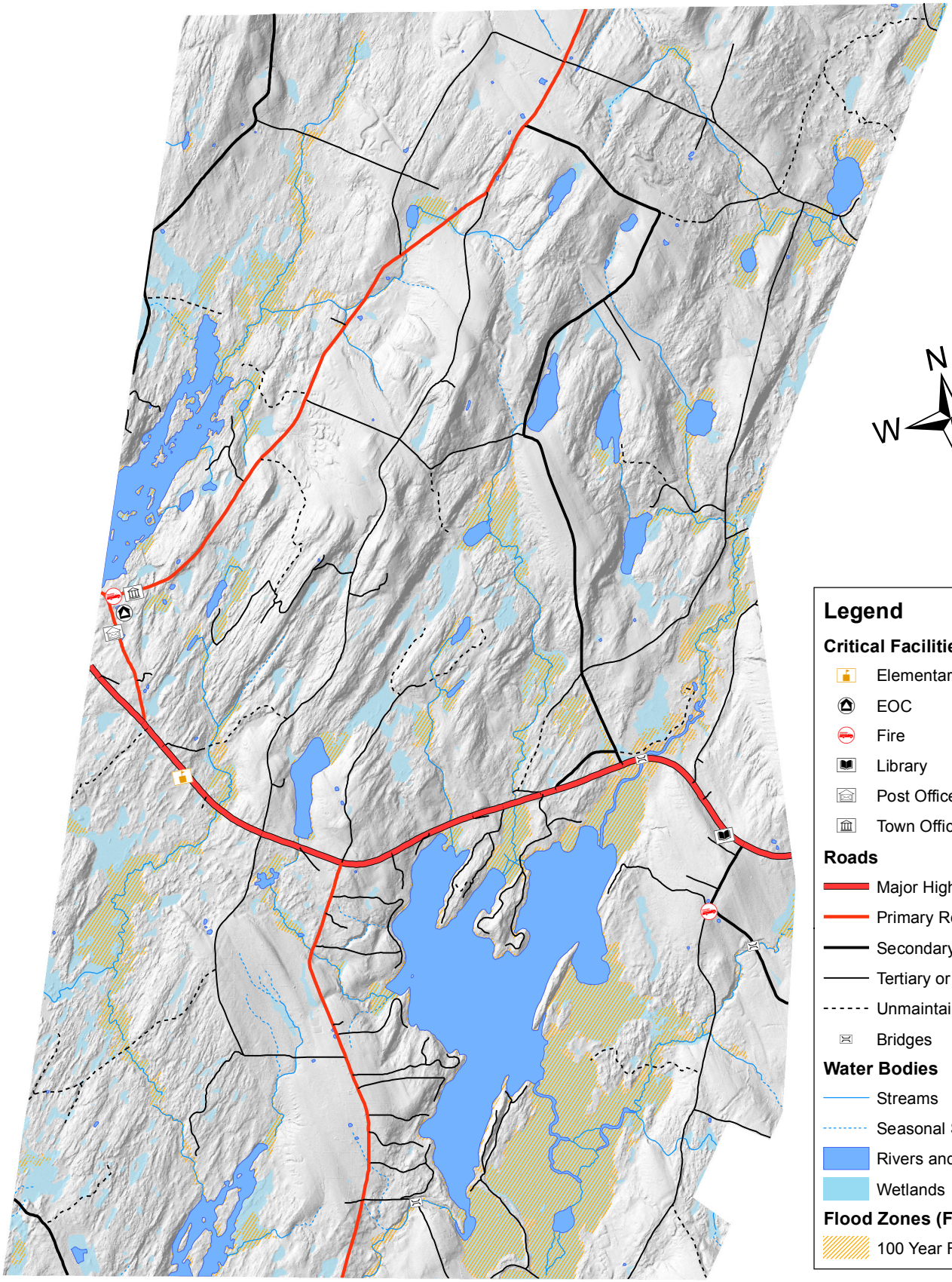
- Category 1 Hurricane
- Category 2 Hurricane

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

# Hazard Mitigation Map

Town of Palermo

Flood Hazard Area



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## Legend

**Critical Facilities**

- Elementary/Middle School
- EOC
- Fire
- Library
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

0 1,000 2,000 4,000 Meters

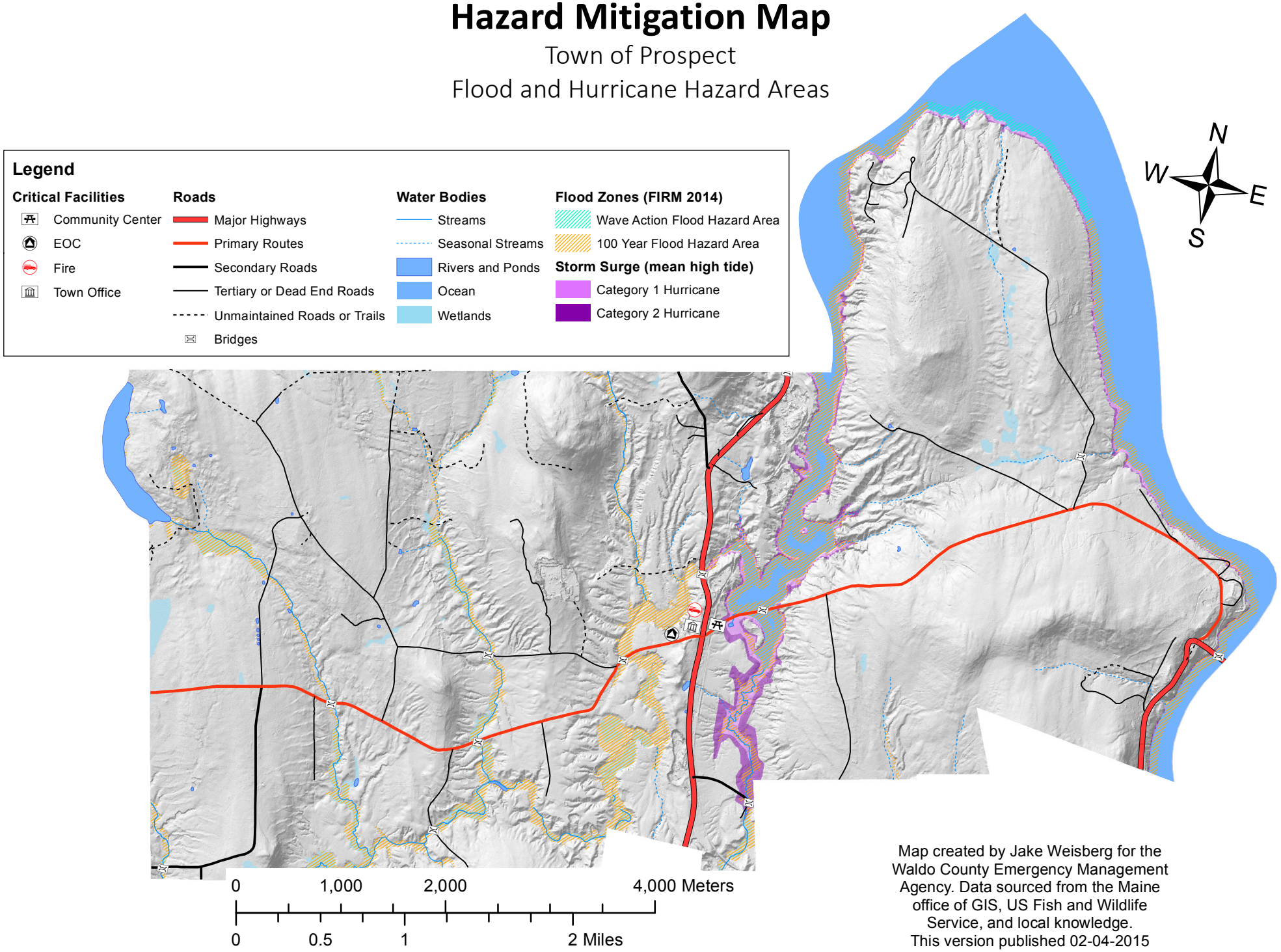
0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-04-2015

# Hazard Mitigation Map

Town of Prospect

Flood and Hurricane Hazard Areas

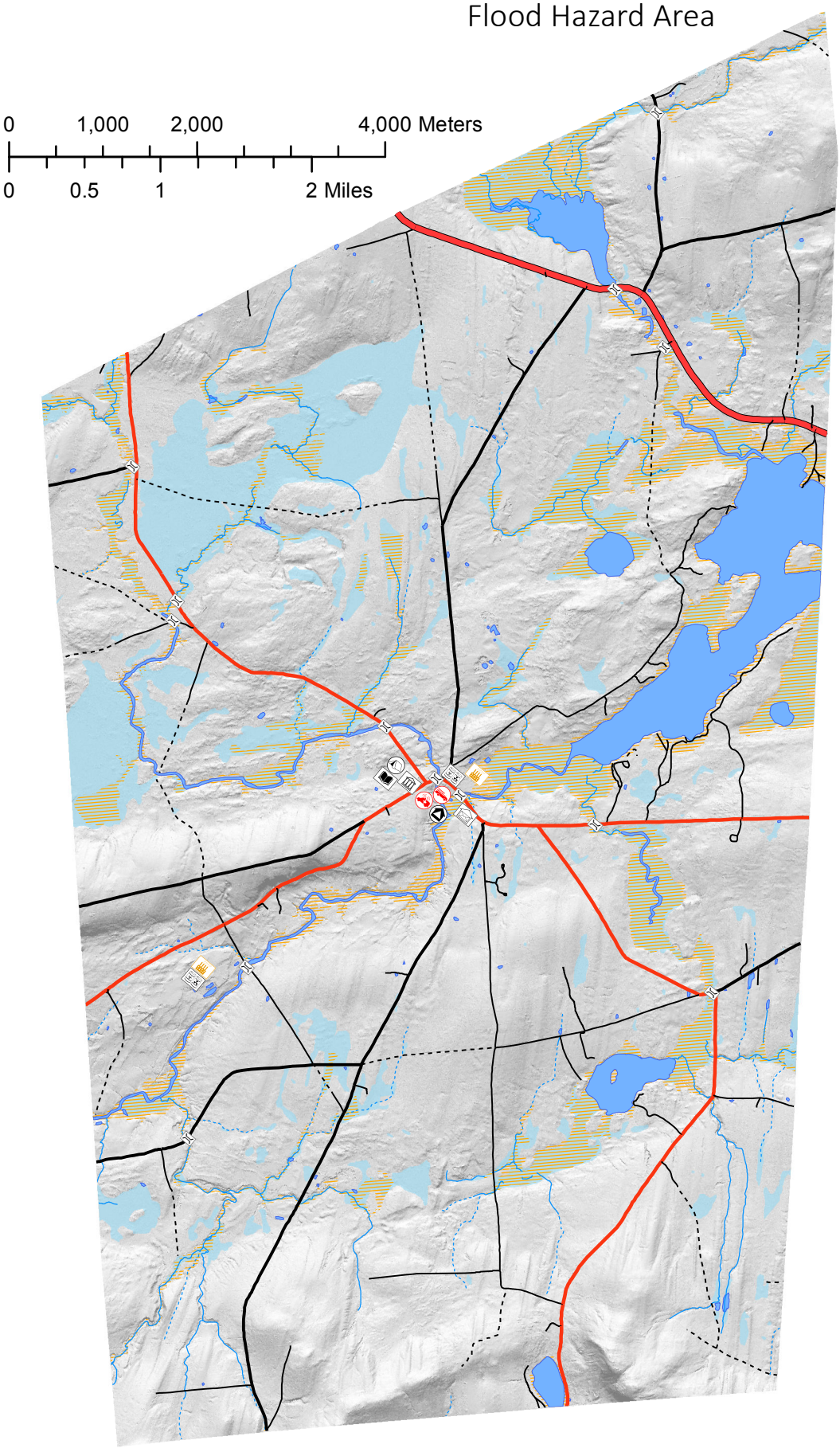



Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

# Hazard Mitigation Map

Town of Searsmont

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary/Middle School
- EMS
- EOC
- Fire
- Hazmat (Petroleum)
- Industrial Facility
- Library
- Police
- Post Office
- Red Cross Shelter
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

N W E S

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

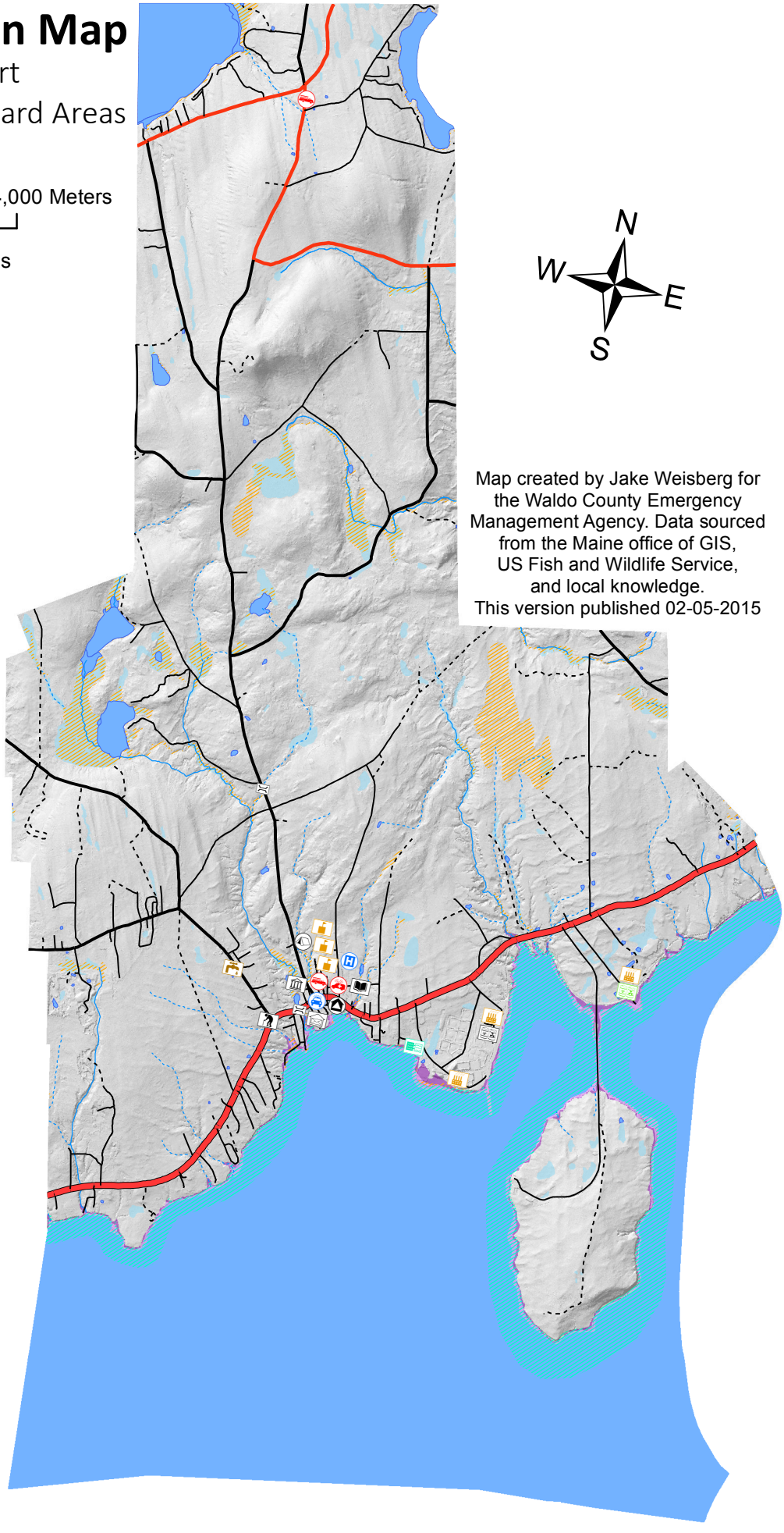
# Hazard Mitigation Map

Town of Searsport

Flood and Hurricane Hazard Areas

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles



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W E

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Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-05-2015

## Legend

**Critical Facilities**

- Assisted Living
- Elementary School
- EOC
- EMS
- Fire
- Hazmat (EHS)
- Hazmat (Petroleum)
- High School
- Hospital
- Industrial Facility
- Library
- Middle School
- Police
- Post Office
- Red Cross Shelter
- Town Office
- Water Management
- Water Treatment

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

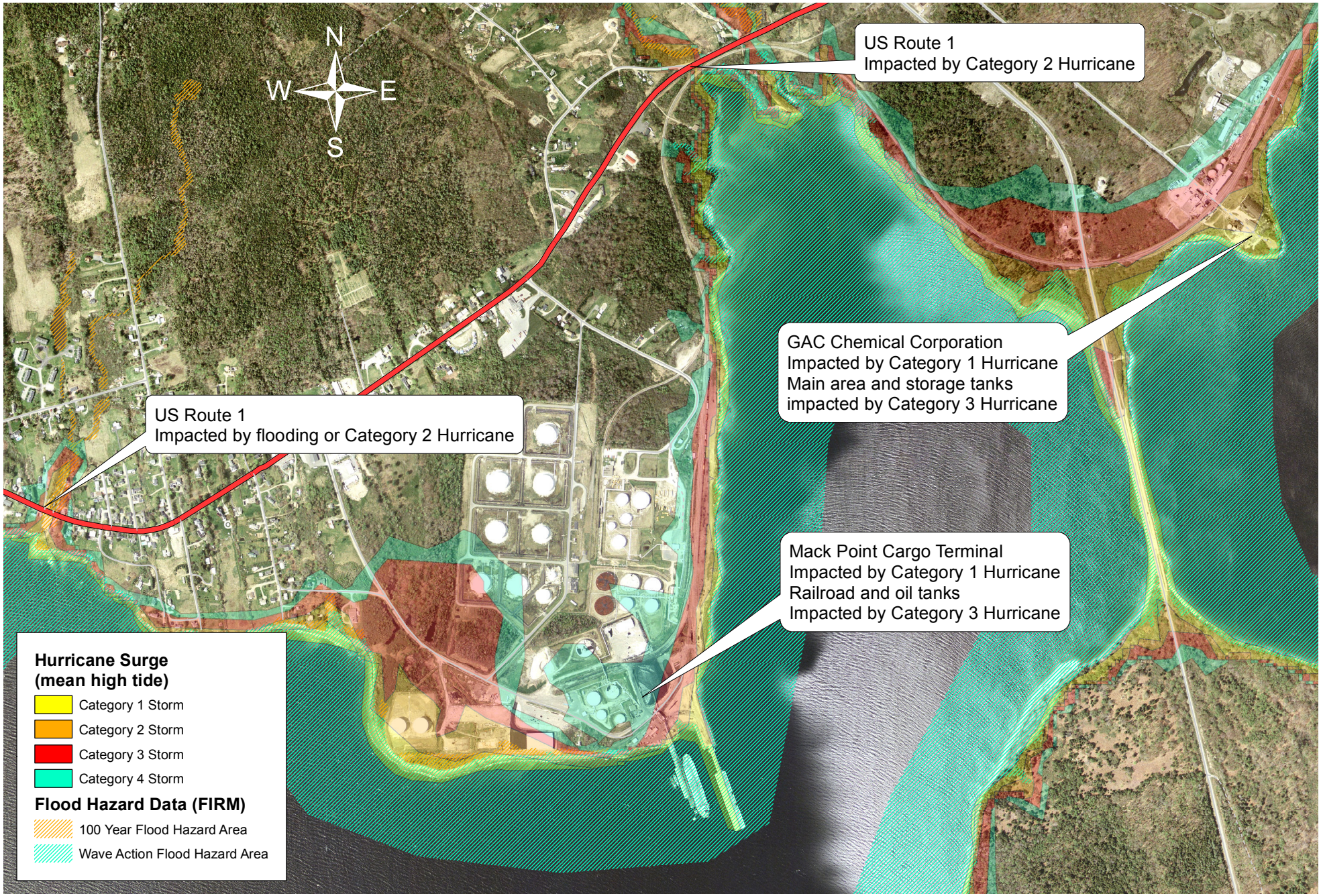
**Flood Zones (FIRM 2014)**

- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

**Storm Surge (mean high tide)**

- Category 1 Hurricane
- Category 2 Hurricane

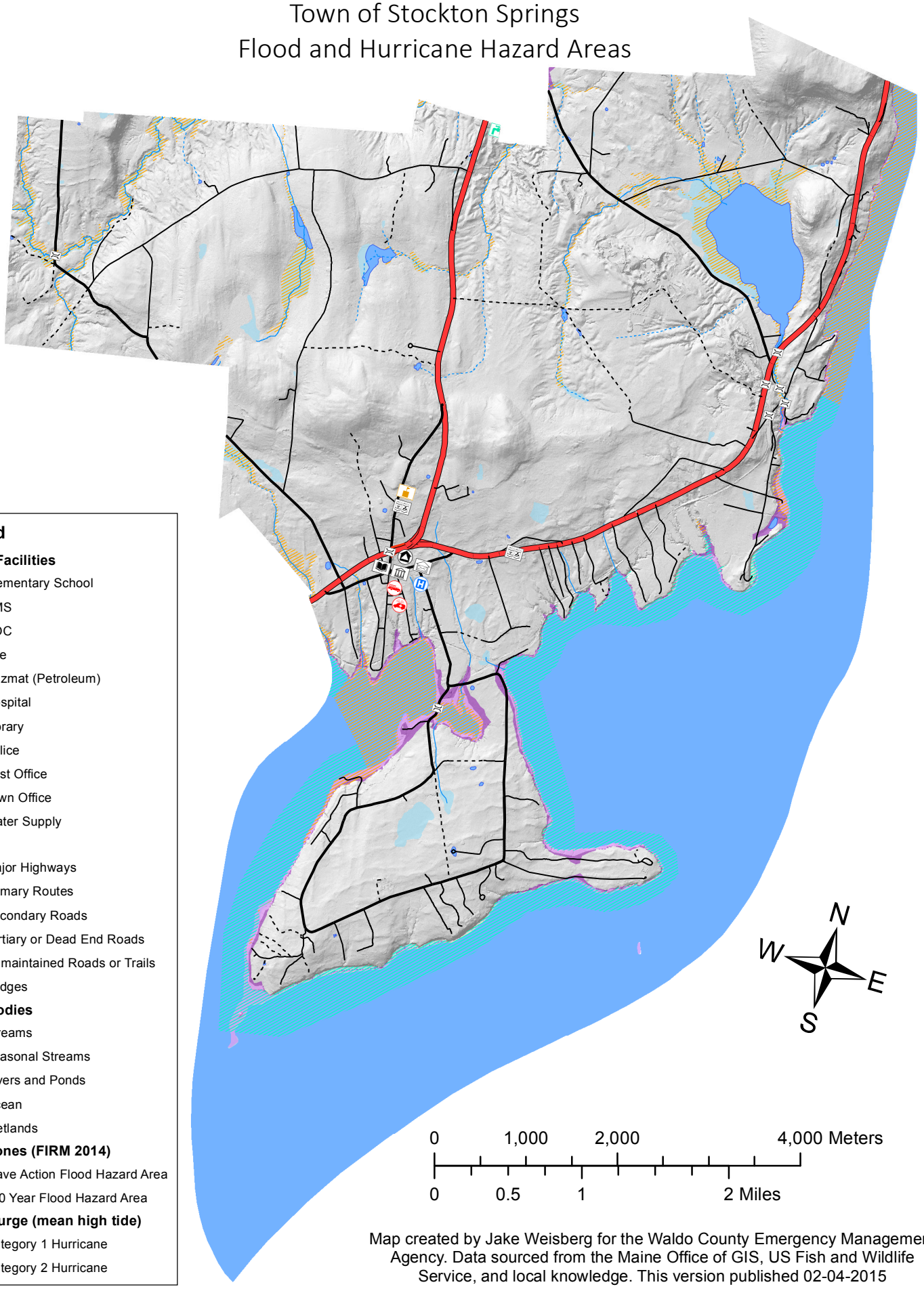
# Facilities in Flood/Hurricane Hazard Zones
# Searsport Coastline



# Hazard Mitigation Map

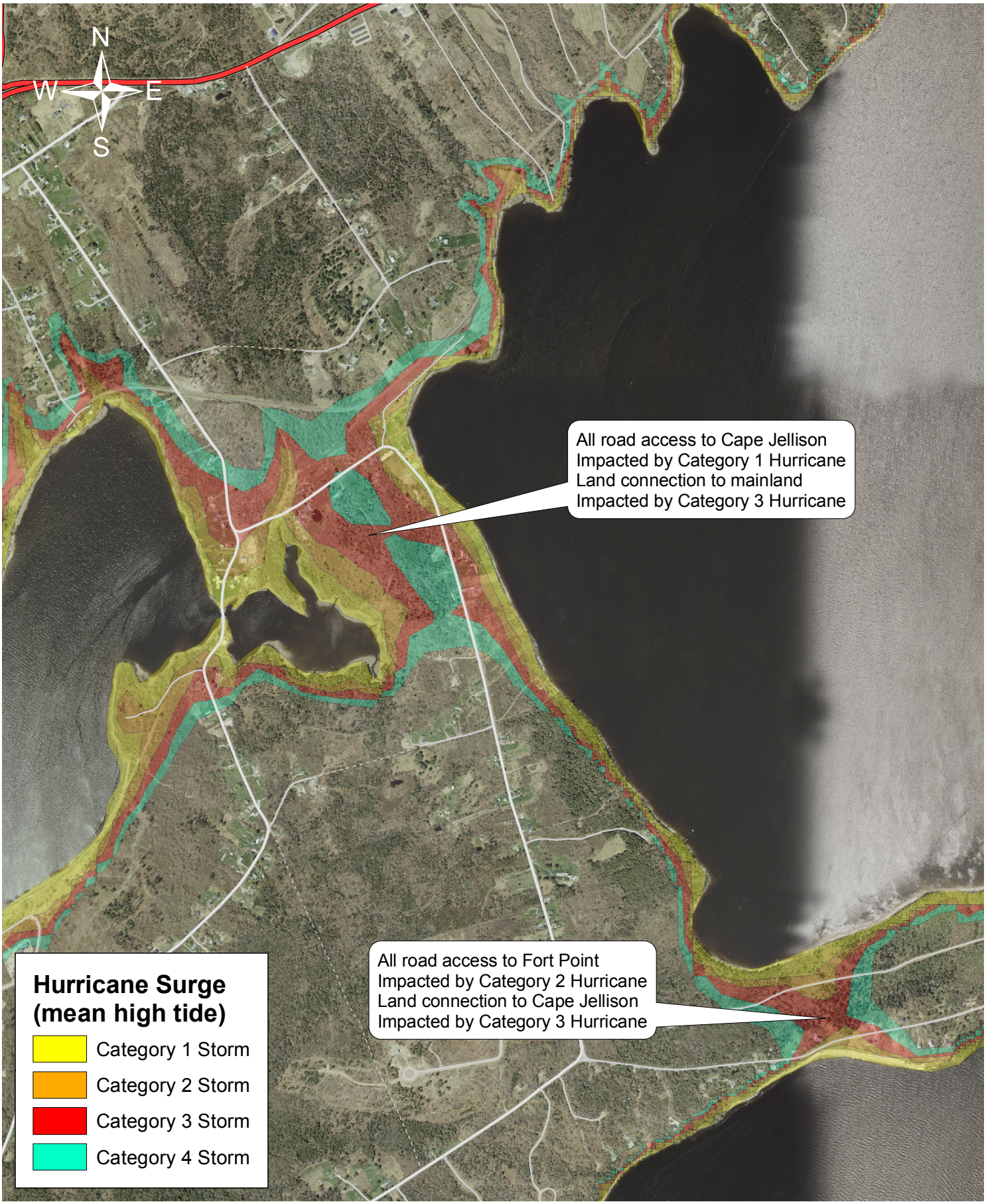
Town of Stockton Springs

Flood and Hurricane Hazard Areas




Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine Office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-04-2015

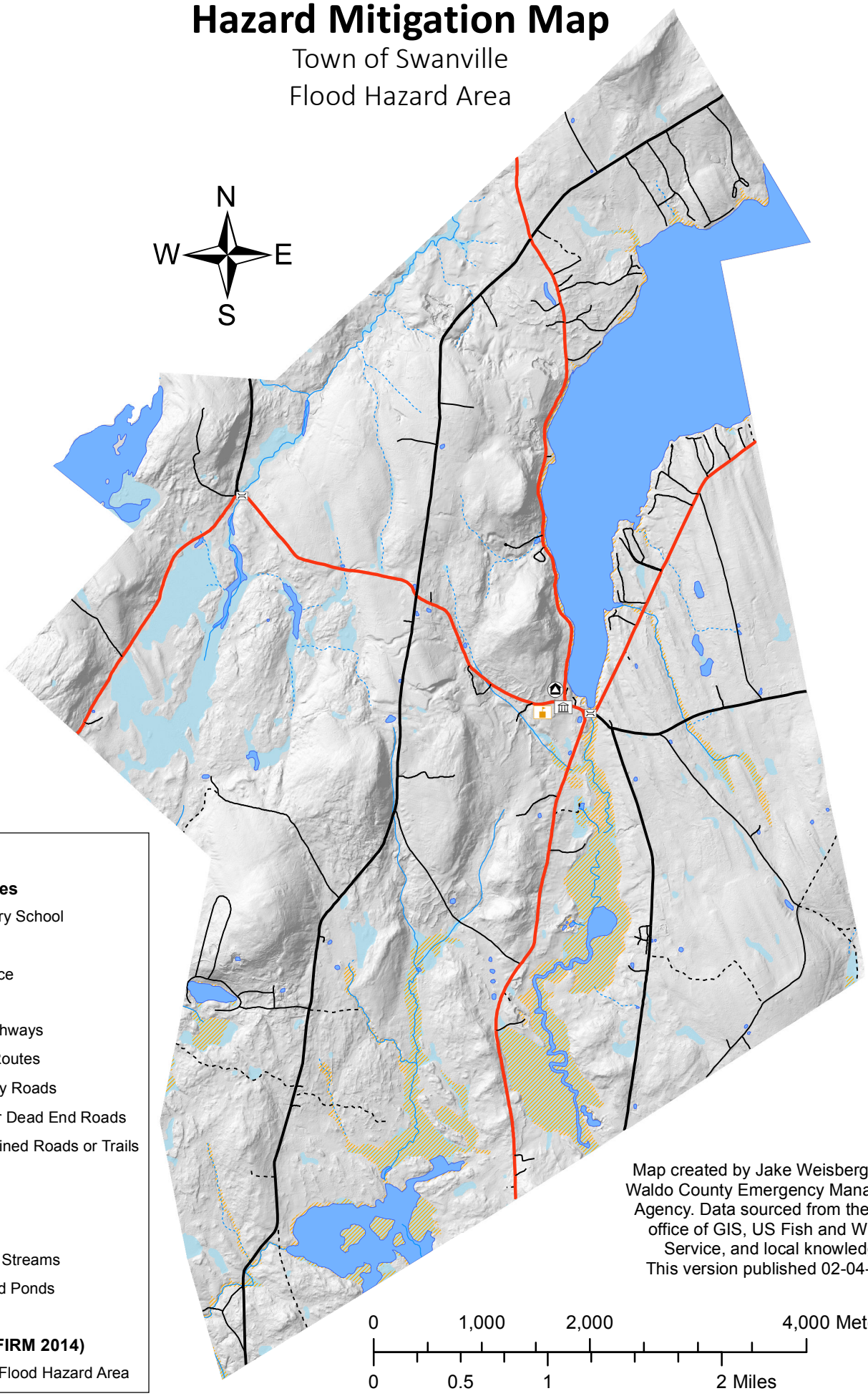
# Facilities in Flood/Hurricane Hazard Zones
# Cape Jellison



# Hazard Mitigation Map

Town of Swanville

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary School
- EOC
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

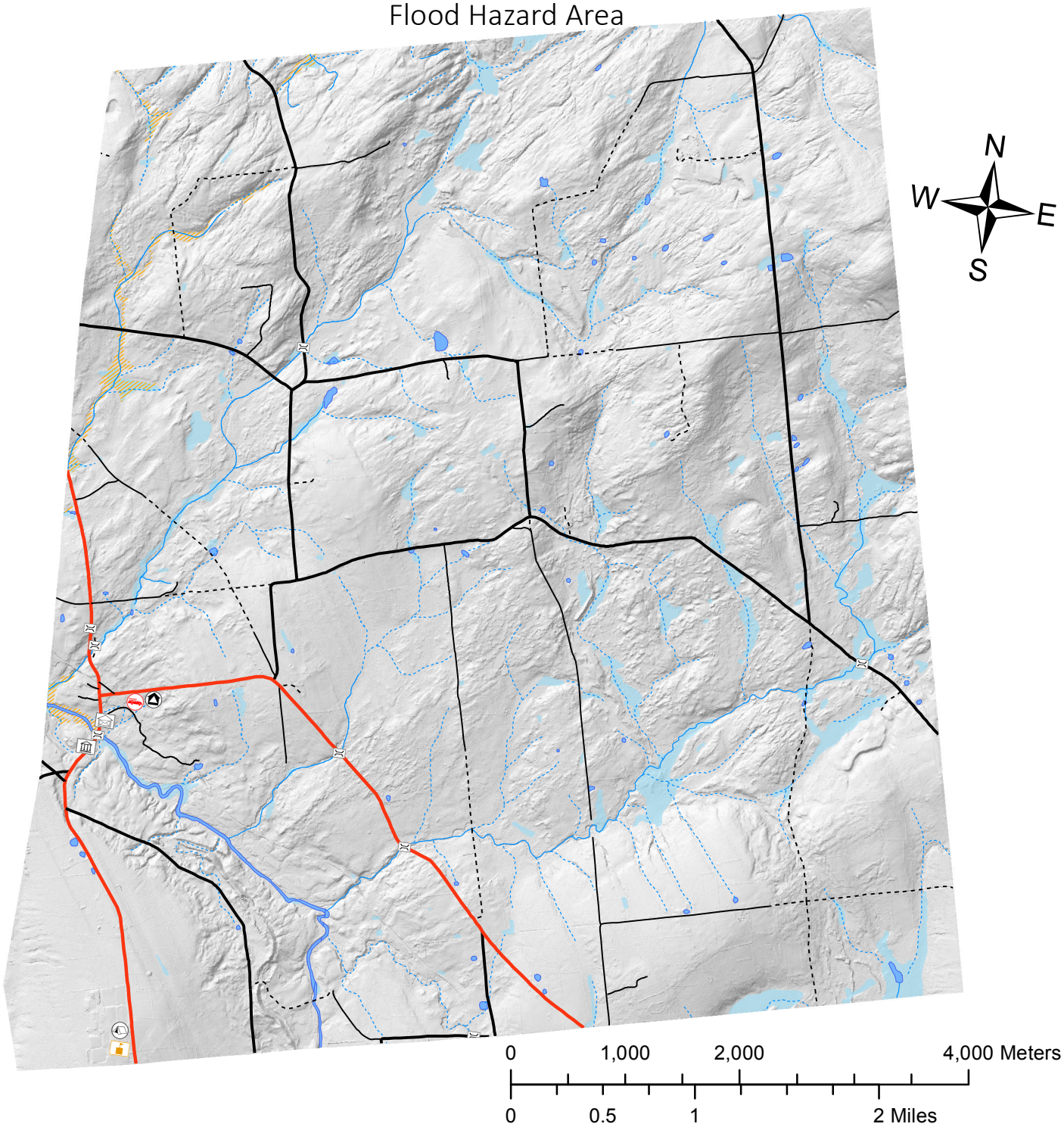
0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

# Hazard Mitigation Map

Town of Thorndike

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary/Middle/High School
- EOC
- Fire
- Post Office
- Red Cross Shelter
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Freshwater Pond; Riverine
- Wetlands

**Flood Zones (FIRM 2014)**

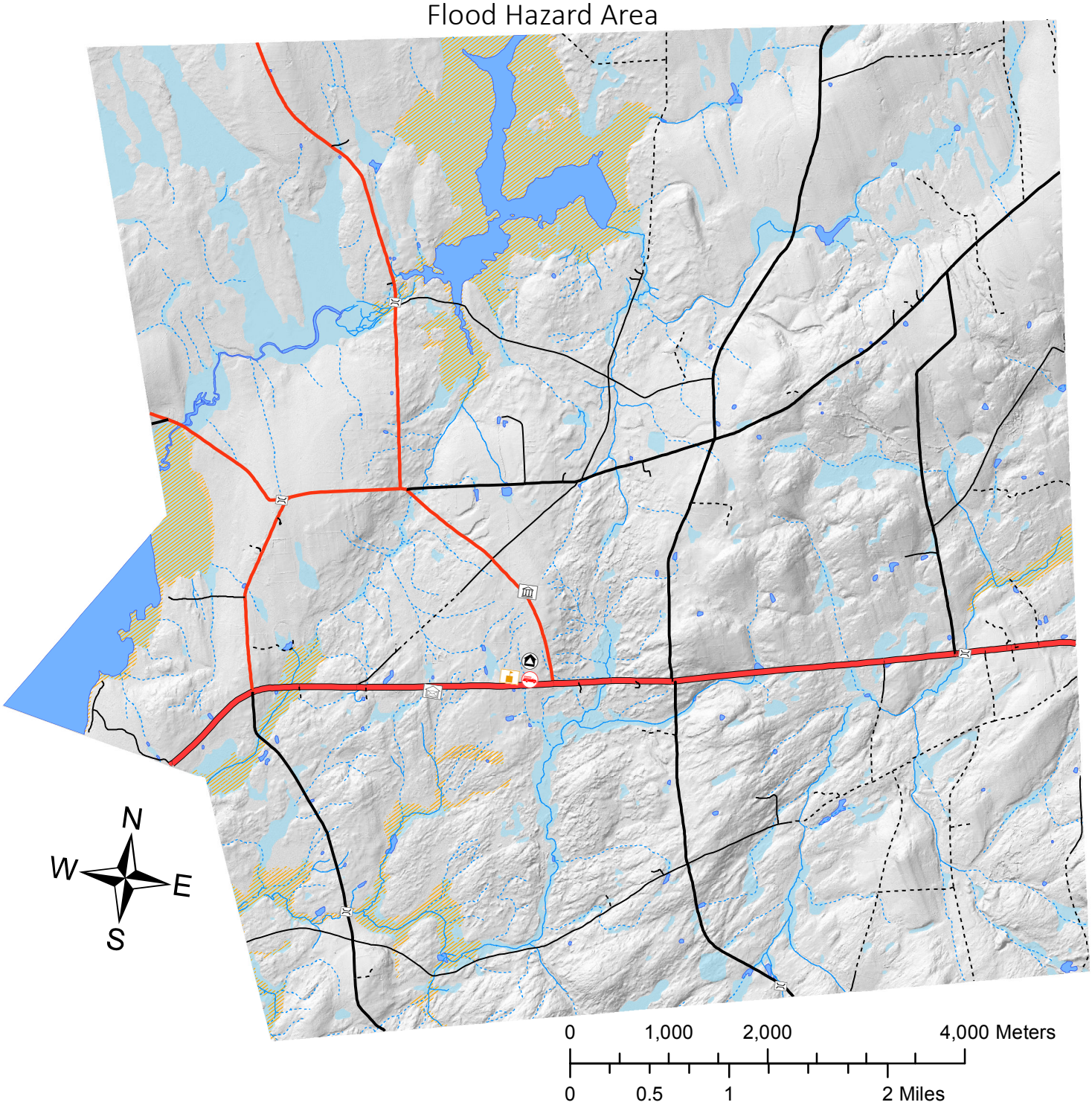
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency.
Data sourced from the Maine Office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

# Hazard Mitigation Map

Town of Troy

Flood Hazard Area




## Legend

**Critical Facilities**

- Elementary School
- EOC
- Fire
- Post Office
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

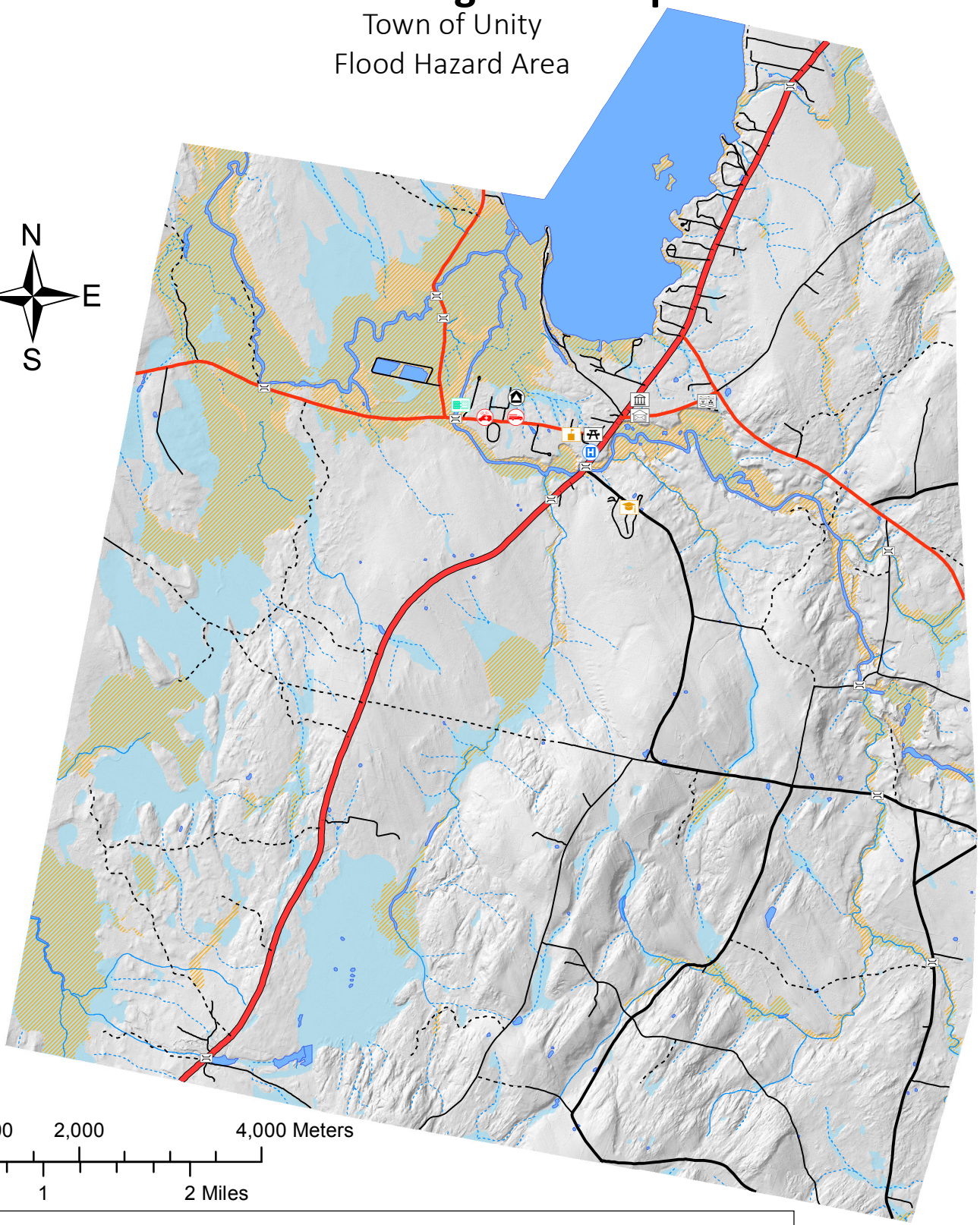
- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine office of GIS, US Fish and Wildlife Service, and local knowledge.
This version published 02-04-2015

# Hazard Mitigation Map

Town of Unity

Flood Hazard Area




## Legend

**Critical Facilities**

- College
- Community Center
- Elementary School
- EMS
- EOC
- Fire
- Hazmat (Petroleum)
- Hospital
- Post Office
- Town Office
- Water Treatment

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

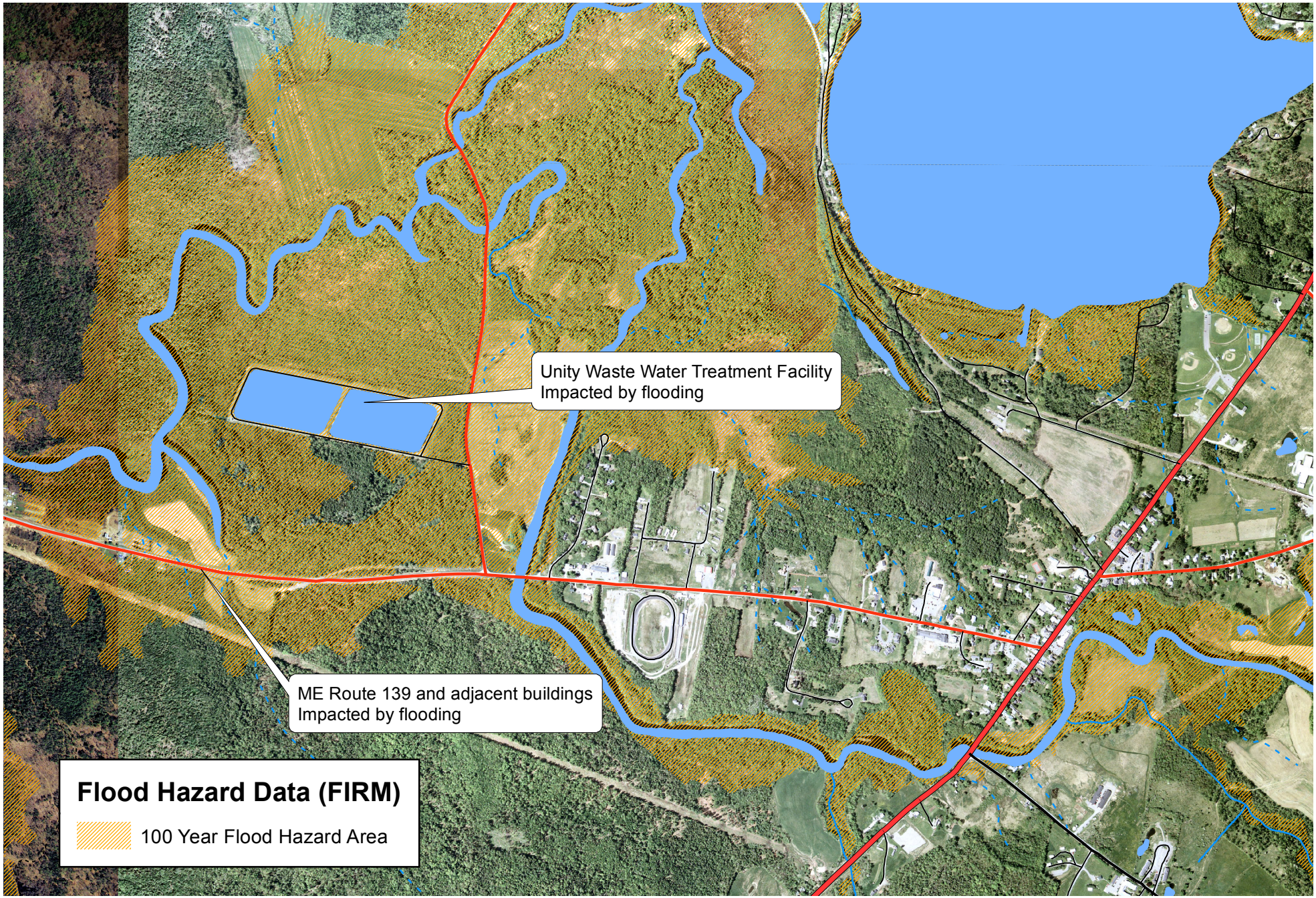
- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine Office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-05-2015

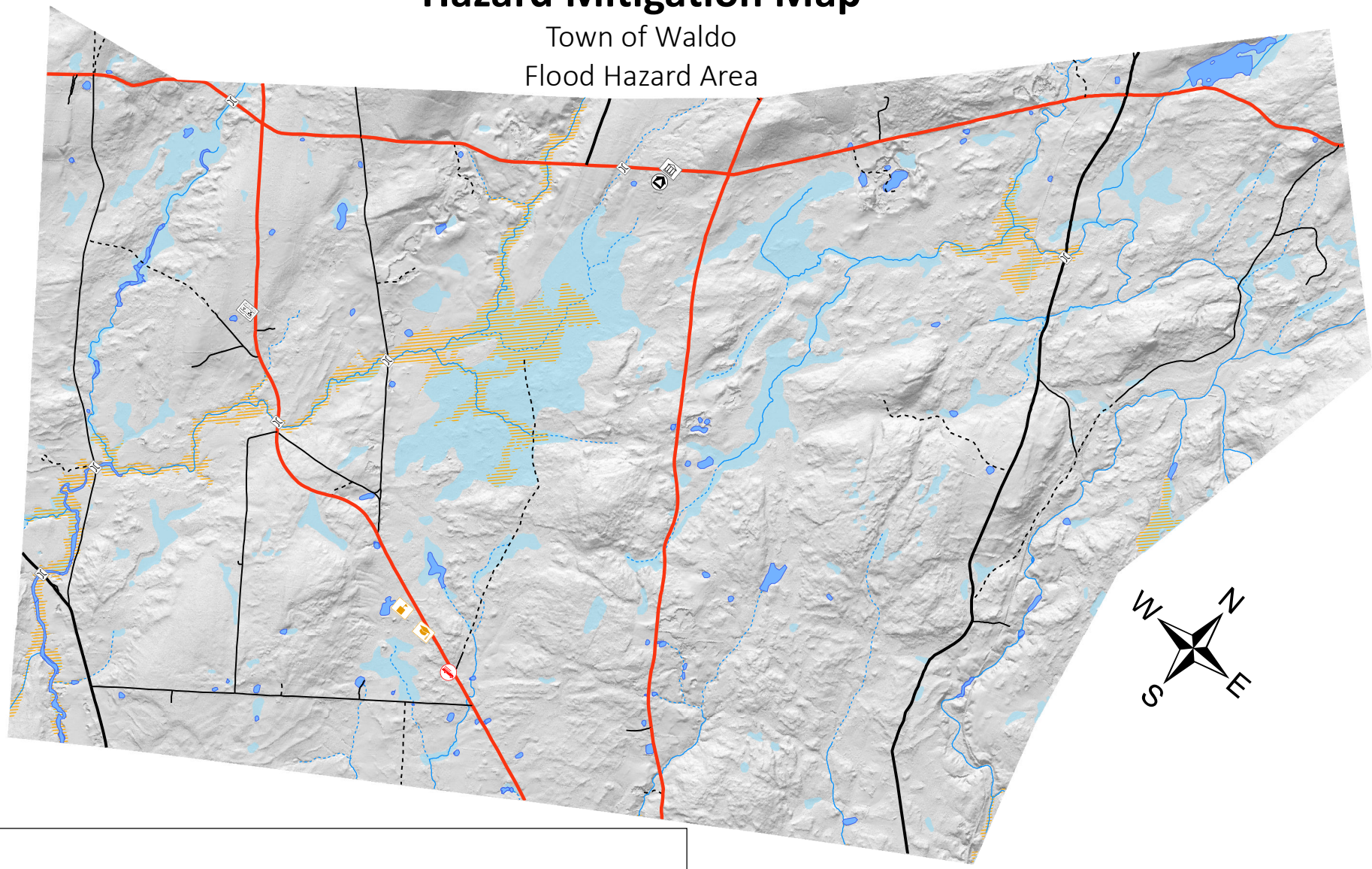
# Facilities in Flood/Hurricane Hazard Zones
## Unity



# Hazard Mitigation Map

Town of Waldo

Flood Hazard Area



**Legend**

**Critical Facilities**

- College
- EOC
- Fire
- Hazmat (Petroleum)
- High School
- Town Office

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Wetlands

**Flood Zones (FIRM 2014)**

- 100 Year Flood Hazard Area

0 1,000 2,000 4,000 Meters

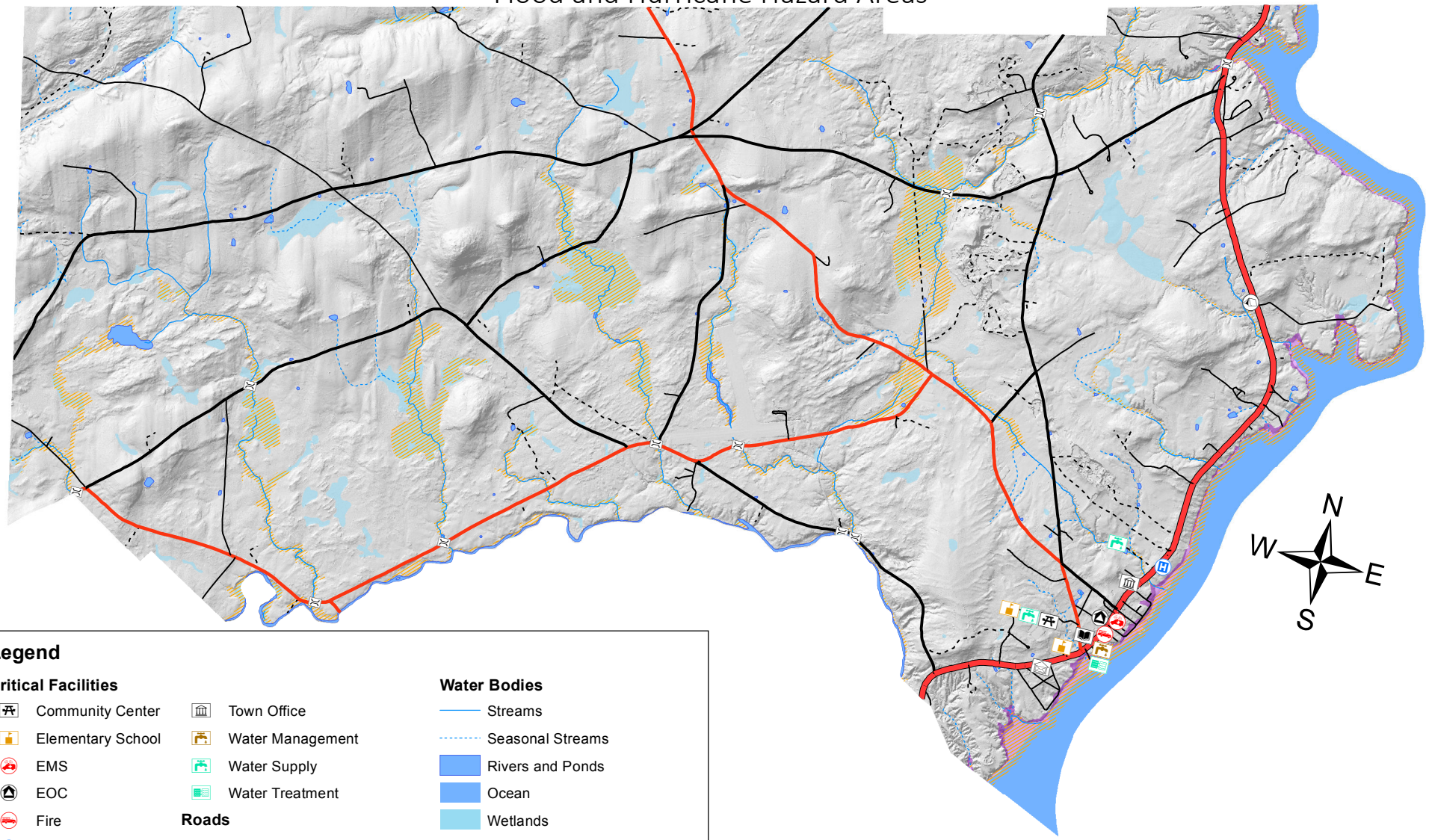
0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine Office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-05-2015

# Hazard Mitigation Map

Town of Winterport

Flood and Hurricane Hazard Areas




## Legend

**Critical Facilities**

- Community Center
- Elementary School
- EMS
- EOC
- Fire
- Hospital
- Library
- Middle School
- Post Office
- Red Cross Shelter
- Town Office
- Water Management
- Water Supply
- Water Treatment

**Roads**

- Major Highways
- Primary Routes
- Secondary Roads
- Tertiary or Dead End Roads
- Unmaintained Roads or Trails
- Bridges

**Water Bodies**

- Streams
- Seasonal Streams
- Rivers and Ponds
- Ocean
- Wetlands

**Flood Zones (FIRM 2014)**

- Wave Action Flood Hazard Area
- 100 Year Flood Hazard Area

**Storm Surge (mean high tide)**

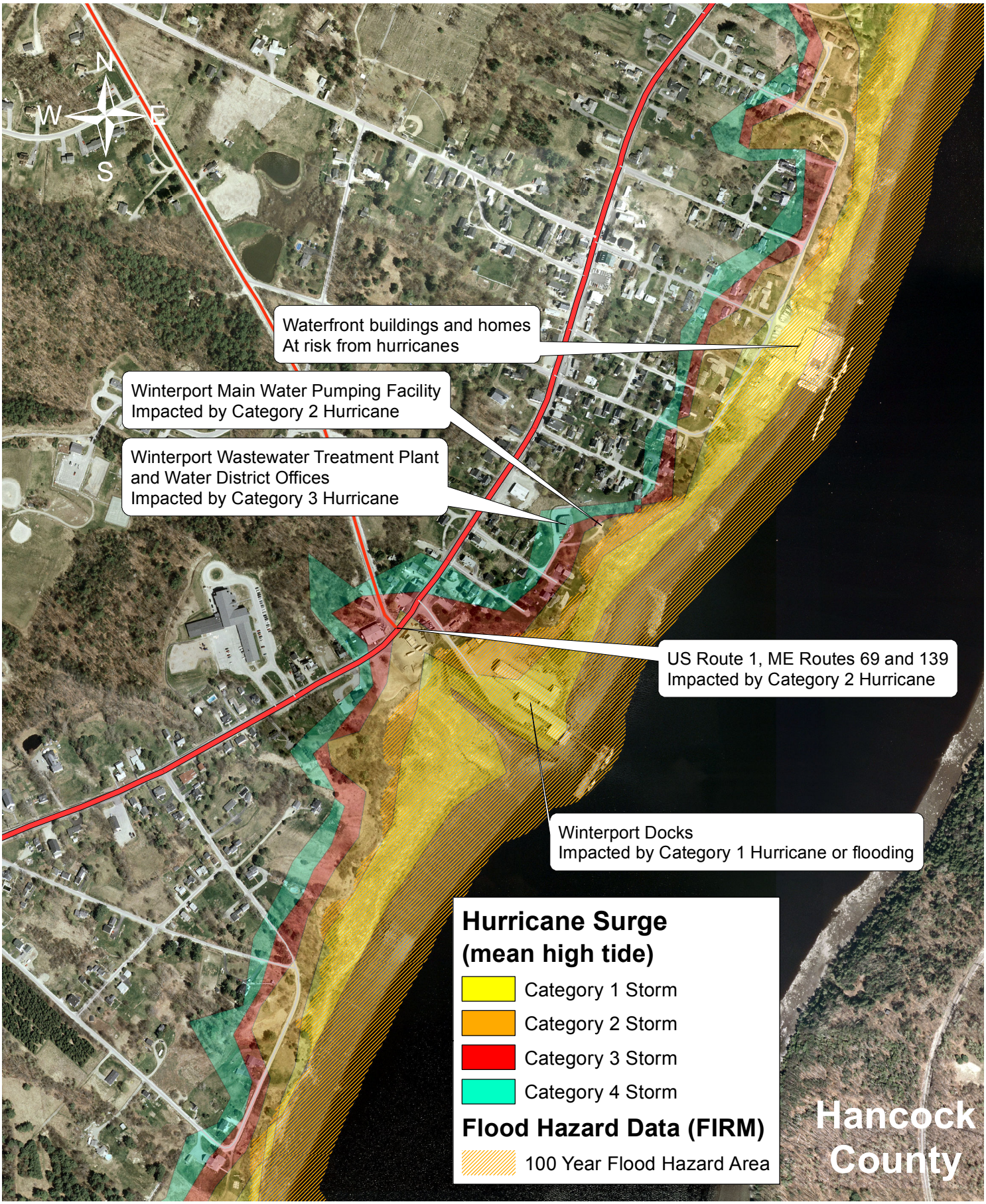
- Category 1 Hurricane
- Category 2 Hurricane

0 1,000 2,000 4,000 Meters

0 0.5 1 2 Miles

Map created by Jake Weisberg for the Waldo County Emergency Management Agency. Data sourced from the Maine Office of GIS, US Fish and Wildlife Service, and local knowledge. This version published 02-05-2015

# Facilities in Flood/Hurricane Hazard Zones
# Winterport Downtown



## ASSESSING VULNERABILITY: OVERVIEW

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| **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]** |

The Hazard Mitigation Plan identified critical facilities located 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 general 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 critical facilities identified in Waldo County are municipal offices, fire and police stations, ambulance garages, post offices, town garages and sand/salt sheds, hospitals and clinics, electric and communication utilities, water and wastewater treatment facilities, hazardous material sites, large employers and public schools.

Severe winter storms will primarily impact power and telecommunications hard lines and roadways. Electrical and telephone lines may be torn down due to falling trees. Roadways will either be covered in deep snow, ice, or tree and utility line debris. Residents will be impacted by utility outages, however, the utility companies are private and utility repairs are not a responsibility of the Towns. Town governments will look to provide emergency power for public facilities and mass care for its residents.

High winds from hurricanes, severe summer storms or microbursts will primarily impact power and telecommunications hard lines and roadways. Electrical and telephone lines may be torn down due to falling trees. Roadways will either be covered with utility line debris. High winds may also cause trees to fall on homes, businesses and public building. There is no history of hurricane winds in Waldo County severely damaging structures. However, public safety radio communications towers could be damaged or destroyed. Flooding from hurricanes will be covered in the next paragraph. Residents will be impacted by utility outages, however, the utility companies are private and utility repairs are not a responsibility of the Towns. Town governments will look to provide emergency power for public facilities and mass care for its residents.

Flooding can result from winter storms, severe summer storms, tropical storms, hurricanes or spring runoff. Flooding in Waldo County will primarily impact roadways and storm water management systems that become overwhelmed by the storm water runoff. Roadways, culverts, and ditches become flooded and washed out. There are various locations around local lakes that can cause minor flooding to homes and camps along the lakes, especially during spring runoff. Hurricanes may cause local coastal flooding from storm surge to coastal businesses and homes.

## ASSESSING VULNERABILITY: ADDRESSING REPETITIVE LOSS PROPERTIES

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| **Requirement §201.6(c)(2) (ii):** | **[The risk assessment must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.]** |

The Director of the Maine Floodplain Management Program, an office within the Department of Agriculture, Conservation and Forestry Maine, was consulted regarding NFIP insured structures that have been repetitively damaged by floods. The Director provided the information, with the stipulation that the addresses of the properties are not published in the plan, due to privacy issues.

There are 175 NFIP insurance policies in Waldo County, about 0.8 % of the total homes (21,566) in the County. Total 2015 coverage is $32,888,000, with total premiums of $164,692. Total number of claims is 55 since 1978, an average of 1.5 claims per year. Total claims paid has been $509,894 since 1978; an average of $13,781 per year. Total paid per claim is $9,271.

There were only two repetitive loss properties in all of Waldo County. One, a business, is located in the town of Lincolnville and one, a residence, in the Town of Unity. The property in Lincolnville has been damaged by coastal flooding and the property in Unity has been damaged by lakeside flooding.

Both properties were last damaged over 18 years ago. The total payments paid by the NFIP to repetitive loss properties in Waldo County was $123,413.75.

Since there have been no payouts for repetitive loss properties in over 18 years and we have had several dozen flood events in the past 18 years (including in the areas those two properties are located), it appears that these two properties have been retrofitted to mitigate further damages.

## ASSESSING VULNERABILITY: IDENTIFYING STRUCTURES

| Requirement §201.6(c)(2) (ii)(A): | The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. |
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**Existing Critical Facilities**: The Waldo County Emergency Management Agency used existing Maine GIS map data and a handheld GPS data collector to map and locate the County's critical facilities and determine which are most likely to be affected by hazards. The three hazards most likely to impact the County are severe winter storms, severe summer storms/hurricanes, and flooding. The analysis revealed the following:

Severe Winter Storm Hazard: A "Northeaster", blizzard or ice storm of the severity that occurs at least once every 3-5 years would have an 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 will be felled. No critical structures were identified as in danger from a severe winter storm.

Flooding Hazard: A 100-year flood could have an impact on the Winterport Docks and the Unity Waste Water Treatment Plant. The most likely coastal flooding will occur from storm surge created by a "Northeaster". The most severe, though less likely, coastal flooding would be caused by a Category 1 Hurricane. The downtown areas of Lincolnville Beach, Belfast and Searsport, residential areas in Lincolnville, Northport, Belfast, Searsport, Stockton Springs, Prospect, Frankfort, Winterport, and Islesboro could be partially flooded by a Category 1 Hurricane. A Category 1 hurricane could impact the Penobscot McCrum Potato processing plant, the Front Street Shipyard, the Belfast Boathouse, the Frankfort Town Office & Post Office, the Islesboro Ferry landings, the Lincolnville Beach Fire Station, the Mack Point Cargo Terminal, and the Winterport Docks. A Category 2 storm could impact the Belfast Wastewater Treatment Plan, the Lincolnville Beach Post Office, and the Winterport Water Pumping Facility.

However, the most likely damage in the County from flooding that occurs at least once every two years is damage to local roads.

Hurricane Hazard: Hurricanes could impact the same facilities listed under Flooding and Winter Storms.

In addition to critical facilities, Waldo County contains at-risk populations that should be factored into a vulnerability assessment. These include a relatively large population of elderly residents who live alone in very rural areas and who have with limited mobility.

An analysis of the local municipal comprehensive plans and general growth patterns for the Waldo County communities indicates that there will be a slight but constant increase (5-8%) in residents expected over the next 10 years.

Commercial growth in the past 21 years has been mostly limited to the City of Belfast, with the arrival of the credit card giant, MBNA-New England in the mid-1990s. The MBNA facility was bought by Bank of America in 2005. BoA sold off half the old MBNA campus to AethnaHealth in 2011. Except for Bank of America and AethnaHealth, there has been only sporadic and small scale commercial or industrial development in Waldo County. This trend is expected to continue. The top four employers in Waldo County include AthenaHealth, Bank of America, Waldo County Healthcare Inc., and the local school districts.

The majority of the residential development and population increase in Waldo County in the last 10 years has occurred in Belfast, Northport, Palermo, Searsmont, and Unity. Relative to their population sizes, Belmont, Freedom, Morrill, Prospect, Searsmont, and Thorndike all experienced large population growths, though small in actual numbers.

**Future Critical Facilities**:

Most of the Waldo County towns have very small populations; are very rural; and do not have planning departments, building codes or even a full time code enforcement officer (CEO). (Six of the towns all have the same part-time CEO who is a retired hardware store owner). The State of Maine has a State building code based on the International Building Code. However, only towns with a population of 4,000 or greater must enforce the State Building Code. None of the municipalities in Waldo County are required to enforce building codes, except Belfast. Only the City of Belfast has a full time CEO.

Assessing where future development will occur in the towns in Waldo County is difficult due to a lack of municipal data, planning, policies and programs. There is very little commercial, industrial, and public construction present in most of these communities. There is some residential construction; however, there is very little controlling guidance on single-family home construction in the State of Maine at any level of government. Shore-land zoning, floodplain ordinances, and septic system designs are about the only controlling guidance in residential construction.

Severe Winter Storm Hazard: It is very unlikely that a severe winter storm will have any impact on future structures. This hazard primarily impacts local roads and overhead utility lines.

Severe Summer Storms/Hurricane: Hurricanes in Waldo County towns primarily threaten coastal residential structures in the storm surge inundation areas. Severe summer storms, such as microbursts and strong thunderstorms and knock down tall trees anywhere in the county. All Waldo County municipalities allow homes to be built anywhere, in any land use zone. Hurricanes also primarily impact local roads and overhead utility lines. Homes could be damaged by falling trees.

Flooding Hazard: The majority of damages from flooding in Waldo County is to roadways, not structures. We were unable to find any records of public structures being lost in the County due to flooding. However, 24 of 26 towns do have floodplain ordinances that provide some control over development in identified flood zones. FEMA recently released and the towns adopted updated flood maps. The two towns that are not in the NFIP, do not have any special flood hazard areas that could ever flood structures – they are primarily streams that could potentially overtop local roads (most are old gravel roads with insufficient storm drainage).

## ASSESSING VULNERABILITY: ESTIMATING POTENTIAL LOSSES

| Requirement §201.6(c)(2) (ii)(B): | The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate… |
|---|---|

The Waldo County Emergency Management Agency and the Hazard Mitigation Planning Team, used GIS modeling, GPS data collection, field inspections, and historical data to estimate the potential dollar losses if the County were to experience severe winter storms, flooding, and wildfires, the most likely hazards to occur in the County. Average costs from road snow removal, sand and salting of roads and tree clearance in public ways were provided by those towns that participated in this version of the plan. The vulnerable structures and facilities were identified earlier in the planning process. See the County and Municipal Base Maps to locate the Facilities impacted by the Hazard Areas.

The Waldo County Hazard Mitigation Planning Team estimated the potential losses from Severe Winter Storms, Flooding, and Severe Summer Storms/Hurricanes.

It was decided to only determine the cost of potential losses to public property. Numbers of residential structures in flood zones were calculated and significant private infrastructure is listed. However, costs due to losses for private facilities and utilities were not included. Additionally, damage estimates for those municipalities not participating in this version of the plan were not calculated or included.

**Potential Severe Winter Storm losses**

The primary damages expected to occur in Waldo County during a "Northeaster", blizzard or ice storm would be to overhead utility lines and local roads. In calculating the damage costs, the Planning Team assumed that all local roads would be covered in snow or ice or blocked with tree and utility line debris.

Damage estimate were not completed for electrical power lines and telephone lines because these utilities are privately owned and insured.

No critical structures were identified as in danger from a severe winter storm in Waldo County.

The following table includes centerline road miles in each town as provided by the Maine Department of Transportation. The figures are current as of January 9, 2009.

| Town | State Hwy | State Aid | Town Way | Other | Total |
|---|---|---|---|---|---|
| Belfast | 18.35 | 12.97 | 52.82 | 0 | 84.14 |
| Belmont | 3.43 | 4.01 | 12.85 | 0 | 20.29 |
| Brooks | 6.13 | 5.2 | 24.87 | 0 | 36.2 |
| Burnham | 2.47 | 10.13 | 24.18 | 0 | 36.78 |
| Frankfort | 3.71 | 7.89 | 22.23 | 0 | 33.83 |
| Freedom | 4.82 | 7.03 | 17.85 | 0 | 29.7 |
| Islesboro | 0 | 4.58 | 26.45 | 0 | 31.03 |
| Jackson | 5.65 | 0 | 26.35 | 0 | 32 |
| Knox | 9.88 | 7.43 | 23.45 | 1.27 | 42.03 |
| Liberty | 4.19 | 10.69 | 23.78 | 0.59 | 39.25 |
| Lincolnville | 4.18 | 17.99 | 34.08 | 2.88 | 59.13 |
| Monroe | 0 | 10.1 | 42.09 | 0 | 52.19 |
| Montville | 3.99 | 14.15 | 41.69 | 4.84 | 64.67 |
| Morrill | 1.34 | 7.83 | 15.79 | 0 | 24.96 |
| Northport | 8.16 | 2.61 | 34.99 | 0 | 45.76 |
| Palermo | 5.89 | 9.46 | 37.21 | 0 | 52.56 |
| Prospect | 7.96 | 3.57 | 14.29 | 0 | 25.82 |
| Searsmont | 3.35 | 18.34 | 26.37 | 0 | 48.06 |
| Searsport | 8.55 | 11.55 | 33.13 | 0.48 | 53.71 |
| Stockton Springs | 8.97 | 3.45 | 30.83 | 1.41 | 44.66 |
| Swanville | 0 | 13.65 | 18.23 | 0.70 | 32.58 |
| Thorndike | 3.41 | 3.55 | 25.95 | 0 | 32.91 |
| Troy | 5.89 | 7.79 | 28.1 | 0 | 41.78 |
| Unity | 14.6 | 2.35 | 31.98 | 0 | 48.93 |
| Waldo | 7.32 | 7.39 | 13.51 | 0 | 28.22 |
| Winterport | 6.36 | 14.89 | 45.09 | 0 | 66.34 |
| **County Total** | 149.55 | 218.60 | 728.16 | 12.17 | 1,107.53 |

The table does not include 0.95 miles of Federal Interstate located in Burnham.

1) State Highways are fully maintained by the Maine Department of Transportation. These road miles will not be included in the damage cost estimation, since none of the Towns in Waldo County are responsible for them.

2) State Aid Highways are maintained by the Maine Department of Transportation. However, the Towns are responsible for winter time maintenance (snowplowing, debris removal, etc). The road miles will only be included for snow, ice, and tree removal costs from winter storms.

3) Town Ways are the responsibility of the Towns. All damages cost estimates will be included.

4) "Other" roads are maintained by the State because they are roads located in State Parks and Game Management Areas.

**Damage Cost Estimate**

In most cases, the only figures the municipalities have is how much it costs to plow, sand and salt the roads per mile on a seasonal basis. To calculate a damage cost for a Presidentially Declared event, it was assumed that the damage cost would equal to ¼ a season's budget.

| Town | Road Miles to Clear | Storm Cost per mile | Total Cost |
|---|---|---|---|
| Freedom | 24.88 | $1,500.00 | $37,000.00 |
| Jackson | 26.35 | $1,500.00 | $40,000.00 |
| Knox | 30.88 | $1,500.00 | $46,000.00 |
| Liberty | 34.47 | $1,500.00 | $52,000.00 |
| Lincolnville | 52.07 | $1,500.00 | $78,000.00 |
| Montville | 55.84 | $1,800.00 | $100,000.00 |
| Northport | 37.60 | $2,600.00 | $98,000.00 |
| Palermo | 46.67 | $1,200.00 | $56,000.00 |
| Prospect | 17.86 | $2100.00 | $38,000.00 |
| Searsmont | 44.71 | $2,000.00 | $89,000.00 |
| Searsport | 44.68 | $1,500.00 | $67,000.00 |
| Unity | 34.33 | $1,300.00 | $45,000.00 |
| Winterport | 59.98 | $1,500.00 | $90,000.00 |

The total estimated loss from a severe winter storm is $836,000.00.

**Potential Flood losses (to include Category 2 Hurricane flooding)**

The primary damage losses that are expected in Waldo County during any flood event would be damage to local roads. During the development of the original Plan, the Planning Team assumed all roads that were either in the 100-year flood zone or had experienced flooding in the past would be effected. The Team recalculated the cost of roadwork which has increased since the last plan, using an average of $250,000/mile ($48/ft) for rebuilding Town roads. Figures were rounded to the nearest $1,000. Homes in Waldo County are not susceptible to destruction by flooding. Those homes that are located in a flood zone experience flooded basements and there have only been 2 homes in the entire county of 16,431 homes that have experienced repetitive flood damages in the last 17 years that resulted in a NFIP payout. A figure of 10% potential damages value is used for structure damage for public facilities. Only the cost of potential damages to public facilities will be included.

The Planning Team used an average damage figure for general road washouts on road surfaces. This was determined by using the average figures from the last five Presidentially Declared storm events which resulted in unpaved road surface damages and for towns which have actually experienced damages. During the revision process, those roads that have been upgraded with mitigation projects by the communities through local, state and federal funds, to include FEMA 404 and 406 funds, have been removed from the original list. State-maintained roads were also removed from the list, as these are not local responsibilities. The following cost figures were determined.

| Municipality | Critical Facility | Amt of Damage | Damage Cost |
|---|---|---|---|
| Freedom<br>$235,000 | Mitchell Road Bridge | 1 | $130,000 |
| | Rollins Street | 1,200 LF | $42,000 |
| | Smithton Road | 1,000 LF | $45,000 |
| | Waning Road | 500 LF | $6,000 |
| | Road Washouts | Avg | $12,000 |
| Knox<br>$18,000 | Road Washouts | Avg | $18,000 |
| Liberty<br>$158,000 | Stevens Pond inlet | 1 | $100,000 |
| | Road Washouts | Avg | $58,000 |
| Lincolnville<br>$162,000 | Beach Fire Station | 1 ea | $50,000 |
| | Beach Waste Water Station | 1 ea | $100,000 |
| | Road Washouts | Avg | $12,000 |
| Montville<br>$209,000 | Halldale Road Culvert | | $60,000 |
| | Haystack Mt Road Culvert | | $10,000 |
| | Hogback Mt Road Culvert | | $3,000 |
| | Morrill Road Culvert | Avg | $60,000 |
| | North Ridge Road Culvert | | $30,000 |
| | Randlett Road Culvert | | $25,000 |
| | Road Washouts | | $21,000 |
| Northport<br>$255,000 | Mountain Road | 2,000 LF | $18,000 |
| | Park Street | 500 LF | $5,000 |
| | Shore Road Culvert | 250 LF | $6,000 |
| | Road Washouts | Avg | $26,000 |
| | Bayside Dock | 1 | $50,000 |
| | Saturday Cove Dock | 1 | $50,000 |
| | Bayside Waste Water | 1 | $100,000 |

| Municipality | Critical Facility | Amt of Damage | Damage Cost |
|---|---|---|---|
| Palermo $217,000 | Arnold Lane Culvert | Avg | $20,000 |
| | Beldon Woods Rd Culvert | 2,500 LF | $62,000 |
| | Chisholm Pond Road | 400 LF | $11,000 |
| | Jones Road Culvert | 500 LF | $14,000 |
| | Parmenter Road | 500 LF | $14,000 |
| | Marden Hill Road | 1,200 LF | $29,000 |
| | Nelson Lane | 1,900 LF | $44,000 |
| | Gore Road | 500 LF | $14,000 |
| | Road Washouts | Avg | $9,000 |
| Prospect $15,000 | Bowden Point Rd Culvert | 1 | $8,000 |
| | Road Washouts | Avg | $7,000 |
| Searsmont $8,000 | Road Washouts | Avg | $8,000 |
| Searsport $46,000 | Cottage Street Culvert | 200 LF | $20,000 |
| | Road Washouts | Avg | $26,000 |
| Unity $505,000 | Berry Road Bridge | 1 | $26,000 |
| | Crowell/Hunter Roads | 800 LF | $38,000 |
| | East Mussey Road | 700 LF | $32,000 |
| | Kanokolus Road | 2,000 LF | $50,000 |
| | Stagecoach Road | 2,000 LF | $48,000 |
| | Waning Road | 1,500 LF | $94,000 |
| | Road Washouts | Avg | $17,000 |
| | Unity Wastewater Treat | 1 | $200,000 |
| Winterport $59,000 | Winterport Pumping Station | 1 | $50,000 |
| | Road Washout | Avg | $9,000 |
| **Total** | | | $1,886,000 |

Estimated Losses for Public Roads = $1,386,000
Estimated Losses to Municipal Property = $500,000
Total Damages = $1,886,000

**Potential Severe Summer Storm/Hurricane losses**

The primary damage losses that are expected in Waldo County during a Severe Summer Storm/ Hurricane would be the destruction of overhead electrical and telephone utility lines, flooding damage to local roads and residential and commercial structures, tree and utility pole debris in the roads and trees falling on residential structures. Much of these damages were already profiled in the following Damage Loss sections.

The damage losses from flooding will be included in the chart below. The damage losses calculated from winter storm debris removal will also be included below.

| Property | Public or Private | Dollar Loss |
|---|---|---|
| Roadways damaged by Flooding | Public | $1,386,000 |
| Roadways covered in debris from High Winds | Public | $836,000 |
| Municipal Facilities damaged by Flooding | Public | $500,000 |
| Total Hurricane Damages | | $2,722,000 |

**Summary of All Disaster losses**

The following is a summarization of the potential damages that could occur from the three profiled disaster events.

| | |
|---|---|
| Severe Winter Storm | $ 836,000 |
| Flooding | $ 1,886,000 |
| Hurricane | $ 2,722,000 |

## ASSESSING VULNERABILITY: ANALYZING DEVELOPMENT TRENDS

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| ***Requirement §201.6(c)(2) (ii)(C):*** | **The plan should 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.** |

Waldo County is located along the mid-coastline of Maine and is largely rural. A majority of the County's land use is designated as Rural and is primarily forestland or farmland. The largest city, Belfast, which has a year-round population of 6,668 is located on the coast in the southern half of the County. There are no suburbs in Waldo County. The land uses within the county generally consist of: Residential, Resource Protection, Agricultural, Industrial, Institutional and Commercial areas.

The State of Maine Legislature enacted the Growth Management Act in 1989 (Title 30-A, Chapter 187, subchapter 2) which made it voluntary for each community to develop a Municipal Comprehensive Plan. Because it is not mandatory, not every town has a comprehensive plan, as a matter of fact, most do not. The municipal comprehensive plans allow development to occur in appropriate areas taking into account the environment, physical constraints, location of utility services, similarity to existing development, and proximity to flood zone areas.

The municipalities may review existing conditions and predict future needs in order to develop their own plans, policies, and ordinances. All municipalities in Waldo County have enacted Shoreland Zone ordnances, due to the fact that this is a state law requirement. All towns, but two, have enacted floodplain ordinances and are in the NFIP. Further breakdown of the land use designations is shown on the following chart.

Severe winter storms will have an impact on all land use areas and zones within the 26 communities in Waldo County. This hazard has the primary impact of shutting down transportation and power, which will shut down business, industry, commerce and schools and stop all social and emergency services.

Flooding will have an impact on all land use areas and zones within the 26 communities in Waldo County. This hazard has the primary impact of shutting down transportation, since it is primarily the roads that are the object of flooding in the County. This could impact business, industry, commerce, and schools and delay many social and emergency services.

The majority of the municipalities (24 of 26) in Waldo County have enacted floodplain ordinances to regulate new commercial, industrial, and institutional development within flood zones. Each community will continue to enforce its ordinance. Two towns are not members of the NFIP program; these are: Prospect and Waldo. There are some existing commercial developments within flood zones in the County, such as the tourist businesses at Lincolnville Beach. These business have been in place for many years and are upgraded to meet floodplain ordinances as the structures are renovated or replaced. Additionally, there are a number of homes and seasonal camps that are within the flood zones. Likewise, as these properties are mortgaged, they are required to be upgraded in order to meet the floodplain ordinances.

Severe Summer Storms/Hurricanes will have an impact to land use areas and zones that includes the areas impacted by the Flooding Hazard listed above and the areas impacted by the high winds of the Severe Winter Storms, also listed above.

The Belfast Planning Office has indicated that the residential development pressure surrounding Belfast is the largest concern with respect to future land use decisions and hazard mitigation planning. The remainder of the County is expected to undergo a slight increase in residential development pressure to due serving as bedroom communities for Augusta, Waterville and Bangor, which are cities located outside Waldo County.

The Searsport Comprehensive Plan indicates that segments of industrial and residential zones are located in coastal storm surge areas. The town recently re-designated some of these areas to be Marine and Conservation Districts.

The Land Use Types and Growth Areas that have been designated in Waldo County are:

| Municipality | Land Use Types | Designated Growth Areas |
|---|---|---|
| Freedom | Resource Protection, Limited Residential, Limited Commercial, Stream Protection | None |
| Knox | Resource Protection, Limited Residential, Stream Protection, Limited Commercial, General Development | None |
| Liberty | Wetland Preservation, Resource Protection, Limited Residential, Limited Commercial, Stream Protection, Wetland Conservation | None |
| Lincolnville | General District, Harbor, Limited Commercial, Limited Residential, Resource Conservation, Resource Protection, & Stream Protection | General District |
| Montville | Limited Residential, Resource Protection | None |
| Northport | Residential, Commercial | Commercial |
| Palermo | Resource Protection, Limited Residential, Stream Protection, Limited Commercial | Limited Commercial |
| Prospect | Rural Residential, Limited Residential, Stream Protection, Resource Protection, Aquifer Protection | None |
| Searsmont | Resource Protected Village Core, Village Extension, Rural Shoreland | Village Core |
| Searsport | Commercial, Industrial, Residential, Marine, and Conservation, Resource Protection | Commercial, Industrial, Residential |
| Unity | Resource Protection, Limited Residential, Limited Commercial, Stream Protection, Rural, Flood Hazard, Downtown District, Village, Aquifer Protection | Downtown District, Village |
| Winterport | Limited Residential, Resource Protection, General Development, Commercial Maritime, Wetlands, Limited Commercial, Stream Protection, Protection District | General Development, Commercial Maritime |

## MULTI-JURISDICTIONAL RISK ASSESSMENT

| Requirement §201.6(c)(2) (iii): | For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area. |
|---|---|

Waldo County is a mid-sized Maine county consisting of 38,786 people living in 852 square miles located along the mid-coast of Maine. There are 26 municipalities within the County. Thirteen municipalities contributed to the risk assessment analyses performed for the Waldo County Hazard Mitigation Plan.

The Planning Team identified flooding as the most significant risk to the entire County, followed in severity by severe winter storms and then by severe summer storms/hurricanes.

The coastal communities of Belfast, Lincolnville, Northport, Searsport, and Stockton Springs 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. The storm surges affect the beach areas of these communities, which are highly developed due to the tourist business and attraction of living on the coast. The inland communities are more susceptible to high snowfall events. Winds from severe Winter Storms and from Hurricanes will be higher in the coastal communities than the inland communities.

The Town of Winterport, which is located along the banks of the Penobscot River is concerned about the possibility of a major oil spill from one of the oil tankers that transit the River. There are no local spill mitigation capabilities and any response to a major mishap could take hours to implement. This type of hazard could create major environmental damage to the River and cause a severe economic impact to the community.

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## SECTION 5. MITIGATION STRATEGY

§201.6(c)(3) of the Rule outlines measures that localities must take in developing their mitigation strategies. Specifically, the Local Hazard Mitigation 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 entails the development of goals from which specific mitigation actions and projects will be derived. All mitigation actions must be prioritized according to a cost-benefit analysis, with a focus on how effective the actions are expected to be with respect to their cost. For multi-jurisdictional plans, each jurisdiction must show the specific actions they will undertake.

This section includes the following five subsections as follows:

Local Hazard Mitigation Goals

Identification and Analysis of Mitigation Actions

Implementation of Mitigation Actions

Multi-jurisdictional Mitigation Actions

Status of Mitigation Actions from 2011 Plan

# WALDO COUNTY HAZARD MITIGATION PLAN

## LOCAL HAZARD MITIGATION GOALS

| **Requirement §201.6(c)(3) (i):** | **The hazard mitigation strategy shall include: a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.** |
|---|---|
| Definitions | **Goals** are general guidelines that explain what you want to achieve. They are usually long-term and represent global visions, such as "eliminate flood damage." **Objectives** define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and have a defined completion date. Objectives are more specific, such as "adopt a zoning ordinance prohibiting new development in the floodplain." |

The Waldo County Hazard Mitigation Planning Team met to review and analyze the County's risk assessment studies. The following goals were determined to have the greatest benefit in hazard reduction in the County. The descriptions, goals, and objectives for each are as follows:

### SEVERE WINTER STORM EVENTS

In Waldo County, the most likely damages caused by a severe winter storm event are the loss of electrical power, from downed power transmission lines, and the blockage of roadways, from tree debris or winter snow or ice. There has also been loss of life caused by the improper use of backup heat sources such as home generators, debris falling on an individual, or from storm-related vehicle accidents. Other types of general damage to personal and real property may be caused by blizzard winds. The very presence of a severe winter storm will keep tourists away from the area, resulting in major losses of income for local businesses.

There is no history in Waldo County of winter storms causing major damages to buildings and infrastructure. As mentioned above, winter storms cause power outages and temporarily create impassable or dangerous roads. All towns have sufficient physical resources for clearing snow, ice and tree debris from winter roads; only adequate funds to cover the costs of removal are an issue. Therefore, it has been determined by the County Planning team that there is no need for mitigation actions to address road debris, buildings and infrastructure.

**Goal 1**: **Reduce damage, injury and loss of life in Waldo County after a winter storm event**

Objective 1. Lessen the future loss of life and personal injuries resulting from severe storms.

### FLOODING

In Waldo County, the most likely damages caused by flooding are the damages to roadways caused by washouts and undercutting. Though there are very few critical facilities in the 100-year flood zone, there are several private facilities that are located in the Hurricane Surge Inundation Areas. Most communities are using the FIRM information to control development in flood zones. For the purposes of planning, however, the Hurricane Inundation Surge Area maps are being used to develop evacuation zones. There could be loss of lives from flooded roads, but there has not been any incidents of drowning during flood conditions. Flood waters could contaminate some public and private water supplies and damage personal and real property. Flooding may shut down businesses, resulting in major losses of income for local businesses and residents

There is little history in Waldo County of flooding causing major damages to public and commercial buildings and infrastructure. The County averages 1.5 flood-related NFIP claims per year amounting to $9,271 per claim. As has been shown in various sections of this plan, flooding in Waldo County damages roads. Therefore, it has been determined by the County Planning Team that there is no need for mitigation actions to address public buildings and infrastructure.

The Towns of Prospect and Waldo have not adopted floodplain ordinances, and are not required to by the Mitigation Act of 2000 and the associated regulations in order for this plan to be approved. They have not joined because they do not have a history of flooding of buildings and structures.

**Goal 2**: **Reduce damage, injury and loss of life in Waldo County caused by flooding**

Objective 2.1. Lessen the future loss of life and personal injuries resulting from flooding.

Objective 2.2. Assure prompt restoration of critical transportation links.

## HURRICANE EVENTS

In Waldo County, the most likely damages caused by a severe summer storm or hurricane event are the loss of electrical power from downed power transmission lines; the blockage of roadways from tree debris and utility poles and lines; damages to coastal residential properties; and damage to roadways caused by washouts and undercutting. There may also be loss of life caused by debris falling on individuals, or from storm-related vehicle accidents. Other types of general damage to personal and real property may be caused by high winds and ineffective storm water management systems. The very presence of a hurricane will keep tourists away from the area, resulting in major losses of income for local businesses. Therefore, the goals and objectives to mitigate the damages from severe summer storms such as hurricanes or high wind events are:

The typical damages to public buildings and infrastructure (old or new) caused by hurricanes are due to flooding (which has already been addressed in Goal 2) and power outages.

The State of Maine has adopted, by statute, the International Building Code as the Maine State Building Code. Any new public or commercial buildings in Maine will need to meet these standards. Municipal governments will no longer have local building codes. In Waldo County, only the City of Belfast is required to enforce building codes. All Towns do enforce the State Shoreland Zoning requirements which include aspects of floodplain management.

**Goal 3**: **Reduce damage, injury and loss of life in Waldo County after a hurricane**

Objective 3.1. Lessen the future loss of life and personal injuries resulting from severe storms.

# WALDO COUNTY HAZARD MITIGATION PLAN

## IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

| | |
|---|---|
| **Requirement §201.6(c)(3) (ii):** | **The mitigation strategy shall include 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.** |

Waldo County municipal participants have identified several hazard mitigation actions that would benefit residents and was analyzed by the Waldo County Hazard Mitigation Planning Team. These actions were identified in the Mitigation Planning Team meetings and during meetings with public officials representing the municipalities. The identified mitigation actions are broken out by the Goals and Objectives for each hazard and was analyzed using a decision matrix that follows this list.

The following mitigation goals, objectives and actions are appropriate for the communities of Waldo County and have been selected by the duly appointed representatives of those communities. There are no hazards in Waldo County that cause major damages to public or private buildings; except structure fires, which is not profiled in this plan.

The Hazard Mitigation Act of 2000, and the associated regulations, do not require that a community that has no flooding threat to structures must develop mitigation actions to counter a threat that does not exist.

**Goal 1**: **Reduce damage, injury and loss of life in Waldo County after a severe winter storm event**

**Objective 1.** Lessen the future loss of life and personal injuries resulting from severe winter storms.

Action 1. Educate the public on dangers of severe winter storms.

**Goal 2**: **Reduce damage, injury and loss of life in Waldo County caused by flooding**

**Objective 2.1.** Lessen the future loss of life and personal injuries resulting from flooding.

Action 2.1. Educate the public on dangers of flooding.

**Objective 2.2.** Assure prompt restoration of critical transportation links.

Action 2.2. Upgrade ditches, culverts, and roadway drainage systems.

**Goal 3**: **Reduce damage, injury and loss of life in Waldo County after a hurricane**

**Objective 3.** Lessen the future loss of life and personal injuries resulting from severe storms.

Action 3. Educate the public on dangers of severe winter storms.

| | |
|---|---|
| **Requirement: §201.6(c)(3) (iii):** | **[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, ~~implemented, and administered~~ by the local jurisdictions. 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.** |

(Note: Implementation and administration will be dealt with in the next section.)

Reviewing the Mitigation Projects identified, the Hazard Mitigation Planning Team determined that the top two mitigation priorities are:

1. Upgrade roads and their associated storm water management systems. Individual towns will identify what specific locations and necessary work are needed. They will also prioritize these road projects depending on their own individual needs and abilities.

2. Connect with and educate their residents on Disaster Preparedness. The County EMA will provide the literature and training to municipal EM Directors who will complete their own individualized public education programs.

## MULTI-JURISTIDICATIONAL MITIGATION ACTIONS
## IMPLEMENTATION AND ADMINISTRATION

| | |
|---|---|
| Requirement §201.6(c)(3) (iv): | For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. |

Waldo County's Hazard Mitigation Plan projects only include those jurisdictions that adopted the plan. Strategies for hazard mitigation within the County were identified to reduce overall damage in the County. Although these strategies are aimed at reducing overall damage in the County, each jurisdiction will be responsible for pursuing the actions that are relevant to that jurisdiction. The status of projects completed or cancelled are in the Table called "Status of Projects from 2011 Plan Version"

### CURRENT PROJECTS

| Town | Project (In Priority Order) | Cost | Duration | Responsible Agency |
|---|---|---|---|---|
| Freedom | 1. Waning Rd: Remove ledge and ditch 500'. | $6,000 | 4 weeks | Road Comm |
| | 2. Mitchell Rd: Replace existing bridge. | $130,000 | 12 weeks | Road Comm |
| | 3. Pleasant St: Repair 275 feet of roadside drainage | $5,000 | 1 week | Road Comm |
| | 4. Main St: Repair 100 feet of roadside drainage | $2,000 | 1 week | Road Comm |
| | 5. Mill Street: Repair 50 feet of roadside drainage | $1,000 | 1 week | Road Comm |
| | 6. Penny Hill: Repair 1,500 ft of drainage, replace culverts, add drain, and geotextile. | $15,000 | 4 weeks | Road Comm |
| | 7. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Knox | 1. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Liberty | 1. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Lincolnville | 1. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Montville | 1. North Ridge Rd: Add 24" x 40' culvert and repave. | $30,000 | 3 weeks | Road Comm |
| | 2. Morrill Rd: Upsize existing 18" x 40' culvert with 24" x 40' HDPE culvert and repave. | $60,000 | 3 weeks | Road Comm |
| | 3. Haystack Mt Rd: Add 24" x 40' culverts and repave. | $10,000 | 2 weeks | Road Comm |
| | 4. Halldale Rd: Add 24" x 40' culverts and repave. | $60,000 | 3 weeks | Road Comm |
| | 5. Randlett Rd: Add 24" x 40' culverts and repave. | $25,000 | 3 weeks | Road Comm |
| | 6. Hogback Mt Rd: Add 24" x 40' culverts and resurface. | $30,000 | 3 weeks | Road Comm |
| | 7. Kingdom Rd: Replace bridge | $175,000 | 1 year | Road Comm |
| | 8. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Northport | 1. Distribute the County Family Preparedness Guides. | $0 | Ongoing | EMA |
| Palermo | 1. Chisholm Pond Road: Ditch 2,500' and place 2,500' x 22' of geotextile fabic and add 12" base and surface gravel. | $62,000 | 5 weeks | Road Comm |
| | 2. Parmenter Road: Ditch 1,200' and place 1,200' x 22' of geotextile fabic and add 12" base and surface gravel. | $28,500 | 5 weeks | Road Comm |
| | 3. Arnold Lane: Place 40 ft of 24" dia culvert and riprap inlet and outlet. | $5,200 | 5 weeks | Road Comm |
| | 4. Jones Road: Place 50 ft of 24" dia culvert; add 400 ft x 22 ft wide 12" surface gravel. | $10,500 | 5 weeks | Road Comm |
| | 5. Belden Woods Road: Place 50 ft of 48" dia culvert and riprap inlet/outlet; add 95 ft x 22 ft of 36 in depth of gravel. | $16,500 | 5 weeks | Road Comm |

| Town | Project (In Priority Order) | Cost | Duration | Responsible Agency |
|---|---|---|---|---|
| Prospect | 1. Upgrade culvert on Hawes Stream Rd at Lane Brook.<br>2. Replace the Dickey Hill Bridge on George Road with more resilient structure. | $50,000<br>$100,000 | 2 months<br>6 months | Road Comm<br>Road Comm |
| Searsmont | 1. Distribute the County Family Preparedness Guides. | $0 | 2 months | EMA |
| Searsport | 1. 2. Cottage Rd: Upsize existing culvert and riprap. | $20,000 | 2 weeks | Road Comm |
| Unity | 1. Berry Rd: Repair western bridge abutments & wingwall.<br>2. Crowell Rd/Hunter Rd: Upsize 36'' x 60' culvert with 48'' x 60' culvert, elevate 250' x 24' x 24'' and stabilize shoulders add 24'' x 50' relief culvert and build berm.<br>3. Waning Rd site 1: Elevate 1,500' x 2' x 18' stabilize shoulders & repave, upsize (2) 24'' x 50' to 36'' x 50' culverts & upsize (1) 36'' x 50' culvert w/4' x 50' box culvert<br>4. Waning Rd site 2: Elevate 150' x 21' x 2' and upsize 36'' x 60' to 48'' x 60' culvert.<br>5. Stage Coach Rd: Ditch 15,000, and upsize (1) 15'' x 50' to 18'' x 50' culvert and (1) 18'' x 50' to 24'' x 50' culvert.<br>6. Kanokolus Rd: Elevate 2,000' x 21' x 2' and repave.<br>7. East Mussey Rd: Elevate 150' x 21' x 2', upsize existing 48'' x 30' culvert with 5' x 5' x 50' box culvert.<br>8. Distribute the County Family Preparedness Guides | $26,000<br>$38,000<br>$76,000<br>$17,000<br>$48,000<br>$50,000<br>$32,000<br>$0 | 4 weeks<br>6 weeks<br>4 weeks<br>4 weeks<br>4 weeks<br>6 weeks<br>5 weeks<br>Ongoing | Road Comm<br>Road Comm<br>Road Comm<br>Road Comm<br>Road Comm<br>Road Comm<br>Road Comm<br>EMA |
| Winterport | 1. Rancourt Road: replace old 48” culvert with new 40ft long 72” culvert<br>2. Stabilize 5,000 ft of shoulders at various locations<br>3. Distribute the County Family Preparedness Guides | $20,000<br>$10,000<br>$0 | 2 months<br>2 weeks<br>Ongoing | Road Comm<br>Road Comm<br>EMA |
| Waldo County | 1. Distribute the County Family Preparedness Guides | $0 | Ongoing | EMA |

Total Mitigation Project Funding = $1,158,700

**Typical Funding Resources**

Municipal Annual Property Taxes
Municipal Bonding
Maine DOT Transportation Capital Improvements
FEMA Pre-Disaster Mitigation Grants
FEMA Hazard Mitigation Program Grants

# WALDO COUNTY HAZARD MITIGATION PLAN

## STATUS OF PROJECTS FROM 2011 PLAN VERSION

The following chart lists the mitigation actions created in the 2011 version of the County Hazard Mitigation Plan that were either accomplished or cancelled.

| T own | Project | Cost | Status |
|---|---|---|---|
| Belfast | Distribute the County Family Preparedness Guides | $0 | Completed |
| Belmont | Dickey Mills Road culverts | $6,000 | Cancelled |
| | Halls Corner/Northport Rd: Ditch and culverts | $10,000 | Cancelled |
| | Back Belmont Road culvert | $3,000 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| | Provide a generator at the Fire Station | $2,500 | Completed |
| Brooks | Pond Hill Road culverts | $46,000 | Cancelled |
| | Provide a generator at the Fire Station | $2,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Burnham | Sayward Lane rebuild | $115,000 | Cancelled |
| | Rines Road Ledge removal and culverts | $10,000 | Cancelled |
| | Doherty Road elevation | $20,000 | Cancelled |
| | Pine Lane elevation | $25,000 | Cancelled |
| | Pond Road concrete box culvert | $200,000 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Cancelled |
| Frankfort | Treat Pond Road riprap road shoulder | $4,500 | Completed |
| | Provide a generator at the EOC | $2,500 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Freedom | Rollins Street elevation | $42,000 | Completed |
| | Smithton Road renovation | $45,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Islesboro | Main Road granite breakwater | $130,000 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Jackson | Kimball Road: Elevate and install new culverts | $20,000 | Cancelled |
| | Bog Road: Elevate and install new culverts | $30,000 | Cancelled |
| | Works Road: Ditching, ledge removal and elevate | $60,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Knox | Provide a generator at the Town Office/EOC | $2,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Liberty | Provide a generator at the EOC | $2,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Lincolnville | Acquire road barricades for flooded roads | $7,000 | Cancelled |
| | Provide a generator at the Fire Station | $4,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Monroe | Dahlia Road culvert | $7,900 | Completed |
| | Back Brooks Road culvert | $5,000 | Completed |
| | Provide a generator at the Fire Station | $4,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Montville | Distribute the County Family Preparedness Guides | $0 | Completed |
| Morrill | Elevate Poland Woods Road | $35,000 | Cancelled |
| | Weymouth Road culverts | $425,000 | Cancelled |
| | Provide a generator at the Fire Station | $4,000 | Completed |
| | Adopt floodplain ordinance and enter NFIP | $100 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |

| T own | Project | Cost | Status |
|---|---|---|---|
| Northport | Shore Road culverts | $6,000 | Completed |
| | Mountain Road ditching | $18,000 | Completed |
| | Park Street ditching | $5,000 | Completed |
| | Provide a generator at the Fire Station | $4,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Palermo | Banton Road ditching and culverts | $91,000 | Completed |
| | Marden Hill Road ditching and surfacing | $44,000 | Completed |
| | Provide a generator at the Fire Station | $2,500 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Prospect | Bowden Point Road culvert | $8,000 | Completed |
| | Adopt floodplain ordinance and enter NFIP | $100 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Searsmont | Distribute the County Family Preparedness Guides | $0 | Completed |
| Searsport | Town Wharf repairs | $556,000 | Completed |
| Stockton Springs | Distribute the County Family Preparedness Guides | $0 | Completed |
| Swanville | Provide a generator at the Town Office/EOC | $2,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Thorndike | East Thorndike Road ditching and culverts | $90,000 | Cancelled |
| | Files Hill Road ditching and culverts | $22,500 | Cancelled |
| | Hunt Rd ditching | $8,000 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Troy | Provide a generator at the Fire Dept | $2,500 | Completed |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Unity | Quaker Hill Road ditch and underdrain | $83,556 | Completed |
| | Acquire barricades to block flooded roads | $3,000 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Waldo | Provide generators at the Fire Station & Town Office | $8,000 | Completed |
| | Adopt floodplain ordinance and enter NFIP | $100 | Cancelled |
| | Distribute the County Family Preparedness Guides | $0 | Completed |
| Winterport | Distribute the County Family Preparedness Guides | $0 | Completed |
| Waldo County | Acquire a mobile generator to use around County | $6,000 | Completed |
| | Distribute the County Family Preparedness Guides | $500 | Completed |

**Use of a cost-benefit analysis**

MEMA and applicant towns will utilize the current version of the FEMA cost benefit analysis (BCA) tool when they apply for hazard mitigation funding.

Many of the jurisdictions included in this Plan are small towns run by volunteers. They do not have staff, resources or funding to prepare cost-benefit analyses for all 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 carefully scrutinized rather than simply being plugged into a formula. Nevertheless, MEMA and the County EMA have made it clear to local officials that a cost benefit analysis will have to be prepared in the event they apply for mitigation funding.

# WALDO COUNTY HAZARD MITIGATION PLAN

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:** Two participating towns in Waldo 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, "TM" indicates town manager; "AA" indicates administrator, administrative assistant or clerk.
- **Board of Selectmen or Board of Assessors:** If a town has no Town Manager, that role is filled by a Board of Selectmen. 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 communities in Waldo County with staff resources devoted exclusively to hazard mitigation.
- **Road Commissioner**: Most towns in Waldo County have a road commissioner. The road commissioner might also be the town manager or board of selectmen.
- **Flood Hazard Ordinance:** All of the towns that are in the Flood Insurance Program have a flood hazard ordinance in effect.
- **All of the towns in Waldo County** are required to have a shoreland zoning ordinance, whether adopted by the municipality or imposed by the Maine Department of Environmental Protection.
- **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.
- **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 Waldo 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 previous pages.

**Key to table on next page**
"X" - Yes
"AA" – Administrator, Administrative Assistant or Town Clerk
"DPW" – Director of Public Works
"RC" – Road Commissioner
"ST" – Selectmen/Town Meeting form of government
"TM" – Town Manager

| Authorities, Policies, Programs and Resources Available to Accomplish Hazard Mitigation | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Town** | **Town/City Manager** | **Staff involved in Local Planning** | **Public Works or Road Commissioner*** | **EMA Director** | **Flood Hazard Ordinance** | **Shoreland Zoning Ordinance** | **Form of Government** |
| Freedom | AA | - | RC | X | X | X | ST |
| Knox | AA | - | RC | X | X | X | ST |
| Liberty | AA | - | RC | X | X | X | ST |
| Lincolnville | AA | - | RC | X | X | X | ST |
| Montville | AA | - | RC | X | X | X | ST |
| Northport | AA | - | RC | X | X | X | ST |
| Palermo | AA | - | RC | X | X | X | ST |
| Prospect | AA | - | RC | X | - | X | ST |
| Searsmont | AA | - | RC | X | X | X | ST |
| Searsport | TM | - | DPW | X | X | X | ST |
| Unity | AA | - | RC | X | X | X | ST |
| Winterport | TM | - | RC | X | X | X | ST |

*The Road Commissioners and/or Emergency Management Directors identified, clarified, added to or deleted the projects for their communities.

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## SECTION 6. PLAN MAINTENANCE PROCESS

§201.6(c)(4) requires a formal plan 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.

This section also includes an explanation of how the county and municipal governments intend to incorporate their mitigation strategies into any existing planning mechanisms they have, such as comprehensive or capital improvement plans, or zoning and building codes.

This section includes the following three subsections as follows:

Monitoring, Evaluating, and Updating the Plan

Incorporation into Existing Planning Mechanisms

Continued Public Involvement

## MONITORING, EVALUATING, AND UPDATING THE PLAN

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

Waldo County has developed a method to ensure that periodic review and update of the Hazard Mitigation Plan occurs. The Waldo County Emergency Management Agency (EMA) has formed a Hazard Mitigation Planning Team that consists of members from the County EMA office and the EMA directors and Selectmen from member towns.

Monitoring – At least once a year, and after every declared event, the Team will track the progress of the plan, especially with regard to the implementation of the projects within it.

Evaluating – The Team will review each mitigation goal, objective and action to determine their relevance to changing situations and land developments in the County, as well as changes in State or Federal policy, and to ensure that they are addressing current and expected conditions. The Team will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various municipal implementation actions will report on the status of their projects and will include which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which actions should be revised.

Updating - The County EMA Office is responsible for contacting team members and organizing the series of meetings every five years. The meetings will begin about one year out from the due date of the plan and proceed on a monthly basis. The Team members will be responsible for monitoring and evaluating the progress of the mitigation actions in the plan. The next planning cycle will be:

| | |
|---|---|
| Update the Demographics: | July 2020 |
| Updated Hazard Mapping | July 2020 |
| Update the Planning Process | August 2020 |
| Update the Risk Assessment: | September 2020 |
| Update the Mitigation Projects | November 2020 |
| Submit draft plan to MEMA/FEMA | January 2021 |
| Approval Signatures | September 2021 |

Once the review and changes are made, the Waldo County EMA Office will submit the draft revised plan to the State Hazard Mitigation Officer. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification for this determination.

## INCORPORATION INTO EXISTING PLANNING MECHANISMS

| | |
|---|---|
| **Requirement §201.6(c)(4) (ii):** | **The plan shall include 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.** |

Within Maine, most government authority is with State statutes and rules or with municipal "Home Rule" ordinances. Only one of the 26 municipalities are required to enforce the State building codes, according to State law. Only the City of Belfast must enforce the State Building Code.

The Waldo County Hazard Mitigation Planning Team did not select any ordinance-related mitigation actions for this plan, because land use/control ordinances are not necessary or popular. The mitigation actions chosen were primarily educational or road improvements which do not require incorporation into ordinances or comprehensive plans.

One town, Morrill, did enact a floodplain ordinance and became a member of the NFIP since the 2011 version of the plan.

All of the mitigation actions that were identified and selected by the participating towns are either structural, such as road and drainage system upgrades, or public awareness programs. These may be incorporated into existing capitol road improvements plans and potentially funded by annual budgets. In most cases, the only way the expensive road improvements will be accomplished will be through Hazard Mitigation Assistance (HMA) Grants and through Public Assistance following a Presidentially-declared disaster. Emerging grants, such as Maine"s Department of Environmental Protection culvert upgrade funds, will be taken advantage of when they are available.

The County EMA office will assist by reviewing the FEMA Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant (HMGP) packages completed by the County's municipalities, against the 2016 version of this Plan.

The Selectmen or Emergency Management Director within each municipality that is responsible for the implementation and completion of each mitigation action will notify the County EMA Office whenever assistance is needed or whenever a measure is completed. Existing programs such as the municipal Road Maintenance Plan and local Emergency Management program will be utilized to their greatest extent to complete the community's mitigation actions.

The primary municipal incorporation of Hazard Mitigation Plan information will be in relation to the communities' annual road maintenance and capitol improvements budgets. Municipalities may budget to upgrade roadways found to be vulnerable to flooding or budget matching funds for potential federal grants.

Aspects of the Waldo County Hazard Mitigation Plan has been incorporated into the Waldo County Emergency Operations Plan, especially the hazard and vulnerability assessments.

## CONTINUED PUBLIC INVOLVEMENT

| Requirement §201.6(c)(4) (iii): | The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process. |
|---|---|

Waldo County promotes direct public participation in the continual reshaping and updating of the County Hazard Mitigation Plan. The County Planning Team has tried many ways to encourage public involvement including, media releases and social media and will continue to do so.

The Hazard Mitigation Planning Team members are responsible for the review and update of the plan.

Copies of the plan will be provided to the municipal Emergency Management Directors and kept on hand at all municipal offices in the County. The existence and location of these copies will be publicized by posting flyers in all the town offices. Contained in the plan is the address and phone number of the Waldo County EMA Office, which is responsible for keeping track of public comments on the plan.

The 2011 version of the County Hazard Mitigation Plan has been linked to the County EMA website at: http://www.waldocountyme.gov/ema.html for the last 5 years. The 2017 draft version has also been located at this website and the public is encouraged to review and comment on the draft plan.

Public meetings are also held throughout the Mitigation Planning Team process. These public meetings provide the public a forum for which they can express concerns, opinions, or ideas about the plan. The County EMA Office publicizes through e-mails, websites, posters, brochures and newspaper articles and hosts these meetings.

Waldo County Emergency Management Agency
4 Public Safety Way, Belfast, Maine 04415
Office Phone: (207) 338-3870
E-Mail: emadirector@waldocountyme.gov

# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning

Date/Time: August 26, 2014 Facilitator: Dale Rowley

| | Name (Please Print) | Position | Community | Contact Info |
|---|---|---|---|---|
| 1 | PETER B SIMPSON | EMA DIRECTOR | NORTHPORT | 338-4136 PJS260BLUEFT@MAIL.C |
| 2 | ALMON D. (BUM) RIVERS | EMA DIRECTOR | SEARSPORT | 338-1687 SEARSPORTEMA@gmail.com |
| 3 | DARRELL SMITH | EMA Dir | Monroe, ME | 323-8013 |
| 4 | Thomas Doe | EMA Director | Winterport | |
| 5 | James Richards | EMA | Belfast | 338-3362 |
| 6 | James T. Ames | EMA | Searsmont | 342 5707 |
| 7 | [illegible] | EMA | Jackson | 722-3453 |
| 8 | Tim Terry | EMA | Prospect | |
| 9 | TERRY Sawyer | EMA | Swanville | 338-4436 |
| 10 | Henry Laney | EMA | Lincolnville | 592-9365 |
| 11 | MARIO TRIBUZIO | EMA | MONROE | 944-9647 |
| 12 | Dale Rowley | EMA | Waldo County | |
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# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning

Date/Time: April 9, 2015 6:30 - 7:30 pm Facilitator: Dale Rowley

| | Name (Please Print) | Position | Community | Contact Info |
|---|---|---|---|---|
| 1 | Dale Rowley | Director | Waldo County EMA | 338-3870 |
| 2 | ALMON D. (BUD) RIVERS | EMA DIRECTOR | SEARSPORT | 338-1887 |
| 3 | Emily NEWELL | SELECTMAN, FF | UNITY | 416-8890 |
| 4 | Nicke Brancato | FF | UNITY | 416-2153 |
| 5 | Robert Price | 3rd Selectperson | Montville | 382-6324 |
| 6 | Thomas Doe | EMA Director | Winterport | 944-6033 |
| 7 | MARTIN W. Vogel | EMA Orector | JACKSON | 3225569 |
| 8 | DIANE TERRY | Selectperson | Prospect | 567-3621 |
| 9 | Tim Terry | EMA Director | Prospect | 567-3621 |
| 10 | Barbara Ashey | Town Administrator | Northport | 338-3819 |
| 11 | Henry Lang | Local EMA Director | Lincolnville | 592-9365 |
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# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning

Date/Time: June 11, 2015 6pm - 8pm Facilitator: Dale Rowley

| Name (Please Print) | Position | Community | Contact Info |
|---|---|---|---|
| 1 Dale Rowley | County EMA Dir. | Waldo County | emadirector@waldocountyme.gov |
| 2 Tim Terry | Prospect EMA | Prospect | [illegible] |
| 3 DIANE TERRY | Prospect Selectperson | Prospect | dhterry@fairpoint.net |
| 4 Christine Spaulding | EMA | [illegible] Freedom | |
| 5 John C York | Chief EMA | Montville | |
| 6 Galen D. Larrabee | 1st Selectman | Knox | |
| 7 Wannen Steeves | 1st Selectman | Liberty | Steeves@fairpoint.net |
| 8 Henry Lang | Lincolnville EMA Director | Lincolnville | huk@midcoast.com |
| 9 PETER B. SIMPSON | NORTHPORT EMA DIR | NORTHPORT | PJS260BLUFF@HOTMAIL.com |
| 10 Gayle McKeige | Searsport Dty EMA | Searsport | gayle.mckeige@mdi.hosp.org sheepblacksheepfarm@gmail.com |
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# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning – Risk Assessment

Date/Time: August 13, 2015 Facilitator: Dale Rowley

| | **Name** (Please Print) | **Position** | **Community** | **Contact Info** |
|---|---|---|---|---|
| 1 | Dale D. Rowley | Waldo County EMA | Waldo County | 338-3870 |
| 2 | BUD RIVERS | SEARSPORT EMA | SEARSPORT | 322-8464 |
| 3 | DIANE TERRY | Prospect Selectmen | Prospect | 567-3627 |
| 4 | Tim Terry | EMA | Prospect | — |
| 5 | John Yovic | Montville EMA | Montville | |
| 6 | Thomas Doe | Winterport EMA | Winterport | |
| 7 | Henry Laug | Lincolnville EMA | Lincolnville | 592-9365 huke@midcoast.com |
| 8 | Robert A. Price | 3rd Selectperson Montville | Montville | 382-6324 Montville 3rd @ |
| 9 | Elise Brown | Liberty EMA | Liberty | fairpoint.net elisabrw@gmail.com |
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# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning – Planning and Mitigation Strategies

Date: Sept 10, 2015 Time: 1830 - 2000 Facilitator: Dale Rowley

| | **Name** (Please Print) | **Signature** | **Community** | **Position** |
|---|---|---|---|---|
| 1 | Dale Rowley | Dale D. Rowley | Waldo County EMA | Director |
| 2 | Henry Lang | Henry Lang | Lincolnville EMA<br>Northport FD | Local Director<br>Asst Chief |
| 3 | BUD RIVERS | | SEARSPORT EMA | DIRECTOR |
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# WALDO COUNTY EMERGENCY MANAGEMENT AGENCY
# SIGN-IN ROSTER

Type of Course/Meeting: County Hazard Mitigation Planning – Planning and Mitigation Strategies

Date: Feb 24, 2016 Time: 1830 - 1930 Facilitator: Dale Rowley

| | **Name** (Please Print) | **Signature** | **Community** | **Position** |
|---|---|---|---|---|
| 1 | Dale D. Rowley | Dale D. Rowley | Waldo County EMA | Director |
| 2 | Christine Spaulding | | Freedom EMA | EMD |
| 3 | Tim Terry | Tim Terry | PROSPECT | EMA D |
| 4 | DIANE TERRY | Diane Terry | Prospect | Selectperson |
| 5 | Robert Price | Robert H. Price | Montville | Selectperson |
| 6 | John York | John P York | Montville | Fire Chief EMA |
| 7 | Tom Doe | Thomas Doe | Winterport | Fire Chief EMA |
| 8 | Henry Lang | Henry Lang | Northport | Asst Chief - Fire |
| 9 | Elise Brown | | Liberty | EMA Dir |
| 10 | Angela Nelson | Angela Nelson | Palermo | Treasurer |
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# Waldo County Exercise/Meeting/Training/Workshop
## Sign-In Roster

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|---|---|---|---|
| **Course/Meeting Title:** | Waldo County Hazard Mitigation Plan Public Meeting | | |
| **Agenda, Topics Covered or Materials Used:** | Public Meeting to explain Hazard Mitigation Plan | | |
| **Date/Time:** | 22 JUN 16 | **Instructor** | Dale Rowley |

| **Name** (Please Print) | **Town/Facility/Team/Dept** | **Signature** |
|---|---|---|
| Thomas Doe | Winterport EMA | Thomas A Doe |
| Dale D. Rowley | Waldo County EMA | Dale D. Rowley |
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# Waldo County updates hazard mitigation plan, invites comments

Posted: Wednesday, June 8, 2016 - 9:00pm

The Waldo County Emergency Management Agency has initiated an effort to update the County Hazard Mitigation Plan using the guidelines as provided by the Federal Emergency Management Agency.

The purpose of a Hazard Mitigation Plan is to assess the county's risk to likely disasters, inventory critical infrastructure and special need populations, and develop goals and strategies to lessen the impacts of a potential disaster. Examples of disaster mitigation include floodplain management, whereby new construction in floodplains is limited, and the upgrading of storm water management systems along our roadways.

"An important aspect of the Hazard Mitigation Planning process is the involvement of the public in the revision of the County Plan," said Dale Rowley, Director of the Waldo County EMA program, in a news release. "Inputs from all municipalities and all interested citizens are vital in order to make this plan work."
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ounty residents, businesses, non-profit groups, and municipal officials with knowledge of past disaster events, repetitive areas of repair after storms and floods, and locations of critical facilities and utilities and special needs populations that could be impacted by a disaster are strongly encouraged to provide that information to the Hazard Mitigation Planning Team hosted by the Waldo County EMA office.

A Public Hearing is scheduled for Wednesday, June 22, at 6 p.m. in the County EMA office.

For more information, contact Rowley, 338-3870, or by email at emadirector@waldocountyme.gov (mailto:emadirector@waldocountyme.gov) ; http://www.waldocountyme.gov/ema (http://www.waldocountyme.gov/ema) or write or visit the office at 4 Public Safety Way, Belfast, ME 04915.


## Most Popular

| | |
|---|---|
| Sammy’s Deluxe, new Rockland... | (3,278) |
| Driver escapes injury after tree... | (2,831) |
| Welcome back to the Camden-Rockport... | (2,265) |
| Parker S. Laite Sr., notice | (2,079) |
| Feeding birds is not a crime in a... | (1,968) |