

Town of Francestown, New Hampshire



Hazard Mitigation Plan 2020

TOWN OF FRANCESTOWN, NEW HAMPSHIRE

HAZARD MITIGATION PLAN

Update 2020

**Prepared for the Town of Francestown, New Hampshire,
New Hampshire Homeland Security & Emergency Management
(NHHSEM), and the Federal Emergency Management Agency (FEMA)**

**Prepared by The Southern New Hampshire Planning Commission
with assistance from the Francestown Hazard Mitigation Committee**

2020

Final Plan

Acknowledgements

The Southern NH Planning Commission and the Town of Frankestown wish to thank the following individuals for serving on the Town's Hazard Mitigation Committee and for their assistance in the development of this Plan:

2020 Frankestown Hazard Mitigation Committee

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Certificates of Adoption



FEMA

October 19, 2020

Meghan Wells, State Hazard Mitigation Planner
New Hampshire Department of Safety, Homeland Security and Emergency Management
33 Hazen Drive
Concord, New Hampshire 03303

Dear Ms. Wells:

As outlined in the FEMA-State Agreement for FEMA-DR-4457, your office has been delegated the authority to review and approve local mitigation plans under the Program Administration by States Pilot Program. Our Agency has been notified that your office completed its review of the Town of Francestown, New Hampshire Hazard Mitigation Plan 2020 and approved it effective **October 16, 2020** through **October 15, 2025** in accordance with the planning requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, the National Flood Insurance Act of 1968, as amended, and Title 44 Code of Federal Regulations (CFR) Part 201.

With this plan approval, the jurisdiction is eligible to apply to New Hampshire Homeland Security and Emergency Management for mitigation grants administered by FEMA. Requests for funding will be evaluated according to the eligibility requirements identified for each of these programs. A specific mitigation activity or project identified in this community's plan may not meet the eligibility requirements for FEMA funding; even eligible mitigation activities or projects are not automatically approved.

The plan must be updated and resubmitted to the FEMA Region I Mitigation Division for approval every five years to remain eligible for FEMA mitigation grant funding.

Thank you for your continued commitment and dedication to risk reduction demonstrated by preparing and adopting a strategy for reducing future disaster losses. Should you have any questions, please contact Melissa Surette at (617) 956-7559 or Melissa.Surette@fema.dhs.gov.

Sincerely,

Captain W. Russ Webster, USCG (Ret.), CEM
Regional Administrator
FEMA Region I

WRW:ms

cc: Fallon Reed, Chief of Planning, New Hampshire

Town of Francestown, New Hampshire
Francestown Board of Selectmen

A Resolution Approving the Francestown Hazard Mitigation Plan Update
2020

WHEREAS, the Southern New Hampshire Planning Commission received funding from the New Hampshire Department of Safety - Homeland Security and Emergency Management under a Pre-Disaster Mitigation Grant to assist the Town of Francestown in the preparation of the Francestown Hazard Mitigation Plan Update; and

WHEREAS, several public planning meetings/hearings were held between September 2019 and September of 2020 regarding the development and review of the Francestown Hazard Mitigation Plan Update; and


WHEREAS, the Francestown Hazard Mitigation Plan Update contains several potential future projects to mitigate hazard damage in the Town of Francestown; and

WHEREAS, a public meeting was held by the Francestown Board of Selectmen on September 28, 2020 to formally approve and adopt the Francestown Hazard Mitigation Plan Update.

NOW, THEREFORE BE IT RESOLVED that the Francestown Board of Selectmen approve the Francestown Hazard Mitigation Plan Update.

APPROVED and SIGNED this 28 day of September 2020.

Board of Selectmen



ATTEST





Preface

Hazard mitigation planning is a relatively new field, spearheaded by the Federal Emergency Management Agency (FEMA) during the 1990s after Hurricane Andrew caused more than \$20 billion in damage across several southern states. That event resulted in 54 fatalities and the disruption of millions of lives. The Disaster Mitigation Act of 2000, developed by FEMA, was intended to help both communities and states prepare for, and deal with, such disasters. While New England normally does not have hurricanes of Andrew's magnitude, this area does experience many types of natural disasters that cost both lives and money.

These disasters and other natural hazards occur during all four seasons in the Northeast: winter ice, snow, and nor'easters; spring flooding; summer downbursts and thunderstorms; and fall hurricanes. Planning to make a community disaster-resistant before these events occur can help save lives as well as homes and infrastructure. FEMA has several programs designed to strengthen the nation's disaster resistance by reducing risks and changing conditions and behaviors before a disaster to protect lives and prevent the loss of property.

FEMA has also raised its budget to upgrade the existing Flood Insurance Rate Maps through the Map Modernization project. Many communities have outdated maps that do not reflect the true extent of flooding potential.

A community's eligibility for hazard mitigation funding depends upon its having adopted a hazard mitigation plan that addresses these issues. Mitigation measures contained within the ***Frankestown Hazard Mitigation Plan*** may be sufficient to receive grant funding.

It is hoped that this document will be a good first step toward analyzing hazards in Frankestown, forecasting where potential disasters might occur, and reducing their impact on people and the community

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Executive Summary

The Frankestown Hazard Mitigation Plan was created to assist the Town of Frankestown in reducing and mitigating future losses from natural hazard events. The Plan was developed by the Southern New Hampshire Planning Commission and participants from the Town of Frankestown Emergency Management Team and contains the tools necessary to identify specific hazards, and aspects of existing and future mitigation efforts.

The following natural hazards are address in this Plan:

- Avalanche
- Drought
- Earthquake
- Extreme temperatures
- High wind events
- Infectious diseases
- Inland flooding
- Landslide
- Lightning
- Severe winter weather
- Solar storms and space weather
- Tropical and post tropical cyclones
- Wildfire

The Frankestown Hazard Mitigation Committee identified “Critical Facilities” and “Areas at Risk” as follows:

Critical Facilities

- Emergency Operations Center
- Town Offices
- Fire Station
- Police Station
- Emergency Fuel Facilities
- Ambulance Service
- Emergency Generators
- Emergency Shelters
- Dry Hydrants/Fire Ponds/Water Sources
- Primary Evacuation Routes
- Bridges on Primary Evacuation Routes
- Town Garage
- Communications
- Hospitals
- Helicopter Landing Sites
- Town Hall
- Water and Sewer Departments

Areas at Risk

- 2nd NH Turnpike South
- South New Boston Rd at bridge
- Russell Station Rd
- Old County Rd South
- Greenfield Rd at Muzzey Rd
- Udall Rd
- Journey's End Rd
- Scoby Pond Rd
- Route 136 / New Boston Rd
- Candlewood Hill Rd
- Hay Hill Rd
- Palmer Rd
- Pleasant Pond Rd
- Bradford Hill
- Poor Farm Rd at Woodland Ln to Deering town line
- Campbell Hill Rd
- Abbot Lane
- Route 47 / School House Rd
- 2nd NH Turnpike at Cock Hill
- Wilson Hill Rd
- Woodward Hill
- Driscoll Hill
- New Boston Rd at the Foote Farm
- Bible Hill
- All roads in Town
- Pleasant Pond - Private dam

Existing Hazard Mitigation Strategies

The Frankestown Hazard Mitigation Committee identified existing hazard mitigation programs in various stages of development as follows:

- School Evacuation Plan
- Emergency Management Plan
- Town Safety Awareness Program
- Hazmat Spill Program
- Storm Drain Maintenance
- Tree Maintenance Program
- Mutual Aid
- Town Master Plan
- Conservation Overlay Districts
- Village Warning System
- Local Road Design Standards
- Emergency Backup Power
- Local Road Maintenance
- Local Bridge Maintenance
- Town Radio System
- Health Officer
- Fire Inspector
- Code Enforcement Officer
- Building Codes

Prioritized Hazard Mitigation Strategies

The Frankestown Hazard Mitigation Committee identified the following hazard mitigation action strategies to be put forth in to the 2020 hazard mitigation plan update:

1. Create a Dry Hydrant Maintenance Program for existing locations and a new plan for identifying new locations.
2. Continue to remain in compliance with the National Flood Insurance Program.
3. Continue to update the Capital Improvement Plan, Master Plan, and Zoning Ordinance to provide protection for new buildings from flooding and other hazards where necessary.
4. Continue to train town personnel on all potential hazard and safety procedures.
5. Check status of dams, culverts, bridges, and all other flood hazard areas before and after large storm events.
6. Include hazard mitigation and emergency management information and opportunities on Town website.
7. Prepare a written storm drain maintenance system program.
8. Develop a culvert-bridge Replacement and Upgrade Plan.
9. Review existing firefighting water sources and plan for future locations and additional sources
10. Improve road and ditching; construct and upgrade culverts where needed.
11. Continue to provide terrorism/ active shooter training to emergency response personnel and Town elementary school for mass casualty incidents.
12. Develop a continuity of operations plan for the Town in the event a Town department or operation is compromised.
13. Develop a PSA for the Town's website and social media about limiting water usage during droughts.
14. Utilize portable electronic message boards and develop a PSA and additional educational materials for town website during severe winter weather events.
15. Increase and improve outreach and communication to special and vulnerable populations; generate a list of specific individuals to check on before and after hazard events.
16. Encourage tree-trimming before high-wind events to prevent utility and structural damage.
17. Increase outreach, education, and awareness throughout Town on mosquito and tick-borne diseases, especially during peak transmission seasons.

This plan is to be reviewed on an annual basis and updated every three to five years by the Frankestown Planning Department in coordination with the Frankestown Board of Selectmen.

I. Introduction

What Is Hazard Mitigation?

Hazard mitigation is the practice of reducing risks to people and property from natural hazards. FEMA's Federal Response Plan defines hazard mitigation as "activities designed to alleviate the effects of a major disaster or emergency or long-term activities to minimize the potentially adverse effects of future disaster in affected areas (A-5)." It includes both structural interventions, such as flood control devices, and nonstructural measures, such as avoiding construction in the most flood-prone areas. Mitigation includes not only avoiding the development of vulnerable sections of the community, but also making existing development in hazard-prone areas safer. For example, a community could identify areas that are susceptible to damage from natural disasters and take steps to make these areas less vulnerable. It could also steer growth to less risky areas. Keeping buildings and people out of harm's way is the essence of mitigation.

Mitigation should not be viewed as an impediment to growth and development. On the contrary, incorporating mitigation into development decisions can result in a safer, more resilient community, one that is more attractive to new families and businesses.

Why Develop a Hazard Mitigation Plan?

The full cost of the damage resulting from natural hazards—personal suffering, loss of lives, disruption of the economy, loss of tax base—is difficult to measure. New Hampshire is subject to many types of natural disasters: floods, hurricanes, nor'easters, winter storms, earthquakes, tornadoes, and wildfires, all of which can have significant economic and social impacts. Some, such as hurricanes, are seasonal and often strike in predictable locations. Others, such as floods, can occur any time of the year and almost anywhere in the state.

Benefits of Hazard Mitigation

Hazard mitigation offers many benefits for a community. It can:

- **Save lives and property.** A community can save lives and reduce property damage from natural hazards through identifying risks and acting, such as elevating structures in the floodplain.
- **Reduce vulnerability to future hazards.** By having a mitigation plan in place, a community is prepared to take steps that will permanently reduce the risk of future losses. This opportunity is often lost when communities are built without regard to natural hazards, or when they are rebuilt after a disaster "just like they were before." While it is natural to want to return things to the way they were, it is important to remember that, in many cases, the disaster would not have been as severe if a mitigation plan had been implemented.
- **Facilitate post-disaster funding.** By identifying and ranking recovery projects before the next disaster, a community will be in a better position to obtain post-disaster funding because much of the background work necessary for applying for federal funding will already be done.
- **Speedy recovery.** By developing a mitigation strategy, a community can identify post disaster mitigation opportunities in advance of a disaster and be ready to respond quickly after a disaster.

Background: Frankestown Hazard Mitigation Planning

The Federal Emergency Management Agency (FEMA) has recommended that all communities establish local hazard mitigation plans to reduce future losses from natural or man-made hazard events before

they occur. Beginning November 1, 2004, FEMA has mandated an approved hazard mitigation plan be in place to receive specific disaster related grants. With a Pre-Disaster Mitigation Grant from FEMA, New Hampshire Homeland Security and Emergency Management (NHHSEM) provided funding to the Southern New Hampshire Planning Commission (SNHPC) to develop a local hazard mitigation plan for the Town of Frankestown, which was adopted May 6th, 2014. SNHPC began working with Frankestown representatives in September 2019 to update this plan.

Purpose

The ***Frankestown Hazard Mitigation Plan*** serves as a strategic planning tool for use by the Town in its efforts to reduce future losses from natural or man-made hazard events before they occur. This Plan may constitute a new section of the Frankestown Master Plan, in accordance with RSA 674:2.

Authority

This Hazard Mitigation Plan was prepared in accordance with the Town of Frankestown's Emergency Operations Plan, and under the authority of the Planning Mandate of Section 409 of Public Law 93-288 as amended by Public Law 100-707, the Robert T. Stafford Act of 1988, and the Disaster Mitigation Act of 2000. The Frankestown Hazard Mitigation Plan will be referred to as the "Plan." After public meetings were held at the Frankestown Fire Department on September 12th, October 24th, December 2nd, 2019, and September 15th, 2020. The Frankestown Board of Selectmen formally adopted this Plan on September 28th, 2020. Documentation of this Plan's adoption is provided at the beginning of this document.

Methodology

In August 2019, the Frankestown Hazard Mitigation Committee was formed to begin the planning stages of the 2020 Frankestown Hazard Mitigation Plan. The Committee developed the contents of the Plan using the 10-step planning process set forth in the *Hazard Mitigation Planning for New Hampshire Communities* handbook, along with the FEMA State and Local Mitigation Planning How-To Guides. The SNHPC assisted the Committee in the development of this Plan. The Committee consisted of representatives from various local agencies, including the Frankestown Fire Department, Building Department, Highway Department, Board of Selectmen and Town Administration. The Committee held four meetings beginning in September 2019 through December 2019 to collect information, compile, and review the Plan.

Tasks to complete the Plan Update were as follows:

Task 1: Determine the Planning Area & Resources: This task was conducted by Town staff and the Regional Planning Commission. Information from the previous plan was reviewed and revised. The results of this research can be found in Section II, "Community Profile".

Task 2: Building the Planning Team: This task was conducted by town staff and the Regional Planning Commission. Commission staff contacted department heads and land use board volunteers. Town staff made further inquiries and posted notices for residents and other stakeholders who might wish to volunteer their time and serve on a committee. The first committee meeting was held September 12th, 2019 at the Frankestown Fire Department to introduce the mitigation planning process to the committee.

Task 3: Create an Outreach Strategy: This task was conducted by town staff and the Regional Planning Commission throughout the plan update. Together, multiple efforts were made to involve and educate the public regarding the process and input of the plan. Details of various outreach efforts can be found in this section of the plan.

Task 4: Review Community Capabilities: The Committee reviewed hazard types and the areas in Town that were most vulnerable. The committee updated previous year's past and potential hazards maps using the Statewide Asset Data Exchange System data and FEMA flood zones maps. Furthermore, the Committee identified and catalogued all the critical facilities and areas at risk within the town, see Section IV and maps "Critical Facilities," and "Areas at Risk."

Task 5: Conduct a Risk Assessment: The Committee conducted several assessments to help determine the gaps in coverage. These include Assessing Probability, Severity, and Risk (Section IV) and Vulnerability Assessment.

Task 6: Develop a Mitigation Strategy: The Committee reviewed all hazards and the existing mitigation strategies meant to address those hazards in Section VI. Additionally, the Committee evaluated the effectiveness of the existing measures to identify where they can be improved. Section VII summarizes the Committees efforts in reviewing "complete", "completed and ongoing", "deferred" and "new" mitigation action items. The Committee evaluated all mitigation actions and prioritized them. The results can be found in Table 8, which outlines each action item's rank, associated hazard, responsible party, anticipated cost, potential funding sources and anticipated timeframe for implementation.

Task 7: Keep the Plan Current: The Town of Frankestown understands the ramifications for ensuring that this plan be monitored and updated annually or after a presidentially declared disaster. Section IX addresses this issue.

Task 8: Review & Adopt the Plan: After acceptance by the Committee, the Plan was submitted to the New Hampshire Homeland Security and Emergency Management and the Federal Emergency Agency Region 1 Office, for review. At a public meeting, the Board of Selectmen formally adopted the plan on September 28th, 2020. The plan was then granted formal approval by FEMA on (date of FEMA approval).

Task 9: Create a Safe & Resilient Community: The committee discussed the mitigation actions in the Action Plan and the ways in which the implementation of the actions will be beneficial to the community. Annual reviews of the Action Plan by the committee are needed to maintain the timeframes identified for completion of activities. Incorporation of the plan into other land use plans and the Capital Improvement Plan may help ensure that the goals of this plan are met.

2019 and 2020 Public Committee Meetings

On the following dates, the Frankestown Hazard Mitigation Committee held public meetings at the Frankestown Fire Department: September 12th, 2019, October 24th, 2019, December 2nd, 2019, and September 15th, 2020. Committee meetings were made public and posted in a minimum of two public places as required by New Hampshire state law for public meetings.

Minutes were kept for each meeting and each committee member received an e-mail that contained minutes of the previous meeting and an agenda. The minutes were available to the public on the SNHPC

and Town of Frankestown websites. Copies of the meeting agendas, minutes, and attendance sheets are provided in Appendix D.

Coordination with Other Agencies and Individuals

The Hazard Mitigation Committee members and their respective town departments contributed to the contents and reviewed the Plan drafts. Departments represented were:

- Board of Selectmen
- Conservation Commission
- Emergency Management
- Planning Board
- Building Department
- Fire Department
- Town Administration
- Police Department

Public & Stakeholder Involvement

Public and stakeholder involvement was important throughout the process. A list of stakeholders consisting of various public officials and emergency response personnel was developed. This group was emailed all public meeting agendas and review materials with invitations to participate. Over the course of three meetings, a total of ten people representing the Town of Frankestown participated in the review and development of the Plan. No members of the public participated in this plan update.

The town of Frankestown posted agendas and announcements of the Frankestown Hazard Mitigation meetings on the town website as well as in the Town Offices. The Southern NH Planning Commission posted announcements, meeting dates and times in its monthly “media blast” which is distributed electronically to every community and public official in the SNHPC Region, including local board members, volunteers, and the general public. During the development of the Plan, SNHPC also posted meeting announcements and past meeting minutes on the SNHPC website and worked with town staff to post agendas and public notices of all the Frankestown Hazard Mitigation Committee meetings at the Town Offices. Staff of the SNHPC also prepared a presentation on the benefits of hazard mitigation planning and an update on the progress of this Plan at its monthly Commission meeting, which is made up of representatives from all fourteen communities as well as local, state and federal transportation and environmental agencies. These monthly Commission meetings are open to the public and meeting materials are posted on the SNHPC’s website.

Hazard Mitigation Goals and Objectives

The Frankestown Hazard Mitigation Committee adopted the following goals, derived from the State of New Hampshire Multi-Hazard Mitigation Plan, 2018, for the Town of Frankestown at the September 12th, 2019 Committee meeting:

1. Minimize loss and disruption of human life, property, the environment, and the economy due to natural, technological, and human-caused hazards through a coordinated and collaborative effort between federal, State, and local authorities to implement appropriate hazard mitigation measures.
2. Enhance protection of the general population, citizens, and guests in the Town of Frankestown before, during, and after a hazard event through public education about disaster preparedness

and resilience, and expanded awareness of the threats and hazards which face the Town and State.

3. Promote continued comprehensive hazard mitigation planning throughout the Town of Frankestown to identify, introduce, and implement cost effective hazard mitigation measures.
4. Address the challenges posed by climate change as they pertain to increasing the risk and impacts of the hazards identified within this plan.
5. Strengthen Continuity of Operations and Continuity of Government across the Town to ensure continuation of essential services.

II. Community Profile

Community Profile¹

The Town of Frankestown is located within Hillsborough County, New Hampshire. Frankestown is bordered by the Towns of Deering to the North, Weare and New Boston to the East, Greenfield and Lyndeborough to the South and Bennington to the West (Figure 1).

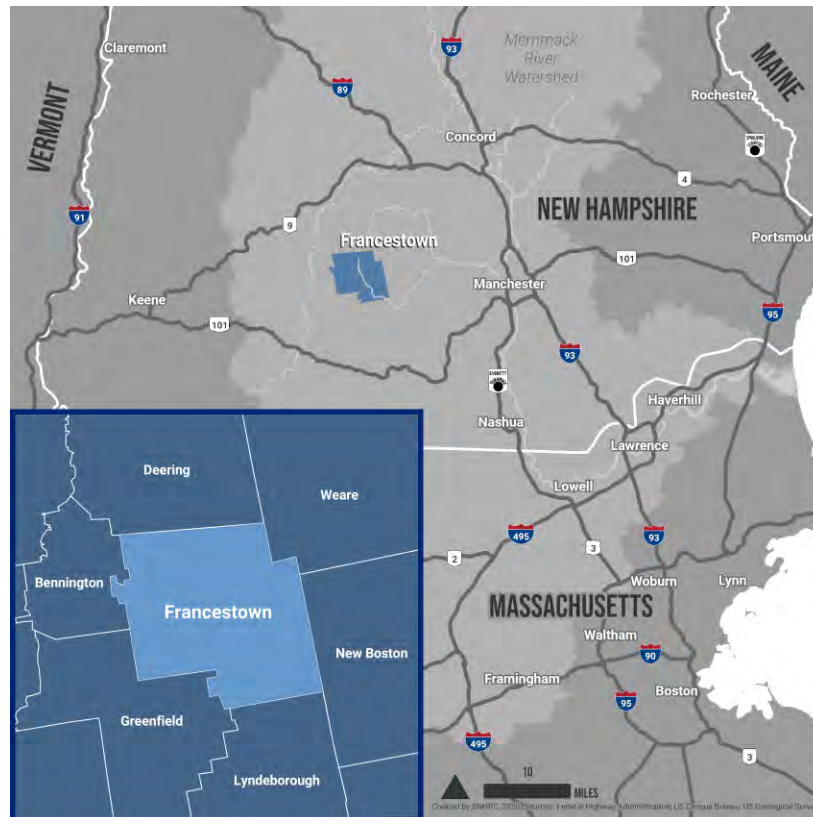


Figure 1: Location Map of Frankestown

The Town of Frankestown has a land area of approximately 30.70 square miles. Based on existing land use map and data prepared for the 2015 Master Plan, roughly 16,287 acres in Town are classified as open space (consisting mainly of forest cover and open/vacant land). Approximately 802 acres are identified as Agricultural Lands (existing grazing land and farms) representing 4.13 percent of the Town's total acreage. Wetlands occupy roughly 773 acres or 3.98 percent of the town while open water consists of 509 acres or 2.62 percent of the town's total acreage (Frankestown Master Plan, 2015).

The highest peak in Frankestown is Crotched Mountain, with an elevation of 2,066 feet above sea level. All surface waters in Frankestown drain into the Merrimack River Drainage basin. A complete map of the Town's steep slopes can be found in Appendix F.

The Town of Frankestown has 4 named and 23 unnamed waterbodies and 9 named and 28 unnamed watercourses. These waterbodies and watercourses lay within three Piscataquog sub-watersheds. The

¹ Town of Frankestown Master Plan 2015

small portion of Frankestown that lies within the Contoocook River Watershed has no waterbodies or watercourses.

There are many small ponds in the Town of Frankestown. Some of the ponds are natural or have been created by beavers. Many of the ponds are human made. The reasons for constructing the ponds are varied; some are old farm ponds built for the purpose of providing water for farm animals; others are for wildlife or recreation. Some human-made ponds are fire ponds for fire protection, and some are multipurpose ponds. Most of the ponds are in low depression areas or along streams and are part of a wetland system.

A three-member Board of Selectmen governs the Town of Frankestown. The Town office building is located on Main Street and houses the Tax Collector, Town Clerk, and the Selectmen's Office. The building is used for public meetings as well as all town board meetings.

Development Trends

Population change for Frankestown totaled 1,057 over 57 years, from 495 in 1960 to 1,552 in 2017. The largest decennial percent change was a 58 percent increase between 1970 and 1980, followed by a 47 percent increase over the next decade. The 2017 Census estimate for Frankestown was 1,552 residents, which ranked 159th among New Hampshire's incorporated cities and towns.² The Table below shows the population figures between 1970 - 2017 from the US Census Bureau and the American Community Survey.

1970	1980	1990	2000	2010	2017	% Change 2000- 2010	% Change 1970-2010
525	830	1,220	1,490	1,562	1,552	5.5%	198%

Table 1: Population Estimates Town of Frankestown

The predominant type of development in Frankestown is single family detached residential homes on large lots. Most of the existing residential development in Frankestown is found along the Town's major transportation corridors, including the 2nd NH Turnpike, Route 136, and Route 47. Residential homes as well as home-based businesses are also dispersed throughout the town.³ In 2015, there were 756 housing units, 89% of which were single-family houses. As of 2017, the Total housing units in Town increased to 851. 88% of which are single-family units (American Community Survey). The Town has an abundance of agricultural lands, open space and protected forested land but is also home to two large commercial-based recreational areas (country club golf course and the Crotched Mountain Ski area) as well as a historic village center.

Approximately 1,871 acres or 9.6 percent of the Town is considered to be "developed" leaving approximately 17,571 acres or 90 percent of the town as "undeveloped" and/or potentially available for development in the future. However, among these 17,571 acres roughly 14,335 acres generally cannot be developed due to various land constraints, including existing conservation lands, 100-year floodplain, wetlands, and steep slopes. As a result, this realistically leaves roughly 1,236 acres or 6% of the town's total acreage that may have future development potential depending upon the town's zoning and subdivision requirements regarding lot size and road frontage as well as opportunities and needs for future subdivisions and roads to access these areas (Frankestown Master Plan, 2015).

² <https://www.nhes.nh.gov/elmi/products/cp/profiles-htm/frankestown.htm>

³ Frankestown Master Plan, 2015

The Town of Franconia's existing Zoning Ordinance, Floodplain Development Regulations, and Subdivision and Site Plan Regulations all work to minimize the impacts, if not eliminate any development in the flood hazard areas. Within the floodplain district, no new development is allowed without a variance, which would increase flood levels during the occurrence of a 100-year flood event. These programs are further outlined in Section IV "Existing Mitigation Strategies and Proposed Improvements."

The town's development and land use patterns have not significantly changed since the 2014 hazard mitigation plan update. Because the Town utilizes the goals and objectives presented in its hazard mitigation plan in its planning and land use activities as well as its emergency operations, the Town's overall vulnerability to natural hazards remains low.

Disaster Risk

Franconia is prone to a variety of natural, technological, and human-caused hazards, of which, flooding poses the greatest risk. Flooding of roads due to changes in land use within the watershed has increased over time. Franconia is susceptible to receiving large volumes of snow from Nor'easters and other storms. The town has experienced damage from ice storms in winter months. Icing of roads poses danger to traveling vehicles. The risk of wildfires results from the large tracts of contiguous forested land in Franconia. In most cases, access is an issue because there are not many roads in these forest tracks. High elevation contributes to the risk for both severe weather and wildfires.

Severe wind events and hurricane residuals have caused damage to Franconia. Over time, unrecorded wind events have caused downed trees and power outages, particularly in areas of high elevation throughout the Town.

National Flood Insurance Program (NFIP)

Franconia is a participating member of the National Flood Insurance Program. The NFIP biennial report for 2012 notes that there are 15 structures located in FEMA designated Special Flood Hazard Areas (SFHAs). As of 2020, there are 5 flood insurance policies in force totaling \$1,750,000 in insurance. There are no repetitive losses in Franconia.

FEMA Digital Flood Insurance Rate Maps, all bearing the effective date of 9/25/09 and 4/18/ 2011, are used for flood insurance purposes and are available at:

<https://msc.fema.gov/portal/search?AddressQuery=Franconia%2C%20New%20Hampshire#searchresultsanchor>

Continued Compliance with NFIP Requirements

The Town of Franconia acknowledges the importance of maintaining requirements set forth in the National Flood Insurance Program. As such, the town takes several steps to remain in compliance with the program that will help to reduce or eliminate the potential for loss of life and property due to flooding.

The Town continues with the following ongoing actions to remain in compliance with the NFIP:

- Raise roads, improve ditching, and construct culverts in problem flooding areas.
- Replace culverts and bridges to prevent flooding where needed.
- Update the capital improvement plan annually to provide funding for projects that prevent flooding (bridges, culverts, raising road) and other relevant hazards where necessary.

- Maintain the Dry Hydrant Plan and monitor for new locations to prevent the loss of life and reduce the loss of property in the event of a fire.
- Appropriate funding for a Tree Maintenance Program to prevent hazardous and unhealthy trees from blocking primary and secondary evacuation routes.
- Provide funding to maintain four wood decked bridges in Town.

III. Hazard Identification and Addressing Potential Losses

The following is a list of natural, technological, and human-caused hazards that have the potential to impact certain areas in Town. These hazards were identified from the State of New Hampshire Multi-Hazard Mitigation Plan (2018), the Federal Emergency Management Administration website, and in a brainstorming session with the Hazard Mitigation Planning Committee. Appendix A contains full descriptions of each hazard.

Natural hazards:

- Avalanche
- Drought
- Earthquake
- Extreme Temperatures
- High Wind Events
- Infectious Diseases
- Inland flooding
- Landslides
- Lightning
- Severe Winter Weather
- Solar Storms and Space Weather
- Tropical and Post Tropical Cyclones
- Wildfire

Technological hazards:

- Aging infrastructure
- Dam failure
- Known and emerging contaminants
- Long-term utility outage

Human-caused hazards:

- Cyber events
- Mass casualty incidents
- Terrorism/violence
- Transport accidents

All the natural hazards identified in the State of New Hampshire's 2018 Multi-Hazard Mitigation Plan are included in this hazard mitigation plan update except coastal flooding.

Estimating Potential Losses

Existing and future structures have the potential to be affected by each of the hazards identified in this Plan. The table below indicates the types of structures in Frankestown that would be affected by a hazard event. The types of structures considered include residential, manufactured housing, commercial, and industrial buildings, utilities, and other infrastructure.

Human losses were not calculated during this exercise but could be expected to occur depending on the type and severity of the hazard. Also not included is the value of contents within structures. The total value of all structures in Frankestown is \$144,423,800 and the median value of a home is \$279,800.

Flooding

There are 15 residential structure located within the FEMA flood zones in Frankestown. These areas include Pleasant Pond, Clarkville Road, Dodge Hill Road, South New Boston Road, Potash Road, East Shore Lane, Woodward Hill Road, New Boston Road, and Straw Farm Lane. (estimated loss \$2,404,950)

- Bradford Hill- one house has the potential for flooding (estimated damage is \$160,330)
- Campbell Hill Road- one house has the potential for flooding (estimated damage is \$160, 330)

Bridges with potential for flooding:

- 2nd NH Turnpike South- estimated cost to replace is \$1,200,000.
- South New Boston Road- estimated cost to replace is \$1,700,000 (*As of September 2020, bridge is currently under construction*)
- Old Country Road South- estimated cost to replace is \$300,000.
- Pleasant Pond Road- estimated cost to replace is \$300,000; last repaired in 2010.

Buildings and Utilities

It is difficult to determine the amount of damage that could be caused by a natural, technological, or man-made hazard because the damage will depend on the severity of the hazard. When estimating the potential economic loss caused by a hazard event, the assumption is that a hazard may result in low (1% of structures damaged), medium (5% of structures damaged), or high (10% of structures damaged) economic loss depending on the severity of the hazard. Utilizing this framework, the following table shows the total assessed valuation of structures and utilities in Franconia with associated estimates of low, medium, or high economic loss.

Local Assessed Valuation (2020)				
	Total Assessed Value (2020)	Economic Loss		
		Low	Medium	High
Buildings				
Residential	\$124,491,230	\$1,244,912.30	\$6,224,561.50	\$12,449,123
Manufactured Housing	\$491,700	\$4,917.00	\$24,585.00	\$49,170
Commercial/Industrial	\$18,581,170	\$185,811.70	\$929,058.50	\$1,858,117.0
Total Buildings	\$143,564,100	\$1,435,641.00	\$7,178,205	\$14,356,410
Utilities				
Electric	\$3,626,700	\$36,267.00	\$181,335.00	\$362,670.0
Other	\$859,700	\$8,597.00	\$42,985.00	\$85,970.0
Total Utilities	\$4,486,400	\$44,864	\$224,320	\$448,640
Net valuation of buildings and utilities	\$148,050,500	\$1,480,505	\$7,402,525	\$14,805,050

Table 2: Local Assessed Valuation 2020 Buildings and Utilities

The total local assessed value for buildings and utilities in the Town of Franconia is \$148,050,050. Based on this framework, the potential economic loss from any of the identified hazards in this Plan ranges from \$0 to \$148,050,050 (low) or \$148,050,050 to \$7,402,502.5 (medium) or \$7,402,502.5 - \$13,773,897.3 (high).

Past and Potential Hazards Table

The following table shows each hazard type and the areas locally, regionally, or statewide that have been impacted or have the potential to be impacted. Federally Declared Disaster information is provided if applicable. Significant hazard events having occurred since the 2014 plan update can be found in Table 3.

Hazard	Date	Location or Facility Impacted	Comments
Inland Flood	1927	Southern NH	Damage to Road Network. Caused many roads to wash out.
Inland Flood	March 11-21, 1936	Statewide	Damage to Road Network. Flooding caused by simultaneous heavy snowfall totals, heavy rains, and warm weather. Run-off from melting snow with rain overflowed the rivers
Inland Flood/ Severe Storm	August 27, 1986	Cheshire, Hillsborough Counties, NH	FEMA Disaster # 771-DR (Presidentially Declared Disaster) \$1,005,000 in damage
Inland Flood / Severe Storm	April 16, 1987	Cheshire, Carroll, Grafton, Hillsborough, Merrimack, Rockingham, & Sullivan Counties, NH	FEMA Disaster Declaration # 789- DR (Presidentially Declared Disaster). Flooding of low-lying areas along river caused by snowmelt and intense rain. \$4,888,889 in damage.
Inland Flood	August 7-11, 1990	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack & Sullivan Counties, NH	FEMA Disaster Declaration # 876. Flooding caused by a series of storm events with moderate to heavy rains. \$2,297,777 in damage.
Inland Flood	October 29, 1996	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan Counties, NH	FEMA Disaster Declaration # 1144- DR. Flooding caused by heavy rains. \$2,341,273 in damage.
Inland Flood	July 2, 1998	Southern NH	FEMA Disaster Declaration # 1231. Severe storms and flooding
Inland Flood	October 26th 2005	Cheshire, Grafton, Merrimack, Sullivan, and Hillsborough Counties, NH	FEMA Disaster Declaration # 1610. Severe storms and flooding.
Inland Flood	October-November 2005	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan counties	FEMA Disaster Declaration # DR-1144- NH
Inland Flood	May 25th, 2006	Belknap, Carroll, Hillsborough, Merrimack, Rockingham, and Strafford Counties, NH	FEMA Disaster Declaration # 1643. Severe storms and flooding.
Inland Flood	April 16, 2007	All counties, NH	FEMA Disaster Declaration # 1695. Severe storms and flooding. See Appendix G for more information
Inland Flood	May 26-30, 2011	Coos and Grafton County	FEMA Disaster Declaration # DR-4006; May flood event.
Inland Flood	May 29-31, 2012	Cheshire County	FEMA Disaster Declaration # 4065.
Inland Flood	Annually	2nd NH Turnpike South	Have raised the road and installed culverts- still floods; Potential bridge damage
Inland Flood	Annually	South New Boston Rd at bridge	Potential bridge damage

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Inland Flood	2006 and 2007 with rain	Russell Station Rd	Potential bridge damage
Inland Flood	Annually	Russell Station Rd	This area floods annually with rain events.
Inland Flood	With Heavy Rain	Old County Rd South	Heavy rain, bridge goes under water
Inland Flood	Annually	Greenfield Rd at Muzzey Rd	This area floods annually with rain events.
Inland Flood	With Heavy Rain	Udall Rd	This area floods with heavy rain events.
Inland Flood	Annually	Journey's End Rd	This area floods annually with rain events.
Inland Flood	Annually	Scoby Pond Rd	This area floods annually with rain events.
Inland Flood	Annually	Route 136 / New Boston Rd	This area floods annually with rain events.
Inland Flood	Annually	Candlewood Hill Rd	This area floods annually with rain events.
Inland Flood	Annually	Hay Hill Rd	This area floods annually with rain events.
Inland Flood	Annually	Palmer Rd	This area floods annually with rain events.
Inland Flood	Annually	Pleasant Pond Rd	Potential bridge damage
Inland Flood	Annually	Bradford Hill	Potential damage to one house
Inland Flood	Annually	Poor Farm Rd at Woodland Ln to Deering town line	This area floods annually with rain events.
Inland Flood	Annually	Campbell Hill Rd	Potential damage to one house
Inland Flood	Annually	Abbot Lane	This area floods annually with rain events.
Inland Flood	Occasional	Route 47 / School House Rd	Occasional flooding in this area
Inland Flood	Occasional	2nd NH Turnpike at Cock Hill	Occasional flooding in this area
Inland Flood	Occasional	Wilson Hill Rd	Occasional flooding in this area
Inland Flood	April 16, 2007	Approximately 52 locations had flood damage (see Appendix G in back of plan for a list of these locations).	These 52 locations suffered varying degrees of damage. No structures were damaged aside from the road itself along with several culverts and bridges.
Inland Flood	Potential	Structures within the flood zone – Pleasant Pond Is, Clarkville Rd, Dodge Hill Rd, South New Boston Rd, Potash Rd, East Shore Lane, Woodward Hill Rd, New Boston Rd, Straw Farm Ln.	There are 15 residential structures located within FEMA flood zones.
Inland Flood	2010	Local	Bridge stabilization from storm Irene
Drought	1929-1936	Statewide	Regional. Recurrence Interval 10 to > 25 years
Drought	1939-1944	Statewide	Severe in southeast and moderate elsewhere. Recurrence Interval 10 to > 25 years
Drought	1947-1950	Statewide	Moderate. Recurrence Interval 10 to > 25 years
Drought	1960-1969	Statewide	Regional longest recorded continuous spell of less than normal precipitation. Encompassed most of the Northeastern US. Recurrence Interval > 25 years
Drought	2001-2002	Statewide	Third worst drought on record, exceeded only by the drought of 1956-1966 and 1941-1942.
Drought	Spring 2012	Statewide	Considered worse than the drought of 1941-42.

Extreme Drought	2016-2017	Statewide	Impacts to water systems, private wells and agricultural crops; This was the first time that an Extreme drought was declared for New Hampshire since the National Drought Monitor became operational in 2000.
Extreme Heat	July, 1911	New England	11-day heat wave in New Hampshire
Extreme Heat	Late June to September, 1936	North America	Temps to mid-90s in the northeast
Extreme Heat	Late July, 1999	Northeast	13 days of 90+ degree heat
Extreme Heat	Early August, 2001	Statewide	Mid 90s and high humidity
Extreme Heat	August 2-4, 2006	Statewide	Regional heat wave and severe storms,
Heat Wave	September 2017	Statewide	High temperature records set across New Hampshire
Cold Wave	December 2017	Statewide	Record low temperatures set across New Hampshire
One Day Winter Heat Wave	February 2018	Statewide	Record high temperatures were broken across the State
Wildfire	1965	Driscoll Hill	30-40 acres
Wildfire	1996	New Boston Rd at the Foote Farm	5 acres - started as a house fire; 4 homes and 1 shed were damaged/destroyed
Wildfire	2002	Woodward Hill	15 acres - Cigarette from a hunter
Lightning	Past and Potential	Bible Hill	The most potential in Town for lightning is on Bible Hill
Severe Wind	Summer, 2006	Town wide	Severe windstorm caused damage to 2-3 homes
Tornado	July 28, 1748	Hillsborough County	n/a
Tornado	May 21, 1814	Hillsborough County	n/a
Tornado	September 15, 1922	Hillsborough County	F2
Tornado	July 2, 1961	Hillsborough County	F2
Tornado	June 9, 1963	Hillsborough County	F2
Tornado	July 19, 1966	Hillsborough County	F2
Tornado	July 17, 1968	Hillsborough County	F2
Tornado	August 20, 1968	Hillsborough County	F3
Tornado	July 2, 1997	Hillsborough County	F2
Tornado	May 23, 1998	Hillsborough County	F2
Tornado	1999	Tornado along Crotched Mountain, Greenfield and Franconia	1 barn was destroyed
Hurricane	August, 1635	n/a	
Hurricane	October 18-19, 1778	n/a	Winds 40-75 mph
Hurricane	October 9, 1804	n/a	
Gale	September 23, 1815	n/a	Winds > 50mph
Hurricane	September 8, 1869	n/a	

Hurricane	September 21, 1938	Southern New England	Flooding caused damage to road network and structures. 13 deaths, 494 injured throughout NH. Disruption of electric and telephone services for weeks. 2 Billion feet of marketable lumber blown down. Total storm losses of \$12,337,643 (1938 dollars). 186 mph maximum winds.
Hurricane (Carol)	August 31, 1954	Southern New England	Category 3, winds 111-130 mph. Extensive tree and crop damage in NH, localized flooding
Hurricane (Edna)	September 11, 1954	Southern New England	Category 3 in Massachusetts. This Hurricane moved offshore but still cost 21 lives and \$40.5 million in damages throughout New England. Following so close to Carol it made recovery difficult for some areas. Heavy rain in NH
Hurricane (Donna)	September 12, 1960	Southern and Central NH	Category 3 (Category 1 in NH). Heavy flooding in some parts of the State.
Tropical Storm (Daisy)	October 7, 1962	Coastal NH	Heavy swell and flooding along the coast
Tropical Storm (Doria)	August 28, 1971	New Hampshire	Center passed over NH resulting in heavy rain and damaging winds
Hurricane (Belle)	August 10, 1976	Southern New England	Primarily rain with resulting flooding in New Hampshire. Category 1
Hurricane (Gloria)	September, 1985	Southern New England	Category 2, winds 96-110 mph. Electric structures damaged; tree damages. This Hurricane fell apart upon striking Long Island with heavy rains, localized flooding, and minor wind damage in NH
Hurricane (Bob)	August 19, 1991	Southern New England	Structural and electrical damage in region from fallen trees. 3 persons were killed and \$2.5 million in damages were suffered along coastal New Hampshire. Federal Disaster FEMA-917-DR
Hurricane (Edouard)	September 1, 1996	Southern New England	Winds in NH up to 38 mph and 1 inch of rain along the coast. Roads and electrical lines damaged
Tropical Storm (Floyd)	September 16-18, 1999	Southern New England	FEMA DR-1305-NH. Heavy Rains
Tropical Storm (Tammy)	October 5-13, 2005	East Coast of US	Remnants of Tammy contributed to the October 2005 floods which dropped 20 inches of rain in some places in NH.
Tropical Storm (Irene)	2011	New England states	FEMA Disaster Declaration #DR-4026 and EM- 3333;
Tropical Storm Sandy	October 26-November 8, 2012	Eastern United States	FEMA Disaster Declaration # DR-4095; Considered the costliest hurricane/tropical storm in US history with costs exceeding \$70 billion. 253 deaths, millions of power outages.
Earthquake	1638	Central New Hampshire	6.5-7
Earthquake	October 29, 1727	Off NH/MA coast	Widespread damage Massachusetts to Maine
Earthquake	December 29, 1727	Off NH/MA coast	Widespread damage Massachusetts to Maine
Earthquake	November 18, 1755	Cape Ann, MA	6.0, much damage

Earthquake	1800s	Statewide New Hampshire	83 felt earthquakes in New Hampshire
Earthquake	1900s	Statewide New Hampshire	200 felt earthquakes in New Hampshire
Earthquake	March 18, 1926	Manchester, NH	Felt in Hillsborough County
Earthquake	December 20, 1940	Ossipee, NH	Both earthquakes of magnitude 5.5, both felt for 400,000 sq miles, structural damage to homes, damage in Boston MA, water main rupture.
Earthquake	December 24, 1940	Ossipee, NH	
Earthquake	December 28, 1947	Dover-Foxcroft, ME	4.5
Earthquake	June 10, 1951	Kingston, RI	4.6
Earthquake	April 26, 1957	Portland, ME	4.7
Earthquake	April 10, 1962	Middlebury, VT	4.2
Earthquake	June 15, 1973	Near NH Quebec Border, NH	4.8
Earthquake	January 19, 1982	Gaza (west of Laconia), NH	4.5, walls and chimneys cracked, damage up to 15 miles away in Concord
Earthquake	October 20, 1988	Near Berlin, NH	4
Earthquake	January 3, 2011	Northwest of Laconia	2.5
Earthquake	August 23, 2011	Travelled up the east coast from Virginia to New Hampshire	5.8
Earthquake	October 16, 2012	Felt throughout most of the New England states; centered in Maine	4.0
Ice Storm	December 17-20, 1929	Statewide	Unprecedented disruption and damage to telephone, telegraph and power system. Comparable to 1998 Ice Storm (see below)
Blizzard	February 14-17, 1958	Statewide	20-30 inches of snow in parts of New Hampshire
Snowstorm	March 18-21, 1958	Statewide	Up to 22 inches of snow in south central NH
Snowstorm	December 10-13, 1960	Statewide	Up to 17 inches of snow in southern NH
Snowstorm	January 18-20, 1961	Statewide	Up to 25 inches of snow in southern NH
Snowstorm	February 2-5, 1961	Statewide	Up to 18 inches of snow in southern NH
Snowstorm	January 11-16, 1964	Statewide	Up to 12 inches of snow in southern NH
Blizzard	January 29-31, 1966	Statewide	Third and most severe storm of 3 that occurred over a 10-day period. Up to 10 inches of snow across central NH
Snowstorm	December 26-28, 1969	Statewide	Up to 41 inches of snow in west central NH
Snowstorm	February 18-20, 1972	Statewide	Up to 19 inches of snow in southern NH
Snowstorm	January 19-21, 1978	Statewide	Up to 16 inches of snow in southern NH

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Blizzard	February 5-7, 1978	Statewide	New England-wide. Up to 25 inches of snow in central NH
Snowstorm	February, 1979	Statewide	President's Day storm
Ice Storm	January 8-25, 1979	Statewide	Major disruptions to power and transportation
Snowstorm	April 5-7, 1982	Statewide	Up to 18 inches of snow in southern NH
Ice Storm	February 14, 1986	Statewide	Fiercest ice storm in 30 yrs in the higher elevations in the Monadnock region. It covered a swath about 10 miles wide from the MA border to New London NH
Extreme Cold	November-December, 1988	Statewide	Temperature was below 0 degrees F for a month
Ice Storm	March 3-6, 1991	Statewide	Numerous outages from ice-laden power lines in southern NH
Snowstorm	1997	Statewide	Power outages throughout Franconia due to heavy snowfall
Ice Storm	January 15, 1998	Statewide	Federal disaster declaration DR-1199-NH, 20 major road closures, 67,586 without electricity, 2,310 without phone service, \$17+ million in damages to Public Service of NH alone
Snowstorm	2000	Franconia, regional	Heavy snow.
Snow Emergency	March 2001	Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, and Strafford counties	FEMA-3166-EM \$4,500,000 in assistance
Snow Emergency	March 11, 2003	Cheshire, Hillsborough, Merrimack, Rockingham and Strafford counties	FEMA-3177-EM \$3,000,000 in assistance
Snow Emergency	March 30, 2005	Belknap, Carroll, Cheshire, Grafton, Hillsborough, Merrimack, Rockingham, Strafford and Sullivan counties	FEMA-3207-EM \$4,654,738 in assistance
Snow Emergency	April 28, 2005	Carroll, Cheshire, Hillsborough, Rockingham and Sullivan counties	FEMA-3211-EM \$2,677,536 in assistance
Severe Winter Storm	December 11, 2008	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, Strafford, and Sullivan counties	FEMA-1812-DR \$19,789,657 in assistance
Severe Winter Storm	March 29, 2010	Merrimack, Rockingham, Strafford, and Sullivan counties	FEMA-1892-DR \$9,103,138 in assistance
Severe Winter Storm	March 14, 2010	Rockingham and Hillsborough Counties	FEMA-1913-DR \$3,057,473 in assistance
Sever Winter Storm	October 29-30, 2011	Merrimack, Rockingham, Strafford, and Sullivan counties	FEMA-4049-DR \$9,103,138 in assistance
Ice Storm	2004	Franconia, regional	Ice storm resulted in many trees down and loss of power.
Ice Storm	December 8, 2008	Franconia & New Hampshire	Downed trees and power lines, power outages up to 2 weeks.
Snowstorm	October 29-30, 2011	New Hampshire	FEMA DR-4049 (Hillsborough and Rockingham Counties). Severe snowstorm event. Snowfall 34" in a 24-hour period.

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Blizzard "Nemo"	02/08-10/2013	Statewide	The state received over two feet of snow in many areas of central and southern New Hampshire Disaster Declaration related to debris removal. DR-4105				
Heavy Snow	01/02-03/2014	Statewide	The storm brought 6 to 14 inches of snow across the much of the state south of Coos County.				
Heavy Snow	2/5/2014	Statewide	Six to twelve inches of snow fell across eastern Hillsborough County. Eight to thirteen inches of snow fell across western and central Hillsborough County. Six to 9 inches of snow fell across Cheshire County.				
Heavy Snow	01/26-29/2015	Statewide	Snowfall amounts ranged from 10 to more than 30 inches across much of the southeastern part of the state. Elsewhere, amounts were generally 6 to 14 inches with some lower amounts in the Connecticut River Valley. This storm resulted in DR-4209.				
Heavy Snow	2/14/2015	Statewide	Much of New Hampshire received between 6 and 16 inches of snow with lesser amounts along the Connecticut River Valley. More than 11,000 homes and businesses saw outages due to the storm.				
Heavy Snow	2/9/2017	Statewide	Snowfall amounts generally ranged from several inches in Coos County to more than 15 inches in interior Rockingham County				
Heavy Snow	3/14/2017	Statewide	High winds and/or heavy wet snow downed trees and created numerous power outages across southeastern portions of the State. Snowfall amounts across New Hampshire ranged from about 12 to 20 inches				
Heavy Snow	1/4/2018	Statewide	The storm brought 10 to 15 inches of snow to much of New Hampshire				
Snow and Coastal Flooding	3/1-9/2018	Statewide	Back to back coastal storms produced high winds, a large storm surge, and large battering waves along the New Hampshire coast. This storm resulted in DR-4370				
Heavy Snow	3/13/2018	Statewide	Snowfall totals ranged from about 15 to 29 inches across the State. DR4371				
HAZMAT Spills	2004	2nd NH Turnpike South and Stevens Rd	Fuel oil spill while pumping				
HAZMAT Spills	1997	Main St	Gas tanks leaked - is being mitigated now				
HAZMAT Spills	2006	Greenfield Rd / Rt 136 and Muzzey Rd	Oil tank tipped over				
HAZMAT Spills	1990 and Potential	2nd NH Turnpike North near 2nd NH Turnpike North at Crotched Mtn Resort and Spa	Gas tank tipped over				
HAZMAT Spills	Potential	All roads in Town	State roads- through travel by trucks; town roads, fuel delivery trucks pose a risk.				
If a snow avalanche were to occur, it could cause damage to roads, bridges, utilities, houses, and other structures. The Town has no history of snow avalanche events. If information becomes available regarding vulnerable risk locations or avalanche occurrences, the plan will be amended accordingly							
Dam Failure	Potential	Pleasant Pond - Private dam	Mill Village bridge could potentially be damaged if this dam were to fail. Localized flooding might also occur.				
The State of New Hampshire classifies dams into the following four categories: NM – Non-menace S – Significant hazard Blank- Non-Active L – Low hazard H – High Hazard The table below shows all dams in the Town of Franconstown.							
Dam #	Class	Dam Name	Owner	Status	Type	Height (Ft)	IMPND (Acres)

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085.14		Lake Tuande	George Sanderson	Not Built	Earth	11.00	80.000
085.01	NM	Pleasant Pond	Sleeper Mill Farm, LLC	Active	Concrete	5.00	198.000
085.02	NM	South Branch Piscataquog	Ms Britain Hill	Active	Concrete	5.00	4.000
085.18	L	Irrigation Pond	Crotched Mtn. Golf Club	Active	Earth	15.00	0.600
085.23		Tory Pines Storage Lagoon	Crotched Mtn. Golf Club	Not Built	Earth	15.00	1.000
085.10		Dinsmore Brook	Perry Family Trust, John and Sio-Hoen	Ruins	Timbercomb	6.00	0.000
085.17	NM	Crotched Mountain	Trailside Development Co.	Active	Earth	22.00	0.820
085.13	NM	Fire Pond	Crotched Mountain Development	Active	Earth	13.00	1.000
085.12		Small Brook	Jason Perry	Ruins	Earth	4.00	2.000
085.03	NM	Bixby Brook	Town of Franconia	Active	Earth	15.00	1.000
085.04		Bixby Brook Town	Town of Franconia	Ruins	Timbercomb	6.00	0.000
085.09		Haunted Lake	Krzysztof & Walenty Kolodziejczyk	Ruins	Timbercomb	3.00	170.700
085.05		South Branch Piscataquog	Justin & Jennifer Oliverio	Ruins	Timbercomb	12.00	0.000
085.20	NM	Recreation Pond	John & Sally McLaughlin	Active	Earth	4.50	0.500
085.08	NM	Crotched Mountain	Benjamin Taylor	Active	Earth	5.00	2.000
085.06		Hammond	Joshua Humphrey	Ruins	Timbercomb	10.00	0.000
085.11	NM	Fire Pond	Robert Scribner	Active	Earth	10.00	0.250
085.07		South Branch Piscataquog	Roger Leland Hall	Ruins	Timbercomb	10.00	0.000
085.21	S	Tory Pines Storage Lagoon	SVA-Northeast, LLP	Active	Earth	15.00	2.200
085.22		Tory Pines Storage Lagoon	SVA-Northeast, LLP	Exempt	Earth	15.00	0.400
085.16	NM	Brennan Brook	Franconia Land Trust, Inc.	Active	Earth	10.00	5.000
085.15	NM	Recreation Pond	Eric Grenier & Meri-Lyn Worthen	Exempt		4.00	0.250
085.19	NM	Clement	Charles & Martine Bohnsack	Active	Earth	4.00	0.200

Source: Dam information provided by the NH Dam Bureau in 2012 and will be verified by Town officials

Table 3: Past and Potential Hazards

The following table lists all the natural hazard events having occurred and impacted the Town of Franconia since the 2014 hazard mitigation plan update:

Hazard Type	Significant Events impacting Franconia since 2014 Plan Update	Notes
Avalanche	None	No significant, recorded avalanche events in Town
Dam Failure	None	There have been no recorded events of dam failure in Town since the 2014 Plan update.
Drought	2016 – 2017, 2020	Extreme drought declared throughout the State; noticeable impact to residents' private wells in the Town of Franconia.
Earthquake	None	No recorded earthquakes from 2014 – 2020 in Town
Extreme Heat	September 2017	High temperature records set across New Hampshire; no significant impact to the Town of Franconia
	One Day winter heat wave,	High temperature records set across New Hampshire; the

	February 2018	Town implemented cooling stations for its residents at municipal buildings– otherwise, no significant impact to the Town.
Extreme Cold	December 2017	Record low temperatures set across New Hampshire; the Town implemented warming stations in municipal buildings but otherwise, no significant impact to the Town.
High Wind Events	2016	Microburst causes significant damage to trees and powerlines in Town.
Infectious Diseases	2017 – 2018, 2020	<ul style="list-style-type: none"> A particularly virulent flu season impacted the State of New Hampshire. 63 adult influenza-related deaths were identified in 2017-18 New Hampshire Covid-19 Pandemic (DR-4516) Incident period: January 20, 2020 and continuing <i>Major Disaster Declaration declared on April 03, 2020</i>
Inland Flood	None	Previous significant flooding events were mapped if possible; see Appendix F. No significant flooding events have occurred and caused damage in Franconia since the 2014 plan update.
Landslide	None	There have been no recorded landslides in Franconia since the 2014 plan update.
Lightning	None	There have been no significant lightning events in Franconia since the 2014 plan update.
Severe winter weather	January 2 – 3, 2014	Heavy snowfall across the State; minor impact to the Town (applies to all following winter weather events). The town has not been significantly affected by a severe winter weather event since the 2014 plan update. The Town's maintenance, highway and public works departments are adequately prepared for severe winter weather and work to prevent damage to structures, roads, and residents during storm events.
	February 5, 2014	Heavy snowfall across the State; minor impact to the Town
	January 26 – 29, 2015	DR-4209; Heavy snowfall across the State
	February 14, 2015	Heavy snowfall across the State
	December 29, 2016	Heavy snowfall across the State
	February 9, 2017	Heavy snowfall across the State
	March 14, 2017	DR-4316; Heavy snowfall across the State
	January 4, 2018	Heavy snowfall across the State
	March 1 – 9, 2018	DR-4370; Heavy snow and coastal flooding
	March 13, 2018	Heavy snowfall across the State
Solar storms and space weather	None	There have been no significant events of solar storms or space weather in the Town of Franconia.
Tropical and post tropical cyclones	None	The Town has not been significantly impacted by tropical or post-tropical cyclone activity since the 2014 plan update.
Wildfire	None	The Town has not experienced a significant wildfire since the 2014 plan update.

Table 4: Significant Hazard Events Since 2014

IV. Assessing Probability, Severity & Risk

The Committee members completed a risk assessment for each hazard identified in Section III. The process involved assigning Low, Medium, or High values (numerically 1, 2 or 3) to each hazard type for its possible impact to humans, property, and businesses. (A score of zero was given if the hazard was not applicable). To assess probability, a 1, 2, or 3 value was assigned to each hazard type with respect to the likelihood that the hazard would occur in the next 25 years. The Severity was calculated by determining the average of the human, property, and business impacts. Risk was calculated by multiplying severity by probability and low, medium, or high risk was assigned accordingly.

0-1.9- Low	2.0-3.9- Low-Med	4-5.9- Med	6-7.9- Med-High	8-9- High			
	Human Impact	Property Impact	Business Impact	Probability	Severity	Relative Threat	Risk
	Probability of Death or Injury	Physical Losses and damages	Interruption of Service	Likelihood this will occur in 25 years	Avg. of Human/Property/ Business	Severity x Probability	
Natural Hazards							
Avalanche	1	1	1	1	1	1	Low
Inland Flooding	2	2	2	3	2	6	Med-High
Drought	1	1	1	3	1	3	Low-Med
Earthquake	1	1	1	1	1	1	Low
Extreme Heat	2	1	1	3	1.3	4	Medium
Extreme Cold	2	2	1	3	1.7	5	Medium
High Wind Events	2	2	2	3	2	6	Med-High
Infectious Diseases	2	0	1	3	1	3	Low-Med
Landslide	1	1	1	1	1	1	Low
Lightning	2	2	2	3	2	6	Med-High
Severe Winter Weather	3	3	3	3	3	9	High
Solar Storms and Space Weather	0	0	1	1	0.3	0.3	Low
Tropical and Post Tropical Cyclones	1	1	2	3	1.3	4	Medium
Wildfire	2	2	1	3	1.7	5	Medium
Technological Hazards							
Aging Infrastructure	1	2	2	3	1.7	5	Medium
Dam Failure	1	2	1	2	1.3	2.7	Low-Med
Known and Emerging Contaminates	1	1	1	1	1	1	Low
Long-term Utility Outage	1	1	1	1	1	1	Low
Human Caused Hazards							
Cyber Events	1	1	2	2	1.3	2.7	Low-Med
Mass Casualty Incident	3	1	1	3	1.7	5	Medium
Terrorism/Violence	2	2	2	2	2	4	Medium
Transport Accident	1	1	1	1	1	1	Low

Table 5: Hazard Risk Assessment

V. Critical Facilities

A critical facility is defined as a building, structure, or location which:

- Is vital to the hazard response effort,
- Maintains an existing level of protection from hazards for the community,
- Would create a secondary disaster if a hazard were to impact it.

The Critical Facilities List for the Town of Franconia has been identified using the following four categories:

Category 1 - Emergency Response Facilities & Services:

The Town has identified the Emergency Response Facilities and Services as the highest priority regarding protection from natural and man-made hazards.

Category 2 - Non-Emergency Response Facilities:

The town has identified these facilities as non-emergency facilities; however, they are considered essential for the everyday operation of Franconia.

Category 3 - Facilities/Populations to Protect:

Includes people and facilities that need to be protected in event of a disaster.

Category 4 - Potential Resources:

Includes facilities that provide potential resources for services or supplies.

Critical facilities were mapped if possible.

Type of Critical Facility	Name	Address	Comments
CATEGORY 1 - EMERGENCY RESPONSE FACILITIES & SERVICES			
Emergency Operations Center	Fire Station	250 Second NH Turnpike South	
Highway Department	Town Garage	242 Second NH Turnpike South	
Helicopter Landing Sites	Crotched Mountain Parking Lot	East Rd	
	Crotched Mountain Resort and Spa Parking Lot	2nd NH Turnpike North at Crotched Mountain Resort and Spa	
	Ball Field	Old County Rd South	
	Bible Hill	Bible Hill Rd	
	Miller's Field	Avery Rd	
Hospital	Monadnock Community Hospital	Peterborough	
Water & Sewer Departments	Franconia Village Water Company	Covers 70 structures in the village zone	
Town Offices	Town Offices	27 Main St	
Town Hall	Town Hall	21 New Boston Rd	
Fire Station	Fire Station	250 Second NH Turnpike South	
Police Station	Police Station	15 New Boston Road	
Communications	Cellular Tower	Crotched Mountain	US Cellular

Type of Critical Facility	Name	Address	Comments
	Cellular Tower	Dennison Pond Road	AT&T
	Microwave Telephone Tower	Bible Hill Road	Verizon
Emergency Fuel Facilities	Highway Department (at Fire Station)	242 Second NH Turnpike South	
Emergency Generators	Fire Station, Highway Garage	250 Second NH Turnpike South	1 portable generator at the Fire Station and one being installed at Police Dept.
Emergency Shelters	Town Office-lower level	27 Main Street	
	Francestown Elementary School	325 Second NH Turnpike South	Red Cross approved
Ambulance Service	Peterborough Ambulance	Peterborough, NH	Others are available
Primary Evacuation Routes		NH 47 and 136	
Bridges on Primary Evac Routes	See the Map.		
Water Sources/Hydrants	Northwest corner of town on Wilson Hill Rd Northwest part of town on 2nd NH Turnpike North at Crotched Mtn Resort and Spa Old County Rd North New Boston Rd / Route 136 east of Bible Hill Rd South New Boston Rd, west of Avery Rd Second Turnpike South, south of Cross Rd Main St north of Oak Hill Rd Muzzey Rd Greenfield Rd / Route 136 Old County Rd South Scoby Rd near New Boston Town Line Poor Farm Rd just north of New Boston Rd Northwest part of town on Second NH Turnpike North Eastside Lane (near Mountain Rd) Poor Farm Rd just north of New Boston Rd Main St north of Oak Hill Rd Route 136 near Old County Rd South		
CATEGORY 2 – NON-EMERGENCY RESPONSE FACILITIES			
Transfer Station	Transfer Station	248 Todd Rd	
Secondary Evacuation Routes	2 nd NH Turnpike, Russell Station Rd, County Rd North, Pleasant Pond Rd		
CATEGORY 3 - FACILITIES/POPULATIONS TO PROTECT			
Special Needs Populations	Elderly residents	Town wide	
Hazardous Material Storage	Crotched Mtn Resort and Spa	2nd NH Turnpike North at Crotched Mtn Resort and Spa	Fertilizer
Recreation Areas	Crotched Mountain Ski Area	Crotched Mountain Ski Area	
	Golf Course at Crotched Mtn Resort and Spa	2nd NH Turnpike North at Crotched Mtn Resort and Spa	
	Ball Fields	Old County Rd South	

Type of Critical Facility	Name	Address	Comments
	Scoby Pond Beach	Dodge Hill Rd	
Churches	Community Church of Frankestown	18 Main St	
Historic Buildings/Sites	Woodbury Homestead	1 Main St	National Registry
	Old Meeting House	1 New Boston Rd	National Registry
	Kunhardt Residence	County Road South	National Registry
Employment Centers	Village Store	74 Main St	10 Employees
	Frankestown Sand and Gravel	1254 Second NH Turnpike South	12-15 Employees
	Crotched Mountain Resort and Spa	2nd NH Turnpike North at Crotched Mtn Resort and Spa	25-30 Employees
Apartment Complexes	Crotched Mtn Resort and Spa Timeshares	2nd NH Turnpike North at Crotched Mtn Resort and Spa	16 timeshares
	Multifamily units at Crotched Mountain	Eastside Lane	Condominiums
Post Office	Post Office	158 Second NH Turnpike South	
CATEGORY 4- POTENTIAL RESOURCES			
Food/Water	Crotched Mountain Resort and Spa	2nd NH Turnpike North at Crotched Mtn Resort and Spa	
	Frankestown Village Water Company	Oak Hill Rd	Covers Village Zone (70)
Medical Supplies	Fire Station	242 Second NH Turnpike South	
Gravel Pits	Miller's Excavation	Muzzey Hill Rd	
	Frankestown Sand and Gravel	1254 Second NH Turnpike South	
Building Material and Heavy Equipment Suppliers	Frankestown Sand and Gravel	1254 Second NH Turnpike South	
	Miller's Excavation	Muzzey Hill Rd	
	DH Hardwick and Sons	301 Frankestown Road, Bennington	
	GW Excavating	Mountain Rd	

VI. Existing Mitigation Strategies and Proposed Improvements

The Franconia Hazard Mitigation Committee identified existing strategies that support hazard mitigation efforts, which is presented in the following matrix. This matrix includes the existing protection program, the area of town affected, the enforcing department or agency, the effectiveness of the existing program and the identified improvements or changes needed for the program.

Existing Mitigation Strategies and Proposed Improvements

Existing Protection	Description/ Area Covered	Responsible Local Agent	Effective- ness	Proposed Improvements/Comments
School Evacuation Plan - Designated plan to evacuate the school in the case of an emergency. The Police and Fire Departments have copies of this plan and conduct regular drills.	Elementary School	School Board	High	Revisit plan and make changes/updates as needed
Building Codes - The Town has adopted the provisions of the NH Life Safety Code and the NH State Building Code. The Town also has adopted flood hazard building codes.	Town wide	Code Enforcement Officer	Average	Adopt new codes as they become available
Code Enforcement Officer - inspects new buildings; investigates and enforces codes.	Town wide	Code Enforcement Officer	Average	Continue inspections and enforcement of codes
Fire Inspector - Routinely inspects new construction. Single family residential homes are inspected on a per-request basis. There are four fire inspectors in town. Driveways greater than 300 ft are also inspected	Town wide	Fire Inspector(s)	Average	Continue inspections and enforcement of codes
Health Officer - Routinely inspects all dilapidated structures, failed septic systems, wells, etc.	Town wide	Health Officer	Average	This is a shared responsibility with the Enforcement Officer
Town Radio System - Police and Fire have digital radios, the highway dept. has analog.	Town wide	Police/Fire/ Highway	Average	Each department has individual radio systems
Local Road Design Standards - Standards set by the town to ensure consistent construction standards	Town wide	Planning Board	Average	Update Subdivision Regulations and Driveway Standards as technology and needs change
Local Bridge Maintenance - All local bridges in the town are inspected every other year by NH DOT and maintained by the town. The Town has a capital reserve fund into which \$50,000- \$100,000/year is deposited.	Town wide	Highway Dept	Average	In addition to the capital reserve fund, the annual budget provides funding to maintain six wood decked bridges.
Local Road Maintenance and Improvements - The Town allocates annual funds to various roadway projects such as resurfacing, culvert replacement and repair.	Town wide	Highway Dept	High	\$85,000 to reseal surface annually; \$180,000 for road reconstruction; \$8,000 for culvert maintenance.

Existing Protection	Description/ Area Covered	Responsible Local Agent	Effective- ness	Proposed Improvements/Comments
Emergency Backup Power- The Town has two fixed generators at the Fire Station and Highway Dept. The Town also has two portable generators located at the police department and the Emergency Management Department. The Town Hall is wired for a portable generator.	Fire Station, Highway Dept., Police Dept., EMD, Town Hall	Fire Station/ Highway Dept., EMD	High	NA
Erosion and Sedimentation Plan- A Soil Erosion and Sedimentation Plan is required by the Planning Board for all development on 15% and greater slopes.	Town wide	Planning Board	High	Encourage the use of best management practices on all projects
Conservation Overlay Districts- The town has a Wetlands and vernal pool conservation district, a Steep Slope District, a Floodplain District, an Aquifer Protection District, and a Shorelands district, all which provide extra protection to sensitive areas in Town.	Town wide	Planning Board, Zoning Board	High	Review and amend as needed; maintain updates as they become available
Town Master Plan- Guidance document to ensure that overall development in town is sustainable, meeting the needs of the citizens by setting forth steps and guidelines for a sound living environment through well-planned growth.	Town wide	Planning Board	High	Currently being updated
Mutual Aid- Assists all aspects of the Town's emergency management services in town. Southwest NH Fire Mutual Aid (SWNHFMA) and the Hillsborough County Sheriff's Dept provides services to the town.	Town wide	Fire Department	High	Continue to be a participating member of Southwest NH Fire Mutual Aid
Hazmat Spill Program- Personnel in the Fire Dept. received regular training for handling hazardous materials spills. The town calls Clean Harbors in the case of a spill	Town wide	Fire Dept	Average	Maintain an adequate supply of hazardous response materials and continue training
Storm Drain Maintenance- The highway dept inspects and cleans as needed	Town wide	Highway Dept	Average	Develop a written maintenance plan
Tree Maintenance Program- the town appropriates \$1,000/year to remove hazard trees	Town wide	Highway Dept	Average	This program is actively working to help reduce hazards
Town Safety Awareness Program- The Fire Dept provides fire prevention and health safety trainings. Police provide Halloween safety and drills with the school.	Town wide	Fire/Police Depts	High	Include information on the Town website for training opportunities and events
Emergency Operations Plan- this plan established protocol for all town depts. in the case of an emergency	Town wide	EMD	Average	This plan was updated in 2017 to meet new EOP standards

Table 6: Existing Mitigation Strategies and Proposed Improvements

VII. Summary of Mitigation Strategies and Prioritization

The following mitigation strategies are aimed at reducing the potential impact of significant hazard events on the community and its infrastructure. The Franconia Hazard Mitigation Committee reviewed all mitigation strategies from the 2014 plan, identified whether they were completed, ongoing, or should be deferred. New mitigation action strategies were then identified. A summary of existing and new strategies can be found in the following matrix:

2014 Mitigation Actions	Status since 2014 plan	Explanation of Status
1. Create Dry Hydrant Maintenance Program for existing locations/new plan for identifying new locations.	Completed	Plan is complete but is reviewed as needed for new locations; three new locations have been added since 2009.
2. Continue to remain in compliance with the National flood Insurance Program.	Completed	Reviewed as needed to remain consistent with federal guidelines and town priorities.
3. Continue to update the Capital Improvement Plan, Master Plan, and Zoning Ordinances to provide protection for new buildings from flooding and other relevant hazards where necessary.	Completed	Reviewed and updated annually; Since 2014 there have been infrastructure updates to the Town Hall and Police Department.
4. Continue to train town personnel on all potential hazard and safety procedures	Completed	Fire, Police and Emergency Management departments provide monthly 'all hazards' trainings to town personnel; EMS provides outreach and CPR training to school staff.
5. Check status of dams prior to potential heavy storm events	Completed	Ongoing; town personnel continue to check status of <i>all</i> flood hazard areas prior to storm events. Wording of this strategy was changed for 2020 Plan update to " <i>Check status of dams, culverts, bridges and other flood hazard areas before and after large storm events.</i> "
6. Include hazard mitigation and emergency opportunities on the Town website	Deferred	Since 2014, the Town has adopted a new website; town personnel will post updates and opportunities on the website as well as social media.
7. Pamphlets for all hazards to be available to all residents	Deleted	The Town has moved to putting all information related to hazard events and updates to the town website and social media; each department has its own webpage with updates and contact information.
8. Check culverts and bridges prior to heavy storm events	Deleted	This action item was consolidated into action item number 5 for the 2020 Plan update.

9. Prepare a written storm drain system maintenance program	Deferred	Ongoing; the Town is waiting for guidance from NH Homeland Security and Emergency Management.
10. Culvert-Bridge Replacement and Upgrade Plan (currently being worked on)	Completed	Culvert/bridge replacement ongoing and reviewed as needed in accordance with Town budget; since 2014, four structures have been updated in town on Juniper Hill Rd., Scoby Rd., 2 nd NH Turnpike South, and Woodward Hill Rd. Two bridges on South New Boston Rd., and Russel Station Rd., are scheduled to be replaced in the Spring of 2020.
11. Implement plan for dry fire hydrant and fire pond	Deferred	Ongoing and reviewed as needed for continued development; the committee changed the wording of this action item for the 2020 Plan update to <i>“review existing firefighting water sources and plan for future locations and sources.”</i>
12. Improve road and ditching; construct and upgrade culverts where needed	Completed	Ongoing as needed throughout town and in accordance with town budget; Culvert on Poor Farm Rd. is scheduled to be updated; since 2014, improvements to road ditching and surface repairs have been made on Bible Hill Rd.
2020 Newly Added Mitigation Actions		
1. Continue to provide terrorism/ active shooter training to emergency response personnel and Town elementary school for mass casualty incidents.	New	
2. Develop a continuity of operations plan for the Town in the event a Town department or operation is compromised.	New	
3. Develop a PSA for the Town’s website and social media about limiting water usage during droughts.	New	
4. Utilize portable electronic message boards and develop a PSA / any additional educational materials for town website during severe winter weather events.	New	
5. Increase and improve outreach and communication to special and vulnerable populations; generate a list of specific populations to check on before and after hazard events.	New	
6. Encourage tree-trimming before high-wind events to prevent utility and structural damage.	New	This is done by Eversource Utilities.

7. Increase outreach, education, and awareness throughout Town on mosquito and tick-borne diseases, especially during peak transmission seasons.	New	
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Table 7: Summary of Mitigation Strategies

Prioritization of Mitigation Strategies

The goal of each mitigation strategy identified in the previous table is to reduce the severity of damage caused by significant hazard events. To determine the effectiveness of each strategy in accomplishing this goal, a set of criteria known as the STAPLEE, was applied to evaluate each strategy. The STAPLEE method analyzes the Social, Technical, Administrative, Political, Legal, Economic and Environmental aspects of a project and is commonly used by public administration officials and planners for making planning decisions. The following questions were asked about the proposed mitigation strategies and discussed in the table below:

- **Social:** Is the proposed strategy socially acceptable to the community? Are there equity issues involved that would mean that one segment of the community is treated unfairly?
- **Technical:** Will the proposed strategy work? Will it create more problems than it solves?
- **Administrative:** Can the community implement the strategy? Is there someone to coordinate and lead the effort?
- **Political:** Is the strategy politically acceptable? Is there public support both to implement and to maintain the project?
- **Legal:** Is the community authorized to implement the proposed strategy? Is there a clear legal basis or precedent for this activity?
- **Economic:** What are the costs and benefits of this strategy? Does the cost seem reasonable for the size of the problem and the likely benefits?
- **Environmental:** How will the strategy impact the environment? Will the strategy need environmental regulatory approvals?

Each mitigation strategy was evaluated and assigned a score (Good = 3, Average = 2, Poor = 1) based on the above criteria. An evaluation of each strategy can be found in the table below. Each strategy was evaluated and prioritized according to the final score. The highest scoring strategies were determined to be of most importance, economically, socially, environmentally, and politically.

STAPLEE Ranking Matrix

STAPLEE CHART Mitigation Strategy	Is it Socially acceptable?	Is it Technically feasible & potentially successful?	Is it Administratively workable?	Is it Politically acceptable?	Is there Legal authority to implement?	Is it Economically beneficial?	Is it Environ-mentally beneficial?	Total Score
1. Create a Dry Hydrant Maintenance Program for existing locations / new plan for identifying new locations.	3	3	3	3	3	3	3	21
2. Continue to remain in compliance with the National Flood Insurance Program.	3	3	3	3	3	3	3	21
3. Continue to update the Capital Improvement Plan, Master Plan, and Zoning Ordinance to provide protection for new buildings from flooding and other hazards where necessary.	3	3	3	3	3	3	3	21
4. Continue to train town personnel on all potential hazard and safety procedures.	3	3	3	3	3	3	3	21
5. Check status of dams, culverts, bridges and all other flood hazard areas before and after large storm events.	3	3	3	3	3	3	3	21
6. Include hazard mitigation and emergency management information and opportunities on Town website.	3	3	3	3	3	3	3	21
7. Prepare a written storm drain maintenance system program.	3	3	2	3	3	3	3	20
8. Develop a culvert-bridge Replacement and Upgrade Plan.	3	3	3	3	3	2	3	21

9. Review existing firefighting water sources and plan for future locations and additional sources.	3	3	3	3	3	3	3	21
10. Improve road and ditching; construct and upgrade culverts where needed.	3	3	3	3	3	3	3	21
11. Continue to provide terrorism/ active shooter training to emergency response personnel and Town elementary school for mass casualty incidents.	3	3	3	3	3	3	3	21
12. Develop a continuity of operations plan for the Town in the event a Town department or operation is compromised.	3	3	3	3	3	3	3	21
13. Develop a PSA for the Town's website and social media about limiting water usage during droughts.	3	3	3	3	3	3	3	21
14. Utilize portable electronic message boards and develop a PSA and additional educational materials for town website during severe winter weather events.	2	3	3	2	3	3	3	19
15. Increase and improve outreach and communication to special and vulnerable populations; generate a list of specific individuals to check on before and after hazard events.	3	3	3	3	3	3	3	21
16. Encourage tree-trimming before high-wind events to prevent utility and structural damage.	2	3	3	2	2	3	3	18
17. Increase outreach, education and awareness throughout Town on mosquito and tick-borne diseases during peak transmission seasons.	3	3	3	3	3	3	3	21

Table 8: STAPLEE Ranking Matrix

VIII. Prioritized Implementation Schedule and Action Plan

The Frankestown Hazard Mitigation Committee created an implementation schedule for the seventeen new and existing mitigation strategies utilizing the following questions as a guiding framework:

WHO? Who will lead the implementation efforts? Who will put together funding requests and applications?

WHEN? When will these actions be implemented, and in what order?

HOW? How will the community fund these projects? How will the community implement these projects? What resources will be needed to implement these projects?

As additional information becomes available regarding project leadership, timeline, funding sources, and/or cost estimates, the Plan will be reviewed and amended accordingly.

Implementation and Action Plan (following page):

Mitigation Action	Hazard Addressed	Who (Leadership)	When (Timeframe)	Cost/Funding source	Status
1. Create a Dry Hydrant Maintenance Program for existing locations / new plan for identifying new locations	Fire	Fire Chief	Annual Updates	Low cost; Town Budget	Completed; reviewed and updated as needed for continued development
2. Continue to remain in compliance with the National Flood Insurance Program	Inland flood	Planning Board	Medium	Low cost; Town Budget	Completed and ongoing annually
3. Continue to update the Capital Improvement Plan, Master Plan, and Zoning Ordinance to provide protection for new buildings from flooding and other hazards where necessary	All hazards	Planning Board	Annually	Medium cost; Town Budget	Completed and ongoing for continued development
4. Continue to train town personnel on all potential hazard and safety procedures	All hazards	Emergency Management Director	Annually	Medium cost; Town Budget	Completed and ongoing annually
5. Check status of dams, culverts, bridges and all other flood hazard areas before and after large storm events	Inland flood	Emergency Management Director, Fire Dept., Road Agent	Short	Low cost; Town budget, staff time	Completed; ongoing during storm events
6. Include hazard mitigation and emergency management information and opportunities on Town website	All hazards	Emergency Management Director	Short	Low cost; staff time	Deferred; need to do with new Town website
7. Prepare a written storm drain maintenance system program	Inland flood	Road Agent	Medium	Low cost; Town Budget	Deferred; ongoing as Town waits for guidance from NHHSEM

8. Develop a culvert-bridge Replacement and Upgrade Plan.	Inland flood	Road Agent	Medium; ongoing annually	High cost; (price varies according to project) Town Budget and grants	Completed but reviewed and updated annually
9. Review existing firefighting water sources and plan for future locations and additional sources.	Fire	Fire Chief	Medium, ongoing	High cost; town budget and grants	Deferred; ongoing and reviewed as needed for continued development
10. Improve road and ditching; construct and upgrade culverts where needed.	Inland flood	Road Agent	Medium; ongoing annually	Medium to high cost; Town Budget	Completed; Ongoing as needed throughout town in accordance with town budget;
11. Continue to provide terrorism/ active shooter training to emergency response personnel and Town elementary school for mass casualty incidents.	MCI / Terrorism	Fire Dept., EMS	Short	Approx. \$6,000 with state grant	NEW: Action item added to 2020 Plan
12. Develop a continuity of operations plan for the Town in the event a Town department or operation is compromised.	All hazards	Emergency Management Director	Medium	Low cost; staff time	NEW: Action item added to 2020 Plan
13. Develop a PSA for the Town's website and social media about limiting water usage during droughts.	Drought	Select Board, Fire Dept.	Short	Low cost; staff time	NEW: Action item added to 2020 Plan
14. Utilize portable electronic message boards and develop a PSA and additional educational materials for town website during severe winter weather events.	Severe winter weather	Select Board, Fire Dept., Emergency Management Director	Short	Low cost; Town Budget	NEW: Action item added to 2020 Plan

15. Increase and improve outreach and communication to special and vulnerable populations; generate a list of specific individuals to check on before and after hazard events.	All hazards	Emergency Management Director	Short	Low cost; staff time	NEW: Action item added to 2020 Plan
16. Encourage tree-trimming before high-wind events to prevent utility and structural damage.	High-wind events, tropical and post tropical cyclones	Highway Utilities	Short, done annually	Service provided by Eversource Utilities	NEW: Action item added to 2020 Plan
17. Increase outreach, education and awareness throughout the Town on mosquito and tick-borne diseases, especially during peak transmission seasons.	Infectious diseases	Health Officer, Fire dept. EMS	Short	Low cost; staff time	NEW: Action item added to 2020 Plan

Table 9: Mitigation Action Plan

IX. Administrative Procedures Regarding Adoption, Evaluation and Monitoring of the Plan

Incorporating the Plan into Existing Planning Mechanisms

Upon completion and approval by FEMA and the State of New Hampshire, the Plan will be adopted as a standalone document for the Town and as an appendix in the Town's Emergency Operations Plan (EOP). An update of the EOP is ongoing; future updates to the EOP will incorporate this Plan as a referenced appendix, but the two plans will always be printed as separated documents. The EOP is subject to annual review.

The Town has utilized the Hazard Mitigation Plan in the past by citing emergency operations requests within the Capital Improvement Program (CIP), specifically as it relates to mitigation strategies within the Plan, annual updates to the Emergency Operations Plan, and budget requests by Town departments such as highway, police, fire, and community development. The Plan will continue to be consulted when town departments submit their request for inclusion in the CIP. The Capital Improvements Committee is responsible for updating the CIP annually, presenting the document to the Planning Board for adoption, and forwarding it to the Board of Selectmen for inclusion in their annual budget process. The Board of Selectmen, in conjunction with Frankestown Emergency Management will determine which items can and should be added to the annual budget based on the inclusion in the CIP, the Town's annual budget and other possible sources of funding. Portions of this Plan should be referenced when updating the Town's Master Plan. Considerations about future land use and proximity to current and potential hazard areas need to be inherently part of the planning process. NH RSA 674:2 (d) gives towns the authority to include a natural hazards section, which documents the physical characteristics, severity, and extent of any potential natural hazards to the community, within the framework of a Master Plan.

Monitoring, Evaluating and Updating the Plan

Adoption

Upon notification that NHHSEM has conditionally approved this Plan, a public hearing will be held, and the Frankestown Board of Selectmen will formally adopt the Frankestown Hazard Mitigation Plan as an official statement of town policy. In the future, this Plan may constitute a new section of the Frankestown Master Plan, in accordance with RSA 674:2. The public hearing shall be properly posted and advertised by the Town in accordance with New Hampshire state law. Documentation that the Frankestown Board of Selectmen have formally adopted can be found at the beginning of the Plan.

Adoption of the Frankestown Hazard Mitigation Plan demonstrates the Town's commitment to hazard mitigation. It also qualifies the municipality for federal, state, and local funding and prepares the public for what is expected of the community before and after a natural hazard event occurs.

Following adoption, the Hazard Mitigation Committee and the Board of Selectmen shall seek to incorporate the mitigation actions identified in the Prioritized Implementation Schedule of Section VIII of the Plan into other planning mechanisms, including the Town's Master Plan.

Monitoring, Evaluating and Updates

The Frankestown Hazard Mitigation Plan shall be monitored and evaluated annually to track progress in implementing the mitigation strategies and actions as well as updating the goals and objectives of the Plan. The Frankestown Board of Selectmen's administrative assistant shall be responsible for initiating this review and scheduling an annual meeting of the Hazard Mitigation Committee. The Frankestown Emergency Management Director shall be responsible for ensuring that the Plan is updated for FEMA approval at least every 5 years. In addition to reviewing Hazard Mitigation Committee members' progress on projects, the strategy for the following year will be reviewed and new projects will be selected for implementation at the annual meeting.

The Frankestown Board of Selectmen's administrative assistant will conduct updates in coordination with the Hazard Mitigation Committee and Frankestown Board of Selectmen. Updates should be made to the Plan every three to five years⁴ to accommodate actions that have failed or are not considered feasible after a review for their consistency with STAPLEE, the timeframe, the community's priorities, and funding resources. Priorities that were not ranked high, but identified as potential mitigation strategies, should be reviewed as well during the monitoring and update of this Plan to determine feasibility of future implementation. At that time, any other items identified during the annual meetings will be updated in the Plan, including, but not limited to, goals, objectives, identification of past hazard events, and the inventory of town assets vulnerable to hazards.

Keeping with the process of adopting the Frankestown Hazard Mitigation Plan, a public hearing to receive comment on the Plan maintenance and updating shall be held during the review period, and the Board of Selectmen will adopt the final product.

During the budget process each year, department heads shall be responsible for considering hazard mitigation actions that need to be implemented as well as forwarding new actions that might be necessary to the Board of Selectmen's administrative assistant for inclusion in the annual plan review. The plan will be considered for incorporation into the community's Town Operating Budget, capital improvement plan considerations, and/or other planning mechanisms.

Continued Public Involvement

The public will continue to be invited and encouraged to be involved during this process at monitoring, evaluation, and update meetings. All meetings involving implementation or updates of the Plan shall be open to the public as is required by RSA 91-A and notices of the meetings will be posted at least 24 hours in advance in a minimum of two locations, such as the town offices and library. The meetings may also be publicized in the local newspaper. To gain additional public involvement, draft copies of the amended Hazard Mitigation Plan will be made available at two public locations for review and comment. The document should be left for a minimum of two weeks and then all comments will be considered in drafting final revisions.

⁴ FEMA Disaster Mitigation Act of 2000 44 CFR Part 201.6(d)(3) mandates "Plans must be reviewed, revised if appropriate, and resubmitted for approval within five years to continue to be eligible for HMGP project grant funding." (Federal Register Vol. 36, No. 38, Feb 26, 2002, Rules and Regulations, p8852)

APPENDIX A: Hazard Profiles

Natural Hazards

1. Avalanche

Description: An avalanche is a slope failure consisting of a mass of rapidly moving, fluidized snow that slides down a mountainside. The flow can be composed of snow, ice, water, soil, rocks, and trees. An avalanche can be comparable to a landslide, only with snow instead of earth.⁵

Location: Although there have been no recorded avalanche events in Town, areas that could be susceptible are those with steep slopes such as Crotched Mountain Ski area and resort in Franconia and Bennington. A map of the Town's steep slopes can be found in Appendix F.

Extent: The extent of an avalanche prone area is determined by the amount of risk for natural or human triggered reactions based on factors such as snowpack distribution and other atmospheric conditions. The North American Public Avalanche Danger Scale below shows the five danger classifications that are used to express avalanche risk.⁶







North American Public Avalanche Danger Scale				
Avalanche danger is determined by the likelihood, size and distribution of avalanches.				
Danger Level		Travel Advice	Likelihood of Avalanches	Avalanche Size and Distribution
⁵ Extreme		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.
⁴ High		Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
³ Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
² Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
¹ Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or extreme terrain.
Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.				
No Rating		Watch for signs of unstable snow such as recent avalanches, cracking in the snow, and audible collapsing. Avoid traveling on or under similar slopes.		

Figure 2: North American Public Avalanche Danger Scale

2. Inland Flooding

Description: Inland flooding is generally defined as a high flow, overflow, or inundation by water, which causes or threatens damage.⁷ Flooding results from the overflow of rivers, their tributaries,

⁵ <http://www.naturaldisasters.ednet.ns.ca/Projects/Avalanche/bja.htm>

⁶ State of New Hampshire Multi-Hazard Mitigation Plan 2018

⁷ <http://w1.weather.gov/glossary/index.php?letter=f>

and streams throughout the State, primarily from high precipitation events (State of New Hampshire Multi-Hazard Mitigation Plan, 2018).

Location: All areas in Frankestown are susceptible to flooding events. There are 15 residential structures location in FEMA designated flood zones on Pleasant Pond, Clarkville Road, Dodge Hill Road, South New Boston Road, Potash Road, East Shore Lane, Woodward Hill Road, New Boston Road, and Straw Farm Lane. Other areas susceptible to flooding events are two residential structures location on Bradford Hill and Campbell Hill Road. All past flooding events and FEMA flood zones can be found in Appendix F.

Extent: Where river gauges are present, the magnitude of flooding is ranked, and area specific forecasts are created using a flood scale that ranges from the Action Stage to Major Flood Stage.⁸ The National Weather Service characterizes flood severity to more effectively communicate the impact of flooding as follows:⁹

- Action Stage – Water source is rising, and actions must be taken in preparation of potential signification hydrologic activity. There are no impacts at this stage.
- Minor Flood Stage – Minimal or no property damage, but possibly some public threat (e.g., inundation of roads)
- Moderate Flooding – Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations
- Major Flooding – Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.

Areas that are not monitored by river gauges are not forecasted or measured using a specific scale; therefore, the best way to describe the extent of the hazard of flooding is its speed of onset (how quickly the floodwaters rise) and its duration (how long the area remains inundated with flood waters). Floods can happen slowly over time during a long duration event or they can happen very rapidly (flash flooding). The speed of onset and duration of an inland flooding event is influenced by the size of the channel and contributing watershed area, terrain of the contributing watershed area, intensity and duration of the rainfall or snowmelt, recent rainfall history, and other factors (State of New Hampshire Multi-Hazard Mitigation Plan, 2018).

The extent of inland flooding in the Town of Frankestown can be seen in the FEMA Flood Zones map in Appendix F.

3. Drought

Description: A drought is the absence of water in a region that occurs slowly due to below-average precipitation over an extended period, resulting in low stream flows, low surface water, and low groundwater levels (State of New Hampshire Multi-Hazard Mitigation Plan, 2018).

New Hampshire breaks the State into five Drought Management Areas: one in the north; one across the central region; and three along the southern portion of the State. Federal agencies have coordinated to develop the National Drought Monitor which classifies the duration and severity of the drought using precipitation, stream flow, and soil moisture data coupled with information

⁸ State of New Hampshire Multi-Hazard Mitigation Plan 2018

⁹ National Weather Service Manual 10-950 (2017), Definitions and General Terminology:
<http://www.nws.noaa.gov/directives/sym/pd01009050curr.pdf>

provided on a weekly basis from local officials. The New Hampshire Drought Management Team, whose efforts are coordinated by the NH DES, utilizes these maps to help determine which areas are hit the hardest. NH DES also maintains a “Situation Summary” where precipitation, stream flow, groundwater level, lake level and fire danger data from all over the state can be accessed to assess if areas in New Hampshire are being impacted by drought.

Location: All areas in Frankestown have the potential to be impacted by a drought event. Droughts increase the risk of wildfire, especially in forested areas throughout Town. In the drought of 2016-17, private wells throughout town were significantly compromised. the [US Drought Monitor program](#) classifies drought on a scale of none to D4 (Exceptional Drought). In the following image, the first two maps show the average number of weeks each year of D0 (Abnormally Dry) drought or worse (Mild or Worse) and D1 (Moderate Drought) or worse for 2000-2009. The bottom two maps show the same for the period of 2010-2019. In both instances, Frankestown and New England show an increase in the average number of weeks of drought each year compared to the previous decade (Figure 3).

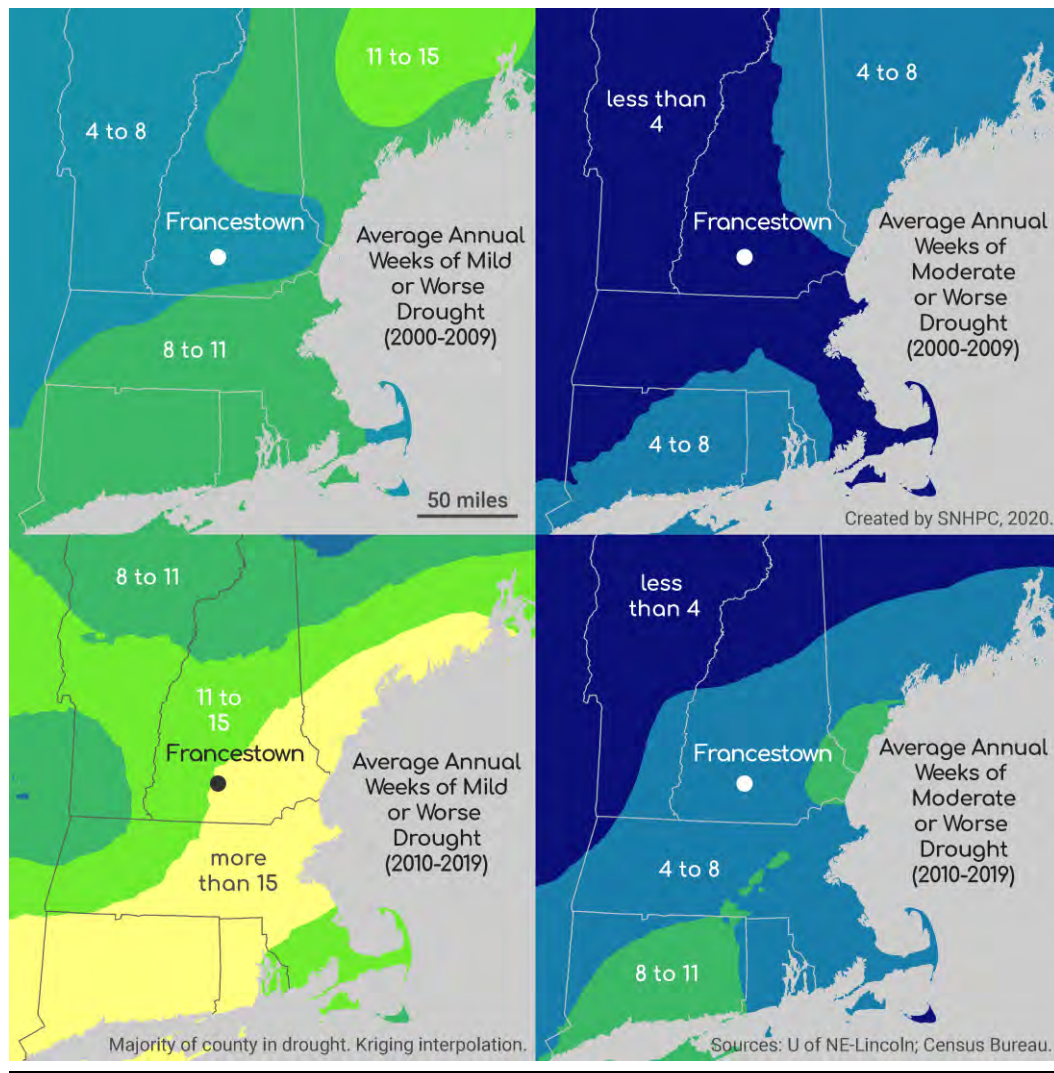


Figure 3: Average Annual Weeks of Drought 2010-2019

Extent: The severity of a drought is assessed using the US Drought Monitor's intensity scale.

	WATCH D0 Abnormally Dry	ALERT D1 Moderate	WARNING D2 Severe	EMERGENCY D3 Extreme	DISASTER D4 Exceptional
Conditions to be used by NH Drought Management Team as basis for recommendations to the US Drought Monitor					
PRECIPITATION 1-month SPI 3-month SPI 6-month SPI 12-month SPI	<0.0 Not Applicable Not Applicable Not Applicable	Not Applicable <0.0 Not Applicable Not Applicable	Not Applicable <-1.0 Not Applicable Not Applicable	Not Applicable Not Applicable <-1.0 Not Applicable	Not Applicable Not Applicable Not Applicable <-1.0
STREAMFLOW 28-day streamflow 65% normal	Up to 1 Month	1-3 Months	3-6 Months	6-9 Months	>9Months
PALMER INDEX PDSI	Not Applicable	<0.0	<-1.0	<-2.0	<-3.0
GROUNDWATER	Not Applicable	Monthly Levels Drop Below Mean	Monthly Levels Persist Below Monthly Mean		Not Quantified

Figure 4: Drought Management Parameters, NHDES Drought Management Plan

Impacts: Droughts can have severe economic, environmental, and social impacts on a community. Examples of potential impacts include¹⁰:

- Cost of irrigation and drilling new wells.
- Businesses that rely on farming, such as tractor and feed suppliers may lose income.
- Loss or destruction of fish and wildlife habitat.
- More frequent wildfires.
- Health problems associated with increased dust and/or pollen.
- Health problems associated with poor water quality.

4. Earthquake

Description: The United States Geological Survey (USGS) defines an earthquake as a sudden slip on a fault. Tectonic plates are always slowly moving but can get stuck on edges due to friction. When the stress on the plates overcomes the friction, there is an earthquake that releases an energy wave that travels through the earth's crust¹¹. The earthquake hazard is anything associated with an earthquake that may affect the normal activities of people, such as, surface faulting, ground shaking, landslides, tsunamis, structural damage, etc.

New Hampshire is an area of moderate seismic hazard. This means that the State could experience large (6.5-7.0 magnitude) earthquakes, but they are not likely to occur as frequently as in a high hazard area like California. The State typically experiences one or two earthquakes per year registering magnitude 2.0 to 3.5 and numerous other smaller ones (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

Location: All areas in Town have the potential to be affected by an earthquake. The historic "Old Meetinghouse" could be more at risk due to the old age of the structure. While earthquakes are generally mild and rare in New England, there is a relative hotspot of activity located in central New

¹⁰ State of New Hampshire Multi-Hazard Mitigation Plan 2018

¹¹ <https://www2.usgs.gov/faq/categories/9827/3343>

Hampshire which affects the Town of Francestown. The risk posed by this hotspot is small, especially compared to other hazards, but its existence should be acknowledged in hazard mitigation planning (Figure 5).

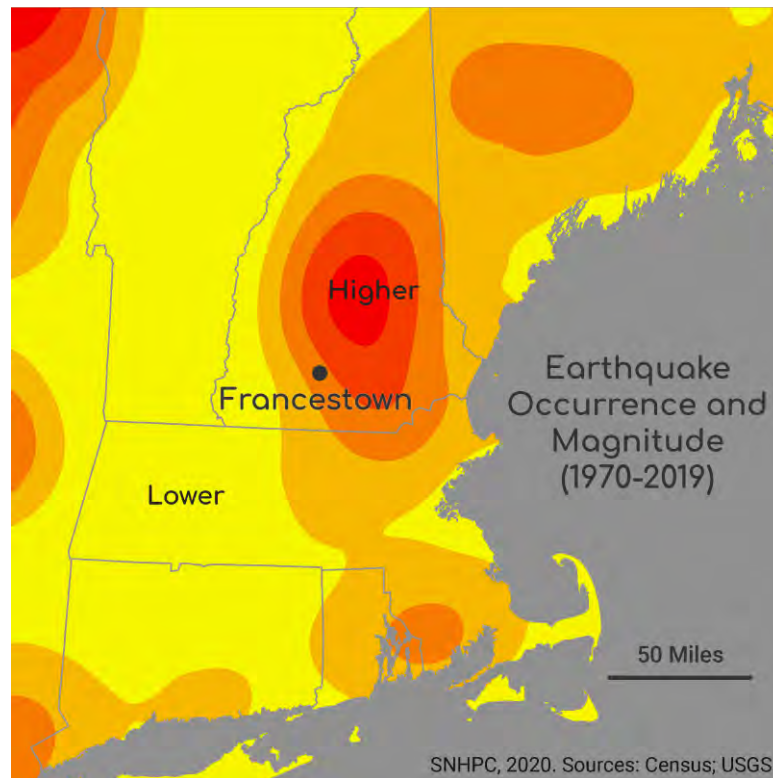


Figure 5: Earthquake Occurrence and Magnitude 1970 - 2019

Extent: There are two primary ways in which earthquakes are measured, magnitude (the size of the earthquake) and intensity (measure of the shaking and damage, which can vary from location to location). Magnitude is measured in the Moment Magnitude scale (based off the obsolete Richter scale). The Modified Mercalli Intensity (MMI) classifies the perceived feeling of the earthquake. One of New England's more notable seismic zones runs from the Ossipee Mountain area of New Hampshire, through the Auburn area, and continues south toward Boston, Massachusetts. This area has a mean return time of 408 years for a 6.0 Richter scale earthquake or a 39 percent probability of occurrence in 200 years. Additionally, for a 6.5 Richter scale quake, there is a mean return time of 1,060 years or a 17 percent probability of occurrence in 200 years (Pulli). When New England is generalized for earthquake probability estimation, the risk increases from the specific hazard zone noted above. For New England there is an estimated return time of every 10 years for an earthquake with a 4.6 Richter scale magnitude and 1000 years for 7.0 magnitude¹².

In the mid-1930s the Richter Scale, which measures earthquake magnitude, was developed, and adopted as a logarithmic scale based on the amplitude of the seismic waves as measured on a seismograph at a standard distance. In the 1970s the Richter Scale was replaced by the Moment Magnitude Scale which captures all different seismic waves from an earthquake which allows for

¹² State of New Hampshire Multi-Hazard Mitigation Plan 2018

more precise measurement. An increase of 1 on the magnitude scale represents an earthquake that has 10x the energy than an earthquake of the previous magnitude¹³

Modified Mercalli Intensity Scale		
Magnitude	Value	Description
1.0 – 3.0	I	Not felt except by a very few under especially favorable conditions.
3.0-3.9	II	Felt only by a few persons at rest, especially on upper floors of buildings.
3.0-3.9	III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
4.0-4.9	IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
4.0-4.9	V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
5.0-5.9	VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
5.0-5.9	VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
6.0 and higher	VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
6.0 and higher	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
7.0 and higher	X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
7.0 and higher	XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
7.0 and higher	XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Figure 6: Modified Mercalli Intensity Scale

5. Extreme Temperatures

A. Extreme Heat

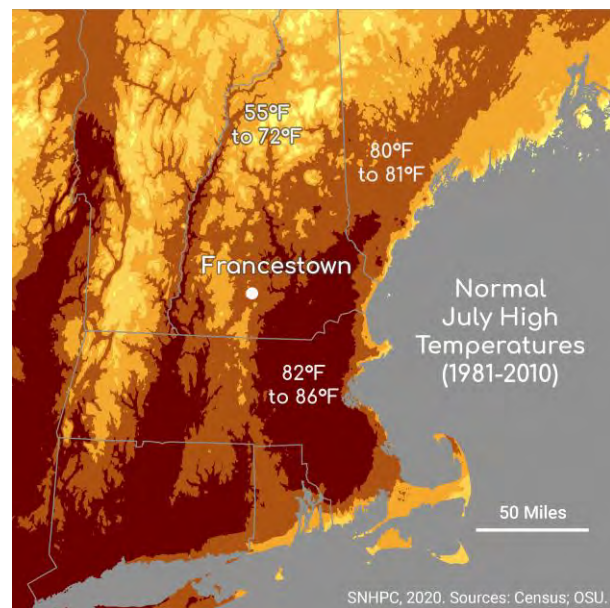
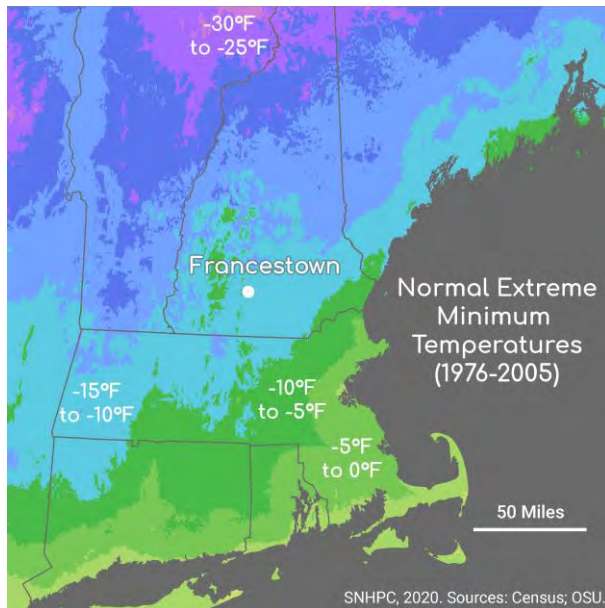
Description: Extreme Heat events occur because of above normal temperatures, which often coincide with high relative humidity, that increase the likelihood of heat disorders with prolonged exposure or strenuous activity. This risk comes from the heat and humidity preventing the human body from adequately cooling itself using natural methods; this can result in heat disorders and, if untreated, unconsciousness and eventually death. Heat related disorders include heat cramps, heat exhaustion, and heat stroke¹⁴. Populations at

¹³ <https://www.des.nh.gov/organization/commissioner/pip/factsheets/geo/documents/geo-3.pdf>

¹⁴ http://www.nws.noaa.gov/om/heat/heat_index.shtml

risk, such as the young and elderly, are more likely to experience a heat related disorder during a heat event¹⁵. NOAA's National Weather Service has prepared the following Heat Index identifying likelihood of heat disorders under prolonged exposure or strenuous activity.

Location: All areas in Town would be affected by an extreme heat event. Those most at risk would be elderly residents. The Town currently provides cooling stations at the town hall and library.



Absolute low and high temperatures expected in any given year

- Heat Advisory—Two or more consecutive hours of Heat Index values of 95-99 degrees Fahrenheit for two or more days OR any duration of Heat Index values of 100-104 degrees Fahrenheit. A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions.
- Excessive Heat Warning—Two or more hours with Heat Index values of 105 degrees Fahrenheit or greater. An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions.
- Excessive Heat Watches—Heat watches are issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.
- Excessive Heat Outlooks—Issued when the potential exists for an excessive heat event in the next 3-7 days. An Outlook provides information to those who need considerable lead-time to prepare for the event (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

¹⁵ State of New Hampshire Multi-Hazard Mitigation Plan 2018

¹⁶ <http://www.nws.noaa.gov/om/heat/ww.shtml>

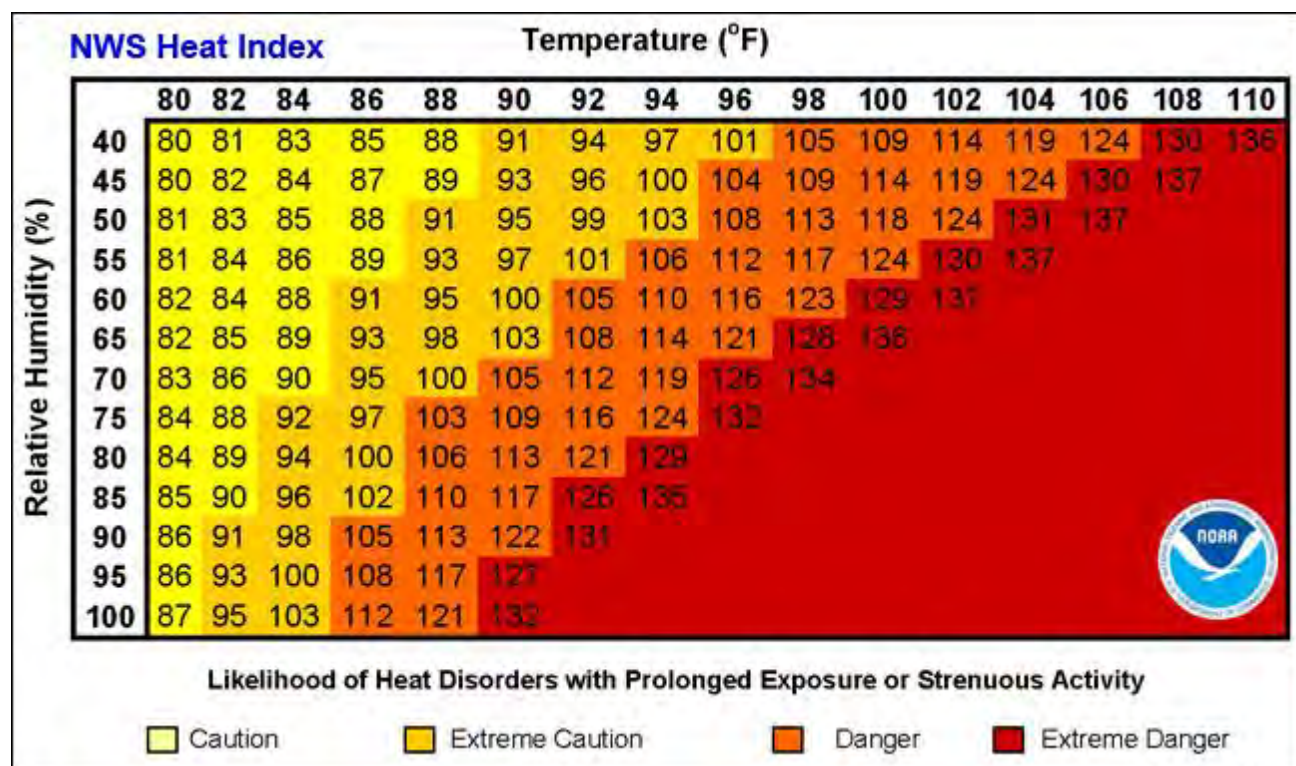


Figure 7: National Weather Service Heat Index

B. Extreme Cold

Description: Extreme Cold events occur during meteorological cold waves, also known as cold snaps, that are caused by the southern transport of arctic airmasses into the Northeast. These events are most common in winter months and increase the likelihood of cold disorders in humans and animals that have prolonged exposure to low ambient temperatures. This effect is exacerbated when there are winds present that effectively lower the temperature that is perceived by the human body, known as the wind chill. The risk comes from when the body is losing heat faster than it can produce it. Wind acts to carry heat away from the body, therefore amplifying the perceived temperature by the human body and reducing the body's core temperature. Cold disorders can include frostbite and hypothermia¹⁷. NOAA's National Weather Service has prepared the following windchill chart for calculating the dangers from winter winds and freezing temperature.

Location: All areas of Town would be affected by extreme cold.

Extent: (see wind chill chart)

¹⁷ State of New Hampshire Multi-Hazard Mitigation Plan 2018

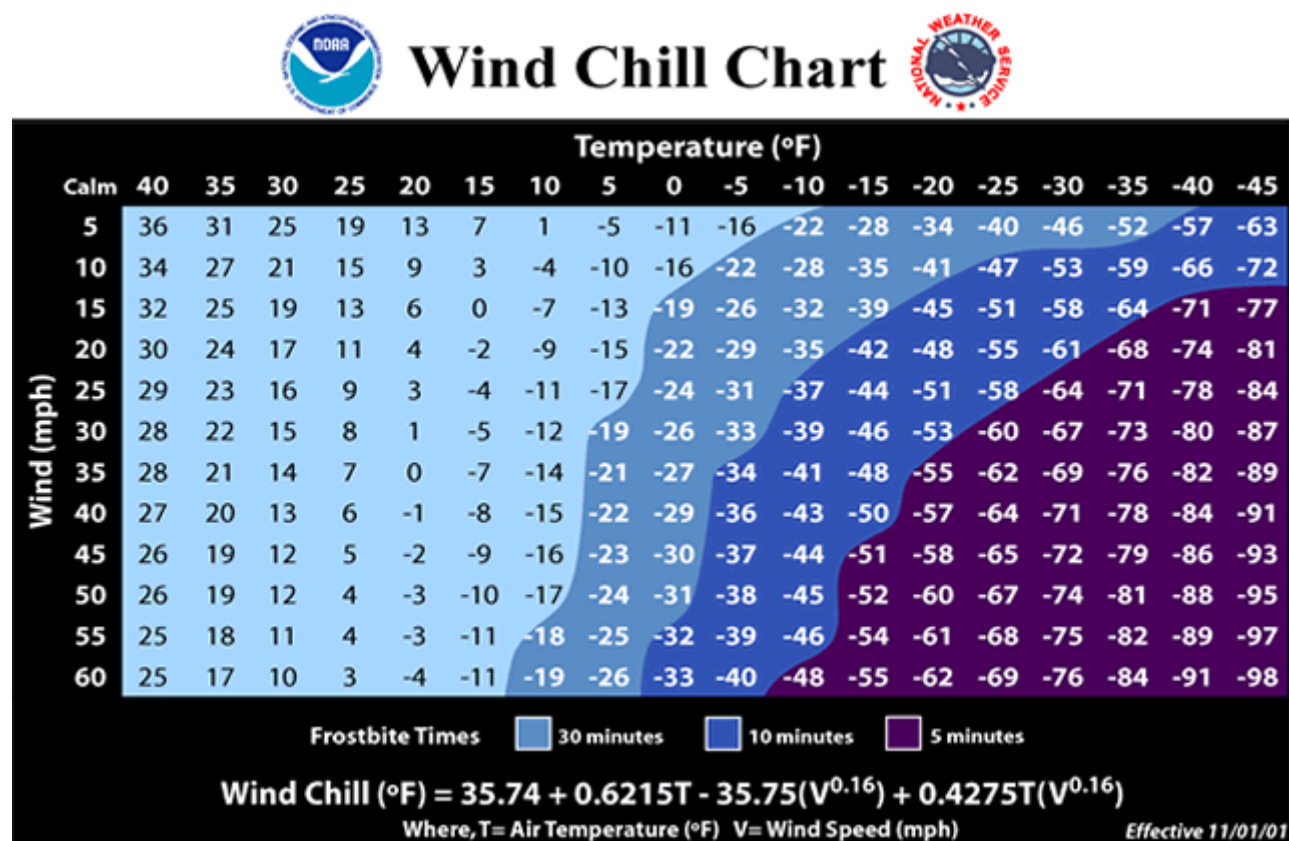


Figure 8: National Weather Service Wind Chill Chart

6. High Wind Events

Description:

The State of New Hampshire experiences two types of high wind events that may result from other severe storms and may occur at any time of the year:

- **Tornadoes:** A tornado is a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. Because wind is invisible, it is hard to see a tornado unless it forms a condensation funnel made up of water droplets, dust and debris. Tornadoes are the most violent of all atmospheric storms¹⁸.
- **Straight-line winds:** This term describes any thunderstorm wind that is not associated with rotation and is usually used to differentiate from tornadic winds. There are several sub types of straight-line winds.¹⁹
 - **Downdraft** – small-scale column of air that rapidly sinks towards the ground
 - **Downburst** – result of a downdraft, referred to as a macroburst when the area affected is greater than 2.5 miles and microburst when less than 2.5 miles.
 - **Gust Front**- leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Characterized by wind shift, temperature drop, and gusty winds in front of a thunderstorm
 - **Derecho** - widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. By definition, if the wind damage

¹⁸ <http://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

¹⁹ <http://www.nssl.noaa.gov/education/svrwx101/wind/types/>

swath extends more than 240 miles and includes wind gusts of at least 58 mph or greater along most of its length, then the event may be classified as a derecho²⁰.

Location: All areas in Town are at risk for high wind events. The Southwestern portion of the State is considered a special wind hazard area as demonstrated by the high proportion of tornadoes and severe wind events that are experienced annually. In 2016, Franconia's historic Old Meetinghouse was struck by a microburst, causing significant damage.

Extent: Tornadoes are measured based on the 3 second gust wind speed of the rotational winds. The Fujita Scale was developed at the University of Chicago in 1971 by Tetsuya Theodore Fujita in coordination with what is now known as NOAA's Storm Prediction Center to categorize each tornado by its intensity and estimated wind speeds. The scale was updated in 2007 to what is now known as the Enhanced Fujita Scale (EF-Scale). The EF-Scale is now the standard scale for measuring tornadoes in the United States and in Canada.²¹

Enhanced Fujita Scale	
EF Number	3 Second Gust (MPH)
0	65-85
1	86-110
2	111-135
3	136-165
4	166-200
5	Over 200

Figure 9: Enhanced Fujita Scale

Downbursts are primarily based on their size, but consideration is also given to duration and wind speed (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

Downbursts		
	Microburst	Macroburst
Size	Less than 2.5 Miles	Greater than 2.5 Miles
Duration	5-15 Minutes	5-30 Minutes
Wind speed (3 second gust - MPH)	up to 168 miles per hour	Damaging winds causing widespread damage, possibly as high as 134 mph ²³

Figure 10: Downburst Scale

7. Infectious Diseases

Description: Infectious diseases are illnesses caused by organisms—such as bacteria, viruses, fungi, or parasites. Many organisms live in and on our bodies. They are normally harmless or even helpful, but under certain conditions, some organisms may cause disease. Some infectious diseases can be passed from person to person, some are transmitted by bites from insects or animals, and others are acquired by ingesting contaminated food or water or being exposed to organisms in the environment. Signs and symptoms vary depending on the organism causing the infection, but often include fever and fatigue. Mild infections get better on their own without treatment, while some life-threatening infections may require hospitalization.²²

²⁰ State of New Hampshire Multi-Hazard Mitigation Plan 2018

²¹ <http://www.spc.noaa.gov/efscale/>

²² <http://www.mayoclinic.org/diseases-conditions/infectious-diseases/home/ovc-20168649>

Location: All areas and residents in Franconia would be susceptible to an infectious disease outbreak. The current COVID-19 pandemic of 2020 (DR-4516) is having a significant impact on the Town's departments and residents. Town offices are operational and open to the public but at limited building capacity. Public meetings are streamed online, and the public has the option to participate via "Zoom," an online, video conferencing platform. All residents are encouraged to practice social distancing and wear face coverings when entering public buildings.

Extent: The magnitude and severity of infectious diseases is described by its speed of onset (how quickly people become sick or cases are reported) and how widespread the infection is. Some infectious diseases are inherently more dangerous and deadly than others, but the best way to describe the extent of infectious diseases relates to the disease occurrence.²³

- *Endemic* – Constant presence and/or usual prevalence of a disease or infection agent in a population within a geographic area
- *Hyperendemic* – The persistent, high levels of disease occurrence
- *Cluster* – Aggregation of cases grouped in place and time that are suspected to be greater than the number expected even though the expected number may not be known
- *Epidemic* – An increase, usually sudden, in the number of cases of a disease above what is normally expected
- *Outbreak* – The same as epidemic, but over a much smaller geographical area
- *Pandemic* – Epidemic that has spread over several countries or continents, usually affecting many people (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

8. Landslide

Description: A landslide is the downward or outward movement of earth materials on a slope that is reacting to a combination of the force of gravity and a predisposed weakness in the material that allows the sliding process to initiate. The broad classification of landslides includes mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides and earth flows.²⁴

Location: Areas susceptible to a landslide in Town would be areas with steep slopes such as the Crotched Mountain Ski Area and Resort. A landslide in this area could block and damage surrounding roads, disrupt drainage and utilities, damage surrounding property and block streams. A landslide could also cause harm to hikers or skiers in the area.

Extent: While there is not a universally accepted standard or scientific scale has been developed for measuring the severity of all landslides, severity can be measured several other ways:

- Steepness/grade of the Slope (measured as a percent)
- Geographical Area
 - Measured in square feet, square yards, etc.
 - More accurately measured using LiDAR/GIS systems
- Earthquake, either causing the event or caused by the event (measured using the Moment
- Magnitude Intensity or Mercalli Scale) (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

9. Lightning

²³ <https://www.cdc.gov/ophs/csels/dsepd/ss1978/lesson1/section11.html>

²⁴ State of New Hampshire Multi-Hazard Mitigation Plan

Description: Lightning is a visible electric discharge produced by a thunderstorm. The discharge may occur within or between clouds, between a cloud and the air, between a cloud and the ground, or between the ground and a cloud.²⁵

Location: All structures, forested areas and recreational areas in Town have the potential to be impacted by a lightning strike. The areas at the most risk include Crotched Mountain and Bible Hill Road due to high elevation.

Extent: Lightning can be measured to determine how likely it may be for starting fires. Using a Level system of 1 to 6 corresponding with storm development and the number of lightning strikes, the Lightning Activity level (LAL) measures the magnitude of lightning strikes as displayed Figure 11, Lightning Activity Level (LAL).²⁶

Level	LAL Cloud and Storm Development	Cloud to Ground Strikes per 5 Minutes	Cloud to Ground Strikes per 15 Minutes
LAL 1	No thunderstorms	n/a	n/a
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a 5-minute period.	1 to 5	1 to 8
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a 5-minute period.	6 to 10	9 to 15
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a 5-minute period.	11 to 15	16 to 25
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a 5-minute period.	>15	>25
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag Warning.	6 to 10	9 to 15

Figure 11: Lightning Activity Level (LAL)

10. Severe winter weather

Description: The State of New Hampshire experiences four types of severe weather during the winter months:

- *Heavy Snow*

In forecasts, the amount of snow that is expected to fall is expressed as a range of values, such as 10- 12". There can be considerable uncertainty regarding snowfall values during heavy snowstorms and phrases such as "...up to 20 inches" or "...12 inches or more" can be utilized. Heavy snow is generally defined as²⁷:

²⁵ http://www.lightningsafety.noaa.gov/science/science_thunder.htm

²⁶ State of New Hampshire Multi-Hazard Mitigation Plan 2018

²⁷ <http://forecast.weather.gov/glossary.php?word=HEAVY%20SNOW>

- Snowfall accumulating to 4" or more in depth in 12 hours or less; or
- Snowfall accumulating to 6" or more in depth in 24 hours or less.
- **Blizzard**
- A blizzard is a snowstorm with the following conditions that is expected to prevail for a period of 3 hours or longer²⁸:
 - Sustained wind or frequent gusts to 35mph or greater; AND,
 - Considerable falling and/or blowing snow that frequently reduces visibility to less than ¼ mile
- **Nor'easter**
A Nor'easter is a large cyclonic storm that tracks north/northeastward along the East Coast of North America. It is so named due to the northeasterly prevailing wind direction that occurs during the storm. While these storms may occur at any time of the year, they are most frequent and severe during the months of September through April. Nor'easters usually develop off the east coast between Georgia and New Jersey, travel northeastward, and intensify in the New England region. Nor'easters nearly always bring precipitation in the form of heavy rain and/or snow, as well as gale force winds, rough seas, and coastal flooding²⁹.
- **Ice Storm**
Ice storms occur due to persistent freezing rain, which may form thick layers of ice on the Earth's surface.

Location: All areas of Franconia are at risk for severe winter weather events. The Town's

Extent: NOAA has developed the Regional Snowfall Index (RSI) which is a snowfall scale that uses area of snowfall amount of snowfall, and population to attempt to quantify the societal impacts of a snowstorm³⁰. This RSI scale can assist in the severity rating of blizzards as well.

Category	RSI Value	Description	Approximate % of Storms
0	0-1	N/A	54%
1	1-3	Notable	25%
2	3-6	Significant	13%
3	6-10	Major	5%
4	10-18	Crippling	2%
5	18+	Extreme	1%

Figure 12: NOAA Regional Snowfall Index (RSI)

11. Solar storms and space weather

Description: The term space weather is relatively new and describes the dynamic conditions in the Earth's outer space environment, like how the terms "climate" and "weather" refer to the conditions in the Earth's lower atmosphere. Space weather includes all conditions and events on the sun, in the solar wind, in near-Earth space, and in our upper atmosphere that can affect space-borne and ground based technological systems³¹.

²⁸ <http://w1.weather.gov/glossary/index.php?letter=b>

²⁹ <http://www.nws.noaa.gov/om/winter/noreaster.shtml>

³⁰ <https://www.ncdc.noaa.gov/snow-and-ice/rsi/overview>

³¹ https://www.nasa.gov/mission_pages/sunearth/spaceweather/index.html#q12

Location: While no significant damage has occurred from solar storms or space weather in Town, areas that would be most susceptible to damage would be those with heavy reliance on technological communication, radio operations and GPS. These would be the Town's emergency management and Fire Departments.

Extent:

Scale	Description	Effect	Physical Measure	Average Frequency (1 cycle = 11 years)
G 5	Extreme	Power systems: Widespread voltage control problems and protective system problems can occur, some grid systems may experience complete collapse or blackouts. Transformers may experience damage. Spacecraft operations: May experience extensive surface charging, problems with orientation, uplink/downlink and tracking satellites. Other systems: Pipeline currents can reach hundreds of amps, HF (high frequency) radio propagation may be impossible in many areas for one to two days, satellite navigation may be degraded for days, low-frequency radio navigation can be out for hours, and aurora has been seen as low as Florida and southern Texas (typically 40° geomagnetic lat.).	Kp = 9	4 per cycle (4 days per cycle)
G 4	Severe	Power systems: Possible widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid. Spacecraft operations: May experience surface charging and tracking problems, corrections may be needed for orientation problems. Other systems: Induced pipeline currents affect preventive measures, HF radio propagation sporadic, satellite navigation degraded for hours, low-frequency radio navigation disrupted, and aurora has been seen as low as Alabama and northern California (typically 45° geomagnetic lat.).	Kp = 8, including a 9-	100 per cycle (60 days per cycle)
G 3	Strong	Power systems: Voltage corrections may be required, false alarms triggered on some protection devices. Spacecraft operations: Surface charging may occur on satellite components, drag may increase on low-Earth-orbit satellites, and corrections may be needed for orientation problems. Other systems: Intermittent satellite navigation and low-frequency radio navigation problems may occur, HF radio may be intermittent, and aurora has been seen as low as Illinois and Oregon (typically 50° geomagnetic lat.).	Kp = 7	200 per cycle (130 days per cycle)
G 2	Moderate	Power systems: High-latitude power systems may experience voltage alarms, long-duration storms may cause transformer damage. Spacecraft operations: Corrective actions to orientation may be required by ground control; possible changes in drag affect orbit predictions. Other systems: HF radio propagation can fade at higher latitudes, and aurora has been seen as low as New York and Idaho (typically 55° geomagnetic lat.).	Kp = 6	600 per cycle (360 days per cycle)
G 1	Minor	Power systems: Weak power grid fluctuations can occur. Spacecraft operations: Minor impact on satellite operations possible. Other systems: Migratory animals are affected at this and higher levels; aurora is commonly visible at high latitudes (northern Michigan and Maine).	Kp = 5	1700 per cycle (900 days per cycle)

Figure 13 :Geomagnetic Storm Scale

Scale	Description	Effect	Physical measure (Flux level of ≥ 10 MeV particles)	Average Frequency (1 cycle = 11 years)
S 5	Extreme	<p>Biological: Unavoidable high radiation hazard to astronauts on EVA (extra-vehicular activity); passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.</p> <p>Satellite operations: Satellites may be rendered useless, memory impacts can cause loss of control, may cause serious noise in image data, star-trackers may be unable to locate sources; permanent damage to solar panels possible.</p> <p>Other systems: Complete blackout of HF (high frequency) communications possible through the polar regions, and position errors make navigation operations extremely difficult.</p>	10 ⁵	Fewer than 1 per cycle
S 4	Severe	<p>Biological: Unavoidable radiation hazard to astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.</p> <p>Satellite operations: May experience memory device problems and noise on imaging systems; star-tracker problems may cause orientation problems, and solar panel efficiency can be degraded.</p> <p>Other systems: Blackout of HF radio communications through the polar regions and increased navigation errors over several days are likely.</p>	10 ⁴	3 per cycle
S 3	Strong	<p>Biological: Radiation hazard avoidance recommended for astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.</p> <p>Satellite operations: Single-event upsets, noise in imaging systems, and slight reduction of efficiency in solar panel are likely.</p> <p>Other systems: Degraded HF radio propagation through the polar regions and navigation position errors likely.</p>	10 ³	10 per cycle
S 2	Moderate	<p>Biological: Passengers and crew in high-flying aircraft at high latitudes may be exposed to elevated radiation risk.</p> <p>Satellite operations: Infrequent single-event upsets possible.</p> <p>Other systems: Small effects on HF propagation through the polar regions and navigation at polar cap locations possibly affected.</p>	10 ²	25 per cycle
S 1	Minor	<p>Biological: None.</p> <p>Satellite operations: None.</p> <p>Other systems: Minor impacts on HF radio in the polar regions.</p>	10	50 per cycle

Figure 14: Solar Radiation Storms Scale

Scale	Description	Effect	Physical measure	Average Frequency (1 cycle = 11 years)
R 5	Extreme	HF Radio: Complete HF (high frequency) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results in no HF radio contact with mariners and en route aviators in this sector. Navigation: Low-frequency navigation signals used by maritime and general aviation systems experience outages on the sunlit side of the Earth for many hours, causing loss in positioning. Increased satellite navigation errors in positioning for several hours on the sunlit side of Earth, which may spread into the night side.	X20 (2×10^{-3})	Less than 1 per cycle
R 4	Severe	HF Radio: HF radio communication blackout on most of the sunlit side of Earth for one to two hours. HF radio contact lost during this time. Navigation: Outages of low-frequency navigation signals cause increased error in positioning for one to two hours. Minor disruptions of satellite navigation possible on the sunlit side of Earth.	X10 (10^{-3})	8 per cycle (8 days per cycle)
R 3	Strong	HF Radio: Wide area blackout of HF radio communication, loss of radio contact for about an hour on sunlit side of Earth. Navigation: Low-frequency navigation signals degraded for about an hour.	X1 (10^{-4})	175 per cycle (140 days per cycle)
R 2	Moderate	HF Radio: Limited blackout of HF radio communication on sunlit side, loss of radio contact for tens of minutes. Navigation: Degradation of low-frequency navigation signals for tens of minutes.	M5 (5×10^{-5})	350 per cycle (300 days per cycle)
R 1	Minor	HF Radio: Weak or minor degradation of HF radio communication on sunlit side, occasional loss of radio contact. Navigation: Low-frequency navigation signals degraded for brief intervals.	M1 (10^{-5})	2000 per cycle (950 days per cycle)

Figure 15: Radio Blackout Scale

12. Tropical and Post-Tropical Cyclones

Description: A tropical cyclone is the generic term for a non-frontal synoptic scale low-pressure system over tropical or sub-tropical waters with organized convection (i.e. thunderstorm activity) and defined cyclonic surface wind circulation. Once formed, a tropical cyclone is maintained by the extraction of heat energy from the ocean at high temperature and heat export at the low temperatures of the upper troposphere³².

Location: All areas in Town are at risk for damage from a tropical and post tropical cyclone. Inland communities such as Franconia are less susceptible to hurricanes and other tropical storm systems than coastal areas. However, as Tropical Storm Irene demonstrated in 2011, cyclones can have significant impacts inland due to high rainfall and flash flooding. The following figure demonstrates lower hurricane activity in Franconia from 1990 – 2019 (Figure 16).

³² https://courseware.e-education.psu.edu/courses/meteo241/Images/Section1/tropical_cyclones0103.html

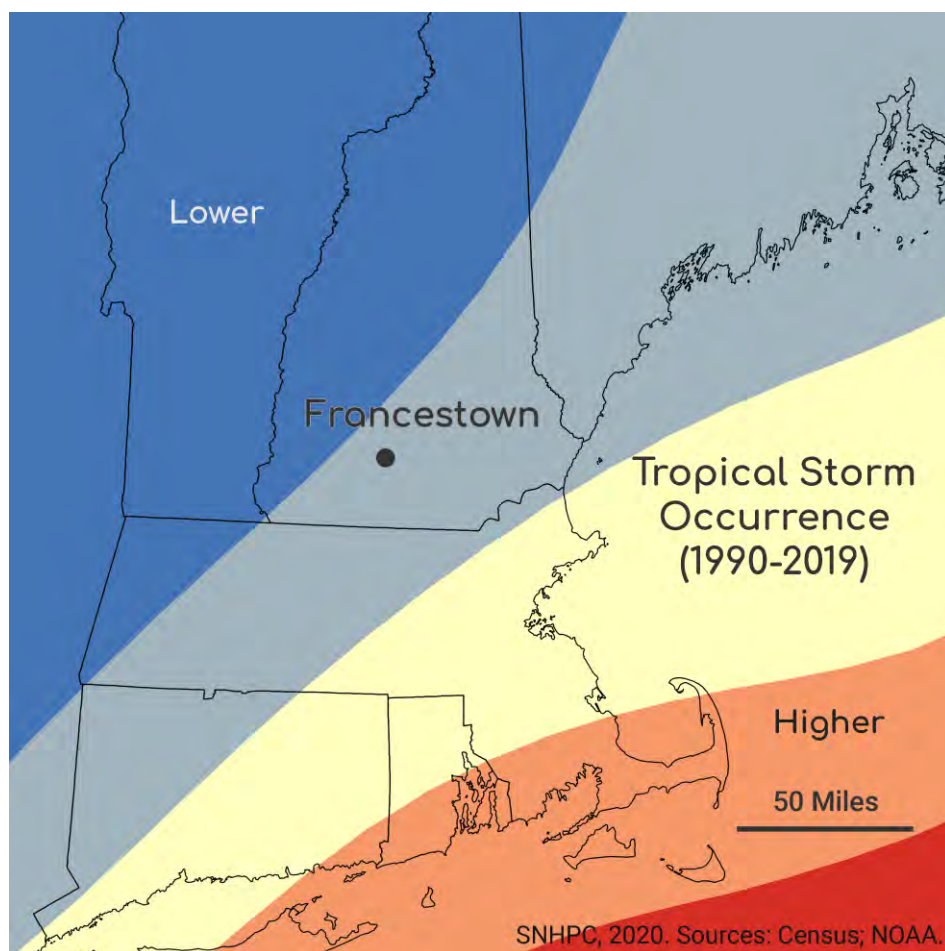


Figure 16: Tropical Storm Occurrence 1990 - 2019

Extent: The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures³³

Category	Definition	Effects
1	Winds 74-95 mph	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	Winds 96-110 mph	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near total power loss is expected with outages that could last from several days to weeks.

³³ <http://www.nhc.noaa.gov/aboutsshws.php>

3	Winds 111-129 mph	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	Winds 130-156 mph	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	Winds greater than 157 mph	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Figure 17: The Saffir-Simpson Hurricane Wind Scale

13. Wildfire

Description: A wildfire is any non-structural fire, other than prescribed fire, that occurs in the Wildland. Wildland here is defined as consisting of vegetation or natural fuels³⁴. Wildfires can be referred to as brushfires, wildland fires, or grass fires depending on the location and what is burning.³⁵

Location: All of Franconia is at risk for damage caused by wildfires. Much of the town is forested, with many isolated homes in remote areas. Areas that have experienced damage from wildfires include Driscoll Hill, New Boston Road at the Foote Farm, and Woodward Hill Road.

Extent: Currently, there is not a universally adopted scale for measuring wildfires within the State of New Hampshire. There are numerous factors that can be used to describe the severity and complexity of a wildfire:

- Acreage of the fire (size)
- Topography and landscape
- Amount of time required to extinguish the fire
- Environmental factors (drought or wind)
- Damages to urban infrastructure along the WUI, damages to utility infrastructure, or other severe environmental damages (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

National Wildfire Coordinating Group (NWCG) Size Fire Classification	
Class A	1/4 acre or less
Class B	More than 1/4 acre, but less than 10 acres
Class C	10 acres or more, but less than 100 acres
Class D	100 acres or more, but less than 300 acres
Class E	300 acres or more, but less than 1,000 acres
Class F	1,000 acres or more, but less than 5,000 acres
Class G	5,000 acres or more

Figure 18: National Wildfire Coordinating Group (NWCG) Fire Size Classification

³⁴ https://www.nwcg.gov/glossary/a-z#letter_w

³⁵ State of New Hampshire Multi-Hazard Mitigation Plan 2018

Technological Hazards

1. Aging Infrastructure

Definition: The continued regression of the State's physical systems including, but not limited to roads and bridges, culverts, utilities, water, and sewage.³⁶

Like states throughout the Nation, New Hampshire suffers from Aging Infrastructure. The American Society of Civil Engineers released its 2017 report card bestowing the State with a C – rating overall.³⁷ The report further identifies that the increase in annual number of vehicle miles traveled has led to more rapid deterioration of roads and bridges. The average lifespan for a bridge is around fifty years, and the current average age of state-owned bridges in New Hampshire is 52-56 years (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

2. Dam Failure

Definition: Dam Failure is defined as the sudden, rapid, and uncontrolled release of impounded water.³⁸ Within the State of New Hampshire dams are categorized into one of four classifications, which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as Non- Menace, Low Hazard, Significant Hazard, and High Hazard (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

Non-Menace (NM) structure means a dam that is not a menace because it is in a location and of a size that failure or mis operation of the dam would not result in probable loss of life or loss to property, provided the dam is:

- Less than six feet in height if it has a storage capacity greater than 50 acre-feet; or
- Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet.

Low Hazard (L) structure means a dam that has a low hazard potential because it is in a location and of a size that failure or mis operation of the dam would result in any of the following:

- No possible loss of life
- Low economic loss to structures or property.
- Structural damage to a town or city road or private road accessing property other than the dam owner's that could render the road impassable or otherwise interrupt public safety services.
- The release of liquid industrial, agricultural, or commercial wastes, septage, or contaminated sediment if the storage capacity is less than two-acre-feet and is
- located more than 250 feet from a water body or water course.
- Reversible environmental losses to environmentally sensitive sites.

Significant Hazard (S) structure means a dam that has a significant hazard potential because it is in a location and of a size that failure or mis operation of the dam would result in any of the following:

- No probable loss of lives.

³⁶ State of New Hampshire Multi-Hazard Mitigation Plan 2018

³⁷ <https://www.infrastructurereportcard.org/state-item/new-hampshire/>

³⁸ National Oceanic and Atmospheric Administration (NOAA), Hydrological Terminology (2014)

- Major economic loss to structures or property.
- Structural damage to a Class I or Class II road that could render the road impassable or otherwise interrupt public safety services.
- Major environmental or public health losses, including one or more of the following:
 - Damage to a public water system, as defined by RSA 485:1-a, XV, which will take longer than 48 hours to repair.
 - The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or more.
 - Damage to an environmentally sensitive site that does not meet the definition of reversible environmental losses (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

3. Known and Emerging Contaminants

Definition: Contaminants in drinking water include naturally occurring contaminants associated with the geology in a given region and known man-made contaminants associated with nearby land use activities. Some contaminants are considered emerging contaminants. Emerging contaminants are chemicals that historically have not been monitored in drinking water due to the lack of laboratory capabilities to detect the compounds or a lack of knowledge about the use of certain compounds and their potential to cause human health impacts. Emerging contaminants are particularly concerning to the public because the potential health impacts of these are sometimes uncertain.³⁹

4. Long-term Utility Outage

Definition: A long-term utility outage is defined as a prolonged absence of any type of public utility that is caused by infrastructure failure, cyber-attack, supply depletion, distribution disruption, water source contamination, or a natural, human caused or technological disaster (State of New Hampshire Multi-Hazard Mitigation Plan 2018). The State of New Hampshire considers a long-term utility outage as one lasting a month or more.

Human-caused Hazards

1. Cyber Events

Definition: The Department of Homeland Security (DHS) defines a cyber incident as an event occurring on or conducted through a computer network that actually or imminently jeopardizes the confidentiality, integrity, or availability of computers, information or communications systems or networks, physical or virtual infrastructure controlled by computers or information systems, or information resident thereon.⁴⁰

The State of New Hampshire continues to increase its reliance on computers and the Internet. With this upturn in dependence comes the escalated risk for a cyber event to occur. Potential cyber event targets include but are not limited to: critical infrastructure; the public and private sector; and New Hampshire citizens via cyberattacks such as security breaches, spear phishing, and social media fraud (State of New Hampshire Multi-Hazard Mitigation Plan 2018).

2. Mass Casualty Incident

³⁹ State of New Hampshire Multi-Hazard Mitigation Plan 2018

⁴⁰ https://www.us-cert.gov/sites/default/files/ncirp/National_Cyber_Incident_Response_Plan.pdf

Definition: Any large number of casualties produced in a relatively short period of time, usually as the result of a single incident such as a military aircraft accident, hurricane, flood, earthquake, or armed attack that exceeds local logistic support capabilities.⁴¹

3. Terrorism/Violence

Definition: Premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agent.⁴²

According to the Federal Bureau of Investigation (FBI), the term terrorism can be subcategorized into two categories:

- *International Terrorism:* Perpetrated by individuals and/or groups inspired by or associated with designated foreign terrorist organizations or nations (state-sponsored).
- *Domestic Terrorism:* Perpetrated by individuals and/or groups inspired by or associated with primarily U.S.-based movements that espouse extremist ideologies of a political, religious, social, racial, or environmental nature.⁴³

4. Transport Accident

Definition: A transport accident is any accident that occurs during transportation. Specifically, for this Plan, it refers to an aviation, rail, shipping, tractor trailer, or vehicle accident.⁴⁴

⁴¹ <https://apps.usfa.fema.gov/thesaurus/main/termDetail?id=1530&letter=M>

⁴² Title 22 of the US Code, Section 2656f(d):

⁴³ <https://www.fbi.gov/investigate/terrorism>

⁴⁴ State of New Hampshire Multi-Hazard Mitigation Plan 2018

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Welcome - Drought Management Program - NH Department of Environmental Services, www.des.nh.gov/organization/divisions/water/dam/drought/

Agencies:

New Hampshire Homeland Security and Emergency Management		(603) 271-2231
Federal Emergency Management Agency		1-877-336-2734
NH Regional Planning Commissions:		
	Central NH Regional Planning Commission	226-6020
	Lakes Region Planning Commission	279-8171
	Nashua Regional Planning Commission	424-2240
	North Country Council	444-6303
	Rockingham Planning Commission	778-0885
	Southern New Hampshire Planning Commission	669-4664
	Southwest Region Planning Commission	357-0557
	Strafford Regional Planning Commission	742-2523
	Upper Valley Lake Sunapee Regional Planning Commission	448-1680
NH Executive Department:		
	New Hampshire Office of Energy and Planning	(603) 271-2155
NH Department of Cultural Resources		(603) 271-2392
	Division of Historical Resources	603-271-3483
NH Department of Environmental Services		(603) 271-3503
	Air Resources	271-1386
	Waste Management	271-2925
	Water Conservation	271-0659
	Dam Safety & Maintenance	271-3406
NH Fish and Game Department		(603) 271-3421
NH Department of Resources and Economic Development		(603) 271-2411
	Division of Economic Development	(603) 271-2591

	Division of Forests and Lands	(603) 271-2214
	Division of Parks and Recreation	(603) 271-3556
NH Department of Transportation		(603) 271-3734
U.S. Department of Commerce		(202) 482-2000
	National Oceanic and Atmospheric Administration	1-301-713-1208
	National Weather Service; Gray, Maine	207-688-3216
U.S. Department of the Interior		
	U.S. Fish and Wildlife Service	1-800-344-9453
	U.S. Geological Survey	1-888-275-8747
U.S. Department of Agriculture		

Appendix C: Technical and Financial Assistance for Hazard Mitigation

This matrix provides information about key all-hazards grant programs from the Departments of Homeland Security, Justice, Transportation, Health and Human Services, and Education, under which state, local, and tribal governments, first responders, and the public are eligible to receive preparedness, response, recovery, mitigation, and prevention assistance.

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
Programs to prepare the Nation to address the consequences of natural and man-made disasters and emergencies.				
Department of Homeland Security	<i>Border and Transportation Security Directorate</i>	State Homeland Security Grant Program www.ojp.usdoj.gov	This core assistance program provides funds to build capabilities at the state and local levels and to implement the goals and objectives included in state homeland security strategies and initiatives in the State Preparedness Report.	State governments
	<i>Emergency Preparedness and Response Directorate</i>	Emergency Management Performance Grants www.fema.gov http://www.fema.gov/government/grant/index.shtm	To assist State and local governments in enhancing and sustaining all-hazards emergency management capabilities.	States with pass through to local emergency management organizations
	<i>Emergency Preparedness and Response Directorate</i>	Assistance to Firefighters Grant Program www.usfa.fema.gov/grants http://www.firegrantsupport.com/afg/	The primary goal of the Assistance to Firefighters Grants (AFG) is to meet the firefighting and emergency response needs of fire departments and nonaffiliated emergency medical services organizations.	Local, State, and Regional Fire Departments and agencies.
	<i>Emergency Preparedness and Response Directorate</i>	State and Local Emergency Operation Centers (EOCs) www.fema.gov http://www.fema.gov/government/grant/index.shtm	To improve emergency management and preparedness capabilities by supporting flexible, sustainable, secure, and interoperable Emergency Operations Centers (EOCs) with a focus on addressing identified deficiencies and needs.	States; local governments may be sub-grantees of the State
	<i>Emergency Preparedness and Response Directorate</i>	Citizen Corps www.citizencorps.gov	To bring community and government leaders together to coordinate community involvement in emergency preparedness, planning, mitigation, response and recovery.	States with a pass through to local governments

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
Department of Homeland Security	Emergency Preparedness and Response Directorate	National Fire Academy Training Grants www.fema.gov	To provide financial assistance to State Fire Training Systems for the delivery of a variety of National Fire Academy courses/programs.	State fire training organizations
	Emergency Preparedness and Response Directorate	Emergency Management Institute Training Assistance www.fema.gov	To defray travel and per diem expenses of State, local and tribal emergency management personnel who attend training courses conducted by the Emergency Management Institute, at the Emmitsburg, Maryland facility; Bluemont, Virginia facility; and selected off-site locations. Its purpose is to improve emergency management practices among State, local and tribal government managers, in response to emergencies and disasters. Programs embody the Comprehensive Emergency Management System by unifying the elements of management common to all emergencies: planning, preparedness, mitigation, response, and recovery.	State, local, and tribal emergency managers
	Emergency Preparedness and Response Directorate	Hazardous Materials Assistance Program (CERCLA Implementation)	Provide technical and financial assistance through the States to support State, local and tribal governments in oil and hazardous materials emergency planning and exercising. To support the Comprehensive Hazardous Materials (HAZMAT) Emergency Response – Capability Assessment Program (CHER-CAP) activities.	State, local, and tribal governments, state emergency response committees, local emergency planning commissions
	Emergency Preparedness and Response Directorate	Interoperable Communications Equipment Grant http://www.fema.gov/government/grant/index.shtm	To provide governance, planning, training and exercise, and equipment funding to States, Territories, and local and tribal governments to carry out initiatives to improve interoperable emergency communications, including communications in collective response to natural disasters, acts of terrorism, and other man-made disasters.	N/A

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
Department of Homeland Security	<i>Emergency Preparedness and Response Directorate</i>	Chemical Stockpile Emergency Preparedness Program www.fema.gov	A cooperative agreement to enhance emergency preparedness capabilities of the States and local communities at each of the eight chemical agent stockpile storage facilities. The purpose of the program is to assist States and local communities in efforts to improve their capacity to plan for and respond to accidents associated with the storage of chemical warfare materials.	State and local governments and the general public in the vicinity of the eight chemical agent stockpile storage facilities.
	<i>National Preparedness Directorate</i>	Metropolitan Medical Response System http://www.fema.gov/mmrs	To provide contractual funding to the 124 largest metropolitan jurisdictions to sustain and enhance the integrated medical response plans to a WMD terrorist attack.	Local governments
Department of Justice	<i>Office of Domestic Preparedness</i>	State Domestic Preparedness Equipment Support Program http://www.ojp.usdoj.gov/odp/equipment.htm	Funding will be provided to enhance first responder capabilities, and to provide for equipment purchases and exercise planning activities for response to Weapons of Mass Destruction (WMD) domestic terrorist incidents.	State and local governments
	<i>Office of Community Oriented Police Services (COPS)</i>	COPS Interoperable Communications Technology Program www.cops.usdoj.gov	To facilitate communications interoperability public safety responders at the state and local level.	Tribal, State, and local law enforcement agencies
Department of Health and Human Services		Public Health and Social Services Emergency Fund www.hhs.gov	To continue to prepare our nation's public health system and hospitals for possible mass casualty events, and to accelerate research into new treatments and diagnostic tools to cope with possible bioterrorism incidents.	Individuals, families, Federal, State, and local government agencies and emergency health care providers
	<i>Health Resources and Services Administration</i>	State Rural Hospital Flexibility Program www.ruralhealth.hrsa.gov	To help States work with rural communities and hospitals to develop and implement a rural health plan, designate critical access hospitals (CAHs), develop integrated networks of care, improve emergency medical services and improve quality, service and organizational performance.	States with at least one hospital in a non-metropolitan region

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
Department of Health and Human Services	Health Resources and Services Administration	EMS for Children www.hrsa.gov	To support demonstration projects for the expansion and improvement of emergency medical services for children who need treatment for trauma or critical care. It is expected that maximum distribution of projects among the States will be made and that priority will be given to projects targeted toward populations with special needs, including Native Americans, minorities, and the disabled.	State governments and schools of medicine
	National Institute of Health	Superfund Hazardous Substances Basic Research and Education www.nih.gov	To establish and support an innovative program of basic research and training consisting of multi-project, interdisciplinary efforts that may include each of the following: (1) Methods and technologies to detect hazardous substances in the environment; (2) advance techniques for the detection, assessment, and evaluation of the effects of hazardous substances on humans; (3) methods to assess the risks to human health presented by hazardous substances; and (4) and basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances.	Any public or private entity involved in the detection, assessment, evaluation, and treatment of hazardous substances; and State and local governments
	Centers for Disease Control	Immunization Research, Demonstration, Public Information and Education www.cdc.gov	To assist States, political subdivisions of States, and other public and private nonprofit entities to conduct research, demonstrations, projects, and provide public information on vaccine-preventable diseases and conditions.	States and nonprofits organizations
	Centers for Disease Control	Surveillance of Hazardous Substance Emergency Events www.atsdr.cdc.gov	To assist State health departments in developing a State-based surveillance system for monitoring hazardous substance emergency events. This surveillance system will allow the State health department to better understand the public health impact of hazardous substance emergencies by developing, implementing, and evaluating a State-based surveillance system.	State, local, territorial, and tribal public health departments

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
Department of Health and Human Services	<i>Centers for Disease Control</i>	Human Health Studies, Applied Research and Development www.atsdr.cdc.gov	To solicit scientific proposals designed to answer public health questions arising from situations commonly encountered at hazardous waste sites. The objective of this research program is to fill gaps in knowledge regarding human health effects of hazardous substances identified during the conduct of ATSDR's health assessments, consultations, toxicological profiles, and health studies, including but not limited to those health conditions prioritized by ATSDR.	State health departments
Department of Education	Office of Safe and Drug free Schools (OSDFS)	Readiness and Emergency Management for Schools http://www.ed.gov/programs/dvpemergencyresponse/index.html/	This grant program supports efforts by LEAs to improve and strengthen their school emergency management plans, including training school personnel and students in emergency management procedures; communicating with parents about emergency plans and procedures; and coordinating with local law enforcement, public safety, public health, and mental health agencies.	School Districts
Department of Transportation	<i>Pipeline and Hazardous Materials Safety Administration (PHMSA)</i>	Hazardous Materials Emergency Preparedness Training and Planning Grants http://phmsa.dot.gov/hazmat/grants	Increase state, local, territorial, and Native American tribal effectiveness to safely and efficiently handle HazMat accidents and incidents; enhance implementation of the Emergency Planning and Community Right-to-Know Act of 1986; and encourage a comprehensive approach to emergency planning and training by incorporating response to transportation standards.	States, local, territorial, tribal governments.
Programs to coordinate Federal response efforts and to assist states, localities, and tribes in responding to disasters and emergencies.				
Department of Homeland Security	<i>Emergency Preparedness and Response Directorate</i>	Urban Search and Rescue www.fema.gov	To expand the capabilities of existing Urban Search and Rescue Task Forces.	28 existing US&R Task Forces
Programs to provide assistance to States, localities, tribes, and the public to alleviate suffering and hardship resulting from Presidentially declared disasters and emergencies caused by all types of hazards.				
Department of Homeland Security	<i>Emergency Preparedness and Response Directorate</i>	Individuals and Households Program http://www.fema.gov/assistance/process/guide.shtm	To provide assistance to individuals and families who have been affected by natural or man-made Presidentially declared disasters. Funding provided from the Disaster Relief Fund.	Individuals and Families

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
	<i>Emergency Preparedness and Response Directorate</i>	Public Assistance http://www.fema.gov/government/grant/pa/index.shtm	To provide assistance to states, localities, tribes, and certain non-profit organizations affected by natural or man-made Presidentially declared disasters. Funding provided from the Disaster Relief Fund	State, local and tribal governments; private non-profit organizations
	<i>Emergency Preparedness and Response Directorate</i>	Fire Management Assistance Grant Program http://www.fema.gov/government/grant/fmagp/index.shtm	Provide funds to States, local, and tribal governments for the mitigation, management, and control of wildland fires posing serious threats to improved property.	State, local and tribal governments
Small Business Administration	<i>Office of Disaster Assistance</i>	Disaster Loan Program http://www.sba.gov/services/disasterassistance/	To offer financial assistance to those who are trying to rebuild their homes and businesses in the aftermath of a disaster.	Individuals, families, private sector
Department of Justice	<i>Office for Victims of Crime</i>	Antiterrorism and Emergency Assistance Program http://www.ojp.usdoj.gov/ovc/publications/infores/terrorism/	To provide assistance programs for victims of mass violence and terrorism occurring within and outside the United States and a compensation program for victims of international terrorism.	Public and private nonprofit victim assistance agencies
Programs to reduce or eliminate future risk to lives and property from disasters.				
Department of Homeland Security	<i>Emergency Preparedness and Response Directorate</i>	Hazard Mitigation Grant Program http://www.fema.gov/government/grant/hmgp/index.shtm	To provide assistance to states, localities, and tribes to fund projects that will reduce the loss of lives and property in future disasters. Funding is provided from the Disaster Relief Fund and administered by the states according to their own priorities.	State, local, and tribal governments
	<i>Emergency Preparedness and Response Directorate</i>	Pre-Disaster Mitigation Program http://www.fema.gov/government/grant/pdm/index.shtm	This program provides funding for mitigation activities before disaster strikes. In recent years it has provided assistance for mitigation planning. In FY03, Congress passes a competitive pre-disaster mitigation grant program that will include project funding.	State, local, and tribal governments
Department of Homeland Security	<i>Emergency Preparedness and Response Directorate</i>	Flood Mitigation Assistance Program (FMA) http://www.fema.gov/government/grant/fma/index.shtm	The FMA program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the <u>National Flood Insurance Program</u> (NFIP). FEMA provides FMA funds to assist States and communities implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.	State, local and tribal governments

Agency	Office/ Directorate	Program	Purpose	Funding Beneficiaries
	<i>Emergency Preparedness and Response Directorate</i>	Repetitive Flood Claims Program (RFC) http://www.fema.gov/government/grant/rfc/index.shtm	The Repetitive Flood Claims (RFC) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108-264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al). Up to \$10 million is available annually for FEMA to provide RFC funds to assist States and communities reduce flood damages to insured properties that have had one or more claims to the National Flood Insurance Program (NFIP).	State, local and tribal governments
	<i>Emergency Preparedness and Response Directorate</i>	Severe Repetitive Loss Program (SRL) http://www.fema.gov/government/grant/srl/index.shtm	The Severe Repetitive Loss (SRL) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004, which amended the National Flood Insurance Act of 1968 to provide funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss (SRL) structures insured under the National Flood Insurance Program (NFIP).	State, local and tribal governments
	<i>Emergency Preparedness and Response Directorate</i>	Map Modernization http://www.fema.gov/plan/prevent/fhm/mm_main.shtm	This funding provides assistance to develop digital flood maps, support flood-mapping activities and expand the Cooperating Technical Partners Program to communities and regional entities.	State, local and tribal governments
Programs to interdict potentially hazardous events from occurring				
Department of Health and Human Services	<i>Centers for Disease Control</i>	Immunization Grants www.cdc.gov	To assist States and communities in establishing and maintaining preventive health service programs to immunize individuals against vaccine-preventable diseases.	States
Other				
Department of Housing and Urban Development	<i>NH Office of Energy and Planning</i>	Community Development Block Grant (CDBG) Program http://www.hud.gov/offices/cpd/communitydevelopment/programs/	HUD provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.	State, local and tribal governments

Mitigation Programs of Other NH State Agencies

The following State of New Hampshire agencies are directly or indirectly involved in activities that include Hazard Mitigation Planning and/or program implementation:

- NH Department of Transportation Bureau of Repair and Maintenance
- NH OSP/NFIP Program
- NH OSP Coastal Program
- NH DRED Division of Forests and Lands
- NHDES Water Resources Division – Dam Safety Program
- NHDES Wetlands Program
- NHDES Shoreline Protection

APPENDIX D: MINUTES AND ATTENDANCE SHEETS

Frankestown Hazard Mitigation Committee Meeting

AGENDA: Meeting # 1

September 12th, 2019

Frankestown Fire Dept.

250 2nd New Hampshire Turnpike South,
Frankestown, NH 03043

1. Introductions

- a. Elect Chair & Minute taker
- b. Plan requirements, Time Match, Who's Missing?

2. Overview of the Hazard Mitigation Planning Process

- a. Review of materials
- b. Public Involvement and Outreach
- c. Purpose and benefits of Hazard Mitigation Plans
- d. Review and Adopt 2018 State Hazard Mitigation Goals (attached)

3. Chapters II, III & IV: Development Trends and Past and Potential Hazards

- a. Identify new, existing and/or future development trends in Frankestown (Chapter II of 2014 plan)
- b. Review hazard identification and potential losses in Frankestown (Chapter III)
- c. Assessing Probability Severity and Risk (Chapter IV) exercise
- d. Update Past and Potential Hazards table in Chapter III (page 20)
 - i. Add any hazard events that have occurred *since last plan update*, add new hazard types from 2018 State Hazard Mitigation Plan with any past occurrences

4. Chapter V and VI: Critical Facilities and Existing Mitigation Strategies (If time)

- a. Update the Critical Facilities in Chapter V of existing plan
- b. Update existing Mitigation Strategies matrix

5. Next Meeting Schedule_____ and Adjournment

Frankestown Hazard Mitigation Committee Meeting
Minutes of Meeting
September 12, 2019

Members Present: EMD Kevin Holdredge, Deputy EMD Nicole Rogers, Fire Chief Larry Kullgren, Police Chief Mike Dowd, Building Inspector John Kendall, Deputy Fire Chief Dave Hanlon, Town Administrator Jamie A Pike, and Betsy Hardwick (representative to the Planning Board and Conservation Commission).

Others Present: Madelieine Dilonno and Monique Duchesne from the Southern NH Planning Commission (SNHPC) and Kayla Henderson, NH Homeland Security & Emergency Management (HSEM)

The meeting was called to order at 7:00pm.

The first order of business was to elect a Chairman and Minute Taker. By a voice vote, Kevin Holdredge was elected Chairman and Jamie Pike was elected Minute Taker.

Ms. Dilonno provided an overview of the Hazard Mitigation Plan update process and explained the 25% grant match through volunteers attending committee meetings.

The committee members completed a Probability, Severity, and Risk assessment and adopted the following matrix.

<u>NATURAL HAZARDS</u>	Human Impact	Property Impact	Business Impact	Probability
0-N/A 1- Low 2- Moderate 3- High	Probability of death or injury	Physical losses and damages	Interruption of Service	Likelihood this will occur in 25 years
Avalanche	1	1	1	1
Inland Flooding	2	2	2	3
Drought	1	1	1	3
Earthquake	1	1	1	1
Extreme Heat	2	1	1	3
Extreme Cold	2	2	1	3
High Wind Events	2	2	2	3
Infectious Disease	2	0	1	3
Landslide	1	1	1	1
Lightning	2	2	2	3
Severe Winter Weather	3	3	3	3

Solar Storms & Space Weather	0	0	1	1
Tropical and Post & Tropical Cyclones	1	1	2	3
Wildfire	2	2	1	3
Aging Infrastructure	1	2	2	3
Dam Failure	1	2	1	2
Hazardous Materials	1	1	1	2
Known and Emerging Contaminants	1	1	1	1
Long-term Utility Outage	1	1	1	1

<u>Human-caused Hazards</u>	Human Impact	Property Impact	Business Impact	Probability
0-N/A 1- Low 2- Moderate 3- High	Probability of death or injury	Physical losses and damages	Interruption of Service	Likelihood this will occur in 5 years
Cyber Event	1	1	2	2
Mass Casualty Incident	3	1	1	3
Terrorism/Violence	2	2	2	2
Transport Accident (Aviation, Rail, Tractor Trailer, etc.)	1	1	1	1

The Committee reviewed the goals of the 2014 Hazard Mitigation Plan. It was decided to adopt the current State of NH goals as follows:

1. Minimize loss and disruption of human life, property, the environment, and the economy due to natural, technological, and human-caused hazards through a coordinated and collaborative effort between federal, state, and local authorities to implement appropriate hazard mitigation measures.
2. Enhance protection of the general population, citizens, and guests of the Town of Franconia and the State of New Hampshire before, during, and after a hazard event through public education about disaster preparedness and resilience, and expanded awareness of the threats and hazards which face the Town and State;
3. Promote continued comprehensive hazard mitigation planning at the State and local levels to identify, introduce, and implement cost effective hazard mitigation measures.

4. Address the challenges posed by climate change as they pertain to increasing risk and impacts of the hazards identified within this plan; and
5. Strengthen Continuity of Operations and Continuity of Government across the State and local levels to ensure continuation of essential services.

The Committee reviewed the actions section regarding the National Flood Insurance Program (NFIP) and recognized a revision and update is required.

The Committee reviewed the past hazards table and found the following items to add

1. Drought – Statewide 2016
2. Lightning Strike – Old Meeting House
3. Microburst - 2016/17?

Other items to be added as appropriate.

Reviewed the “Dams” section of the 2014 Plan and determined that ownership needs to be updated.

And it was decided to work with the Road Agent regarding the identification of significant beaver dams.

The next meeting is scheduled for October 24th at 7pm at the Frankestown Fire Department.

Being no further business, the meeting was adjourned at 8:20pm.

Respectfully Submitted,

Jamie A Pike

Meeting 1: September 12th, 2019 Attendance	
Name	Title
Kevin Holdredge	Emergency Management Director
Nicole Rogers	Deputy Emergency Management Director
John Kendall	Building Inspector
Larry Kullgren	Fire Chief
David Hanlon	Deputy Fire Chief
Betsy Hardwick	Conservation Commission
Jamie Pike	Town Administrator
Mike Dowd	Chief of Police
Kayla Henderson	NH Homeland Security & Emergency Management
Madeleine Dilonno	Southern NH Planning Commission
Monique Duchesne	Southern NH Planning Commission

Frankestown Hazard Mitigation Committee Meeting

AGENDA: Meeting # 2

October 24th, 2019

Frankestown Fire Dept.

250 2nd New Hampshire Turnpike South,
Frankestown, NH 03043

- 1. Review Chapter IV: Probability, Severity & Risk Table from Meeting 1**
- 2. Chapter V: Critical Facilities**
 - a. Review and update critical facilities chart in 2014 plan
- 3. Chapters VI: Existing Mitigation Strategies**
 - a. Review and update existing mitigation strategies from 2014 plan as needed
- 4. Chapters VII and VIII: Proposed Mitigation Strategies, STAPLEE and Action Plan**
 - a. Review 2014 Action Plan and determine status of existing action items
 - b. Brainstorm action items for natural hazards identified in chapter III utilizing Prevention, Property Protection, Structural Projects, Emergency Services and Public Education matrix (p. 37)
 - c. Rank new action items using STAPLEE Ranking Matrix
 - d. For each action item, identify corresponding leadership, timeframe and estimated cost and funding source
- 5. Next Meeting Schedule_____ and Adjournment**

Frankestown Hazard Mitigation Committee

Minutes of Meeting

October 24, 2019

Members Present: EMD Kevin Holdredge, Deputy EMD Nicole Rogers, Fire Chief Larry Kullgren, Police Chief Mike Dowd, Building Inspector John Kendall, Deputy Fire Chief Dave Hanlon, Town Administrator Jamie A Pike, Fire Fighter Jason St. Cyr, and Betsy Hardwick (representative to the Planning Board and Conservation Commission.)

Others Present: Madeleine Dilonno and Monique Duchesne from the Southern NH Planning Commission (SNHPC) and Kayla Henderson, NH Homeland Security and Emergency Management (HSEM)

The meeting was called to order at 7:00pm.

The Committee reviewed the Probability, Severity & Risk table from meeting 1.

The Committee reviewed and updated Chapter V: Critical Facilities.

The Committee reviewed and updated the existing mitigation strategies. It was recommended that the Town's floodplain and storm water management ordinances be added to the plan. It was also recommended to update the road maintenance plans.

Various mitigation action items were discussed.

- Installation of new dry hydrants at new bridge locations – 3 since 2009
- Using the culvert prioritization model to mitigate impacts of inland flooding
- Develop plan for continuity of government as related to cyber attacks
 - Recommended off site backups for Town servers
- Mass casualty events
 - Labor Day and events at the ski area were discussed as potential targets
 - Cross department training needed.
- Drought
 - Village Water Plan
 - Public Education
- Severe Winter Weather
 - Take notice of flat roofs – Transfer Station and Horse Sheds
- Extreme Heat
 - Use library as cooling station
 - Maintain a “welfare check” list
 - Improve public outreach/notification (Electronic Signs)
- High wind
 - Work with utilities for tree trimming etc

The meeting was adjourned at 8:30pm.

Respectfully submitted,

Jamie A Pike

Meeting 2: October 24th, 2019 Attendance	
Name	Title
Kevin Holdredge	Emergency Management Director
Nicole Rogers	Deputy Emergency Management Director
John Kendall	Building Inspector
Larry Kullgren	Fire Chief
David Hanlon	Deputy Fire Chief
Betsy Hardwick	Conservation Commission
Jamie Pike	Town Administrator
Mike Dowd	Chief of Police
Kayla Henderson	NH Homeland Security & Emergency Management
Madeleine Dilonno	Southern NH Planning Commission

Frankestown Hazard Mitigation Committee Meeting

AGENDA: Meeting # 3

December 2nd, 2019

Frankestown Fire Dept.

250 2nd New Hampshire Turnpike South,
Frankestown, NH 03043

1. Review and edit final documents:

- a. Critical Facilities
- b. Existing mitigation strategies
- c. Status of 2014 mitigation actions and new items
- d. 2019 mitigation action plan
- e. 2019 STAPLEE

2. Maps

3. Appendices

4. Next steps and Timeline

- a. SNHPC staff to edit final plan and touch base with committee members
- b. Final review by Frankestown hazard mitigation committee
- c. Adoption by Board of Selectmen
- d. FEMA review and approval

Frankestown Hazard Mitigation Committee
Minutes of Meeting
Tuesday, December 10, 2019

Members Present: EMD Kevin Holdredge, Fire Chief Larry Kullgren, Town Administrator Jamie A Pike, and Betsy Hardwick (representative to the Planning Board and Conservation Commission.)

Others Present: Madeleine Dilonno from the Southern NH Planning Commission (SNHPC) and Liz Gilboy NH Homeland Security and Emergency Management (HSEM)

The meeting was called to order at 7:00pm.

The Committee reviewed the work completed at the last meeting. Minor changes were made. Ms. Hardwick requested a model Storm Drain Maintenance System Program from HSEM.

The Committee discussed what maps would be included.

- Dams
- Bridges
- Critical Facilities

Ms. Dilonno also stated she hopes to include the maps from the culvert risk assessment completed earlier by SNHPC.

Ms. Dilonno reviewed the timeline for the completion of the HazMit Plan. She hopes to return a draft to the committee in March or April for review. After which there will be a public comment period before review and final approval by the Board of Selectmen. Then it will be submitted to FEMA for review and approval.

The meeting was adjourned at 7:30pm.
Respectfully submitted,
Jamie A Pike

Meeting 3: December 10th, 2019 Attendance	
Name	Title
Kevin Holdredge	Emergency Management Director
Larry Kullgren	Fire Chief
Betsy Hardwick	Conservation Commission
Jamie Pike	Town Administrator
Elizabeth Gilby	NH Homeland Security & Emergency Management
Madeleine Dilonno	Southern NH Planning Commission

Meeting #4: September 16, 2020

The Frankestown Hazard Mitigation Committee met on September 16th, 2020 to review the final plan update and provide recommendations for revisions. In attendance were the following members:

- Town Administrator, Jamie Pike
- Emergency Management Director, Kevin Holdredge
- Assistant Emergency Management Director, Nicole Rogers
- Fire Chief, Larry Kullgren
- Building Inspector/Code Enforcement Officer, John Kendall
- Fire Rescue Captain, Celeste Lunetta
- Lieutenant Colm Rogers
- Deputy Fire Chief, Dave Hanlon

Appendix E. Documentation of Outreach for Planning Process

NewsCalendarOffice HoursUseful Links

Fracesttown Community Calendar

TodaySeptember 2019

PrintWeekMonthAgenda

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Sep 1 FIHS Labor Day - Town Common and 7pm Vespers at Ol	2 10am OPEN HOUSE	3	4	5 5:30pm Community 6:30pm Library Tru 6:30pm Library Tru	6 10am Library Cross 3pm Treasure Hunt 4pm Fracesttown C	7
8	9 5:30pm Selectmen	10 7pm Waste D	11	12 Hazard Mitigation Committee	13	14 age Comi
15	16 5:30pm Selectmen	17 6:30pm Plann	18	19	20	21 Shillings
22	23 5:30pm Selectmen	24	25	26	27	28
29	30 5:30pm Selectmen	1	2	3	4	5

When

Thu, September 12, 7:00pm – 7:30pm

Where

Fracesttown Fire Department, 250 2nd New Hampshire Turnpike S, Fracesttown, NH 03043, USA ([map](#))

Description

The Southern NH Planning Commission will be working with the Town of Fracesttown to update its Hazard Mitigation Plan as required by the Federal Emergency Management Agency (FEMA). A Hazard Mitigation Plan Update Committee must be established and host at least three public meetings to collaborate on the updated plan.

Our first scheduled meeting is Thursday September 12th at 7pm. We will be meeting at the Fracesttown Fire Department (250 2nd New Hampshire Turnpike S, Fracesttown, NH 03043).

[more details»](#) [copy to my calendar»](#)

Events shown in time zone: Eastern Time - New York

Calendar

Library CalendarPublic Meeting CalendarTown Hall Calendar

Fracesttown Town Website

Nashua/Manchester Stormwater Coalition

September 12, 2019 - Nashua/Manchester Stormwater Coalition Meeting - 1:00 PM (*Nashua Regional Planning Commission office, 30 Temple St., Nashua*)

October 10, 2019 - Nashua/Manchester Stormwater Coalition Meeting- 1:00 PM (*Nashua Regional Planning Commission office, 30 Temple St., Nashua*)

For more information, please contact
Zachary Swick at 669-4664.

Frankestown Hazard Mitigation Plan Committee Meeting

The Southern NH Planning Commission will be working with the Town of Frankestown to update its Hazard Mitigation Plan as required by the Federal Emergency Management Agency (FEMA). A Hazard Mitigation Plan Update Committee must be established and host at least three public meetings to collaborate on the updated plan. The first meeting will be:

September 12, 2019 - Frankestown Hazard Mitigation Plan Committee Meeting- 7:00 PM (*Frankestown Fire Dept., 250 2nd NH Turnpike South*)

For more information, please contact
Madeleine DiIonno at 669-4664.

Public Hearings on Intermodal Transportation (GACIT)

Governor's Advisory Commission on Intermodal Transportation Hearings Public Hearings for 2021 - 2030 Ten Year Plan

- September 12, 2019 - GACIT Hearing - 7:00 PM (*Town Office Council Chambers, Moosehill Rm., 268B Mammoth Rd., Londonderry*)
- October 17, 2019 - GACIT Hearing- 7:00 PM (*Bedford Cable TV Meeting Rm., 10 Meetinghouse Rd.*)
- October 23, 2019 - GACIT Hearing- 7:00 PM (*Manchester Community College Auditorium, 1066 Front St.*)

Please note these are the hearings scheduled for the SNHPC Region. For

SNHPC "Media Blast"

Frankestown Hazard Mitigation Plan Committee

October 24, 2019 - Frankestown Hazmit Plan meeting - 7:00 PM (*Frankestown Fire Dept., 250 2nd NH Turnpike South*)

The Southern NH Planning Commission is working with the Town of Frankestown to update its Hazard Mitigation Plan as required by the Federal Emergency Management Agency (FEMA).

A Hazard Mitigation Plan Update Committee has been established and this is the second of three public meetings to collaborate on the updated plan.

**For more information, please contact
Madeleine DiIunno at 669-4664.**

SNHPC Website and Media Blast

Frankestown Hazard Mitigation Update Committee

December 3, 2019 -Frankestown Hazmit Plan meeting #3 - 7:00 PM (*Frankestown Fire Dept., 250 2nd NH Turnpike South*)


The Southern NH Planning Commission is working with the Town of Frankestown to update its Hazard Mitigation Plan as required by the Federal Emergency Management Agency (FEMA).

A Hazard Mitigation Plan Update Committee has been established and this is the third of three public meetings to collaborate on the updated plan.

**For more information, please contact
Madeleine DiIunno at 669-4664.**

SNHPC Website and Media Blast

Town of Francetown, New Hampshire
Hazard Mitigation Plan Update
2020



Working as the Regional Planning Commission and Metropolitan Planning Organization for the Southern New Hampshire Region.

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DATA AND GIS

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COMMUNITY AND ECONOMIC DEVELOPMENT

ENVIRONMENTAL PLANNING

SNHPC

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[Staff Directory](#)

Please browse the various areas of this web site and give us your feedback on how we can serve you better.

For copies of meeting minutes and other related documentation, please contact SNHPC.

Welcome to the official website of the Southern New Hampshire Planning Commission (SNHPC). The Commission was formed under the New Hampshire Statutes in 1966. SNHPC serves as the coordinating agency for the planning initiatives of fourteen communities in the region.

By taking a regional approach to address development concerns, we can attempt to craft effective and efficient solutions that will preserve the special character and valuable resources of the region.

FOR INFORMATION ON A COMMUNITY CLICK ON MAP



The Commission is also the Metropolitan Planning Organization (MPO) for the region. The MPO is an organization that conducts transportation planning in a cooperative, comprehensive, and continuous manner. The Federal Highway Acts stipulate that highway construction funds in urbanized areas can only be utilized by states with an MPO in place.

Working Together: 50 Years of the Southern New Hampshire Planning Commission Video

BECOMING AGE-FRIENDLY WITH SNHPC

MEETING NOTICE

MPO/Commission
August 27, 2019
11:30 AM, SNHPC Conference Room

Region 9 (Derry-Salem) RCC
September 3, 2019
(postponed from 8/26)
2:00 PM, Derry Municipal Center

SNHPC Annual Meeting
September 8, 2019
6:00 PM, Derryfield Restaurant

Francetown Hazard Mitigation Meeting
September 12, 2019
7:00 PM, Francetown Fire Dept.

LATEST NEWS

[Community Report \(8/1/19\)](#)

[Draft FY 2019-2022 SNHPC TIP Amendment #1](#)

[Community Report \(8/2/19\)](#)

[Pop-up Planning Community Application Form \(4/19/19\)](#)

[Pop-up Planning Materials Available to Borrow from SNHPC](#)

[Pop-up Planning Presentation to TAC \(4/18/19\)](#)

[Ten-Year Plan Presentation to TAC \(4/18/19\)](#)

[Manchester TOD Plan Information \(3/14/19\)](#)

[SNHPC Response to Questions for TOD Planning Services RFQ \(2/13/19\)](#)

[Notice of Public Comment Period for draft FY](#)

SNHPC Website Calendar

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APPENDIX E:

Southern New Hampshire Planning Commission 2020 Vulnerability Assessment: A Decision-Making Tool to Plan for a Changing Climate

EXECUTIVE SUMMARY

VULNERABILITY ASSESSMENT ACTIVITY

In September 2018, Southern New Hampshire Planning Commission (SNHPC) set out to analyze the risks to the road network associated with extreme weather within the SNHPC region. Historically, the most common and destructive type of risk to the region is inland flooding. Inland flooding is typically caused by heavy rainfall events. Over time, heavy rainfall events have increased in frequency. Today, inland flooding continues to threaten damage to the region's road network.

This vulnerability assessment explores the risk posed to ***culverts and small bridges, which are referred to as “stream crossings”*** throughout the report. Vulnerability assessment activity included engagement of road agents and public works staff to identify risk factors and to consider potential adaptation and mitigation options.

In summary the vulnerability assessment project encompassed the following tasks:

- *Stakeholder outreach and engagement*
- *Empirical climate and asset data collection*
- *Scoring and prioritization of risk*
- *Identification of high-priority stream crossings*
- *Identification of possible impacts at crossings*
- *Adaptation and mitigation recommendation*

SNHPC staff and collaborators conducted these tasks with an intent to provide communities and regional agencies with a decision-making tool that can assist in selecting adaptation and mitigation strategies for stream crossings. The assessment used available data and resources to provide an online [Stream Crossing GIS Map](#) for the region. Communities can use this map to share information, increase coordination around emergency events, and consider their reliance on the road network.

As part of the process of understanding vulnerability issues, SNHPC staff sought guidance from staff at New Hampshire Geological Survey (NHGS) within New Hampshire Department of Environmental Services (NHDES). Communication identified inter-departmental coordination opportunities. NHGS provided direction and encouraged SNHPC staff to contribute to the statewide analysis of stream crossings already underway. NHGS staff also provided SNHPC with direction on gathering data from the [Statewide Stream Crossing Map](#) managed by the UNH Technology Transfer (T2) in the Statewide Asset Data Exchange System (SADES). Input from NHGS helped focus the work of the vulnerability assessment on improving local knowledge around the concepts of [hydraulic vulnerability](#), [geomorphic compatibility](#), and [flooding impacts](#) at stream crossings. This collaboration is reflected in the regional and local prioritization of stream crossings and through the documentation of high-priority stream crossings found in [Appendix E](#) of this report.

Observations of trends in weather patterns and a summary of projected climate change over the remainder of this century is also included in this report. The climate data in this report was sourced from [National Oceanic and Atmospheric Administration's National Centers For Environmental Information](#), Cornell University via [Precip.net](#), and the University of New Hampshire [Sustainability Institute](#). The sourced climate data utilized two commonly referenced climate scenarios (high carbon emissions and low carbon emissions) from the Global Circulation Model. The climate scenarios project a range of possible climate outcomes over the remainder of the century. The [Climate Projections](#) section of the report highlights the dramatic changes in intensity and frequency of major rainfall events Southern New Hampshire can anticipate for the timespan between year 2020 and year 2099.

VULNERABILITY ASSESSMENT SCALE AND OUTCOMES

Municipalities in the region have undertaken various levels of planning to address and identify vulnerability of high priority stream crossings. Yet, local asset managers still expressed a desire to adopt a broader scale assessment methodology into their decision-making, their existing maintenance activities, and as a resource to supplement documentation for stream crossing capital investment requests. The result was the creation of a methodology for prioritization of stream crossings utilizing existing data and input from municipal staff.

Details about the criterion for prioritization are found in the [Stream Crossing Prioritization](#) section of this report. Prioritization results were documented both region-wide and individually for each municipality. Statistical data, prioritization results, and high-priority stream crossings for each municipality are in [Appendix E: Scoring Summary and Detail Sheets](#) at the end of the report.

The work of this vulnerability assessment increased coordination and communication among relevant agencies. Assessment activities sought to build new opportunities for coordination of state and local agencies in anticipation of future emergency events. The work also considered impacts of increased frequency and intensity of precipitation on the function of the road network. By working together to address infrastructure vulnerabilities, the region can improve the ability to mitigate the occurrence of stream crossing failures brought about by more intense rainfall events.

RECOMMENDATIONS FOR ADAPTATION AND MITIGATION

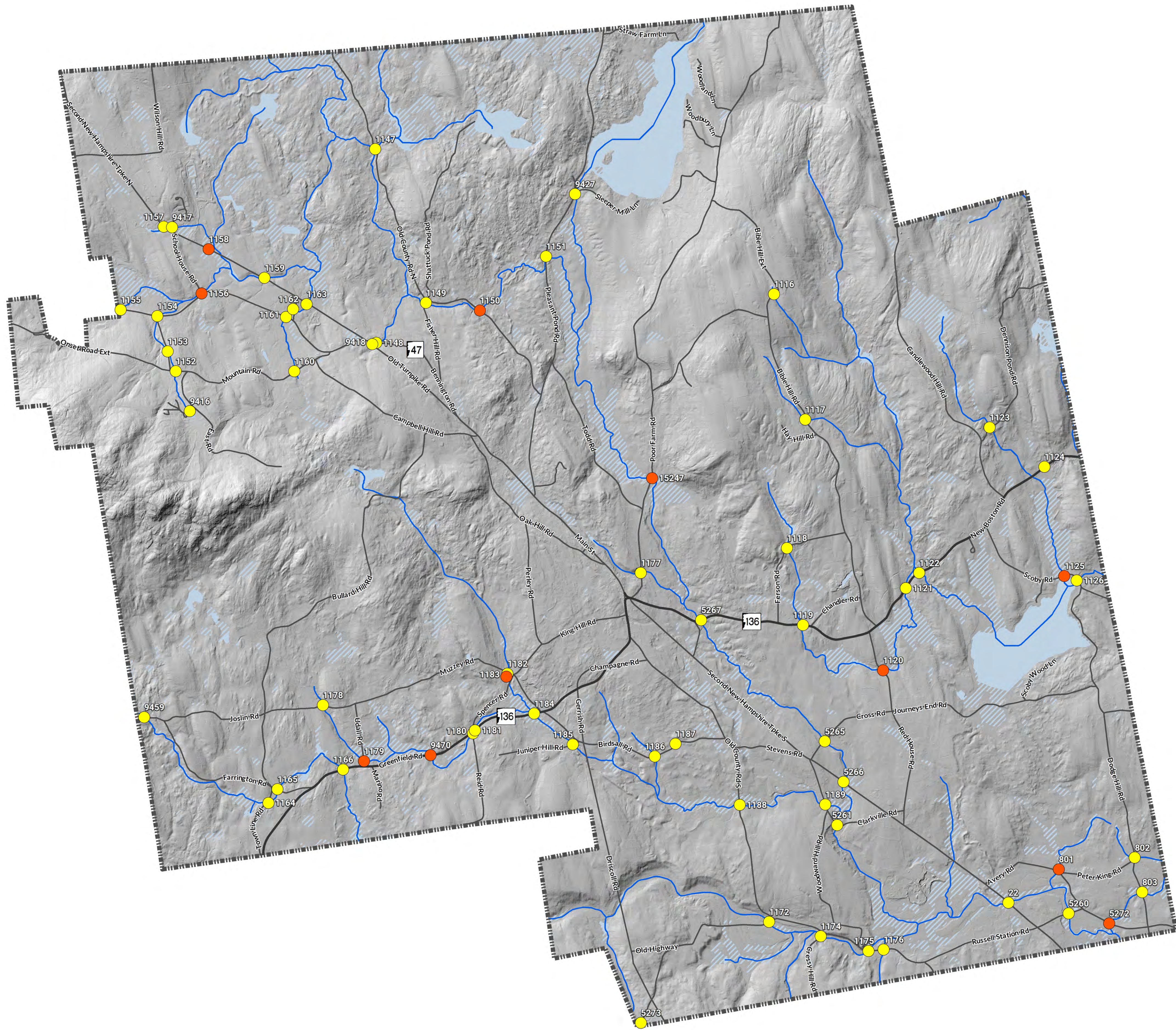
Literature review, asset and climate data research, local interviews, and the findings of the prioritization model provide a well-rounded body of research and analysis including a foundation for making recommendations for action.

Recommendations for action to mitigate and adapt to known vulnerabilities include:

- *Improve access and function of stream crossing inventory maps and data.*
- *Increase coordination between NHDOT and local public works departments.*
- *Revisit local, regional, and state funding mechanisms to prioritize at-risk stream crossings.*
- *Include vulnerability assessment information in municipal Hazard Mitigation plans.*
- *Implement mitigation efforts before climate change is projected to accelerate.*

At the request of the region's municipalities, SNHPC developed an [online map of prioritized stream crossings](#) including a filter function to limit data by municipality, crossing ownership (state, local, private, or unknown), and stream crossing size (upstream horizontal open width measured in feet). The online map includes a video tutorial to illustrate the filter functions and how to switch between the ownership and prioritization layers. The online inventory and scoring of stream crossings were made available to communities and the public at-large in the spring of 2020. SNHPC also conducted field assessments to fill in gaps in data for high priority stream crossings. SNHPC will continue field assessments in support of NHGS during the summer of 2020 and in future years to improve the completeness of the region's stream crossing inventory in SADES.

To build support for adaptation and mitigation across different levels of government, SNHPC will work with stakeholders in developing outreach activities. It is the Commission's goal to ensure community leaders across the region are aware of the risks posed to public roads and stream crossings by increased frequency and intensity of rainfall events. With the resources presented in this report, SNHPC will illustrate available data on the existing conditions of stream crossings, the risks associated with those crossings, and criteria used to determine the level of risk posed to the road network. Public awareness activities will engage local stakeholders and state partners in efforts to improve the resiliency of the region's road network.



Stream Crossings: Francestown

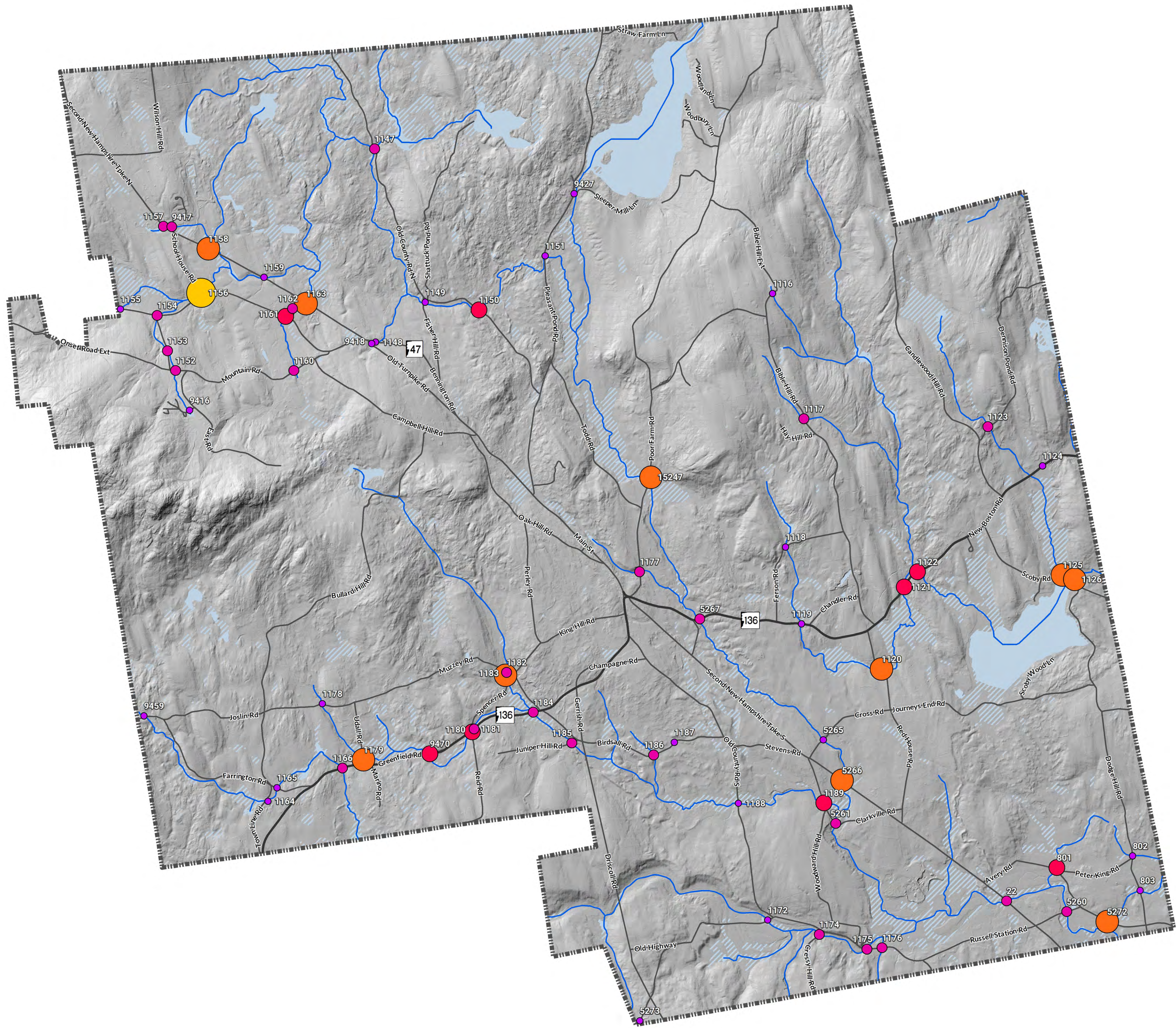
Created by SNHPC, 2020. Sources: NH Department of Environmental Services; NH Department of Transportation; Town of Francestown; University of New Hampshire; US Census Bureau; US Fish and Wildlife Service; US Geological Survey.

Identified by
asset
managers



0 0.25 0.5 1 1.5 2 Miles

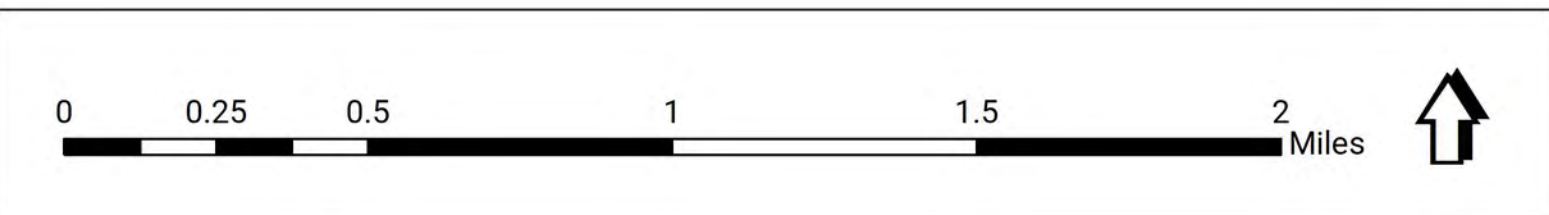




Scored Stream Crossings: Francestown

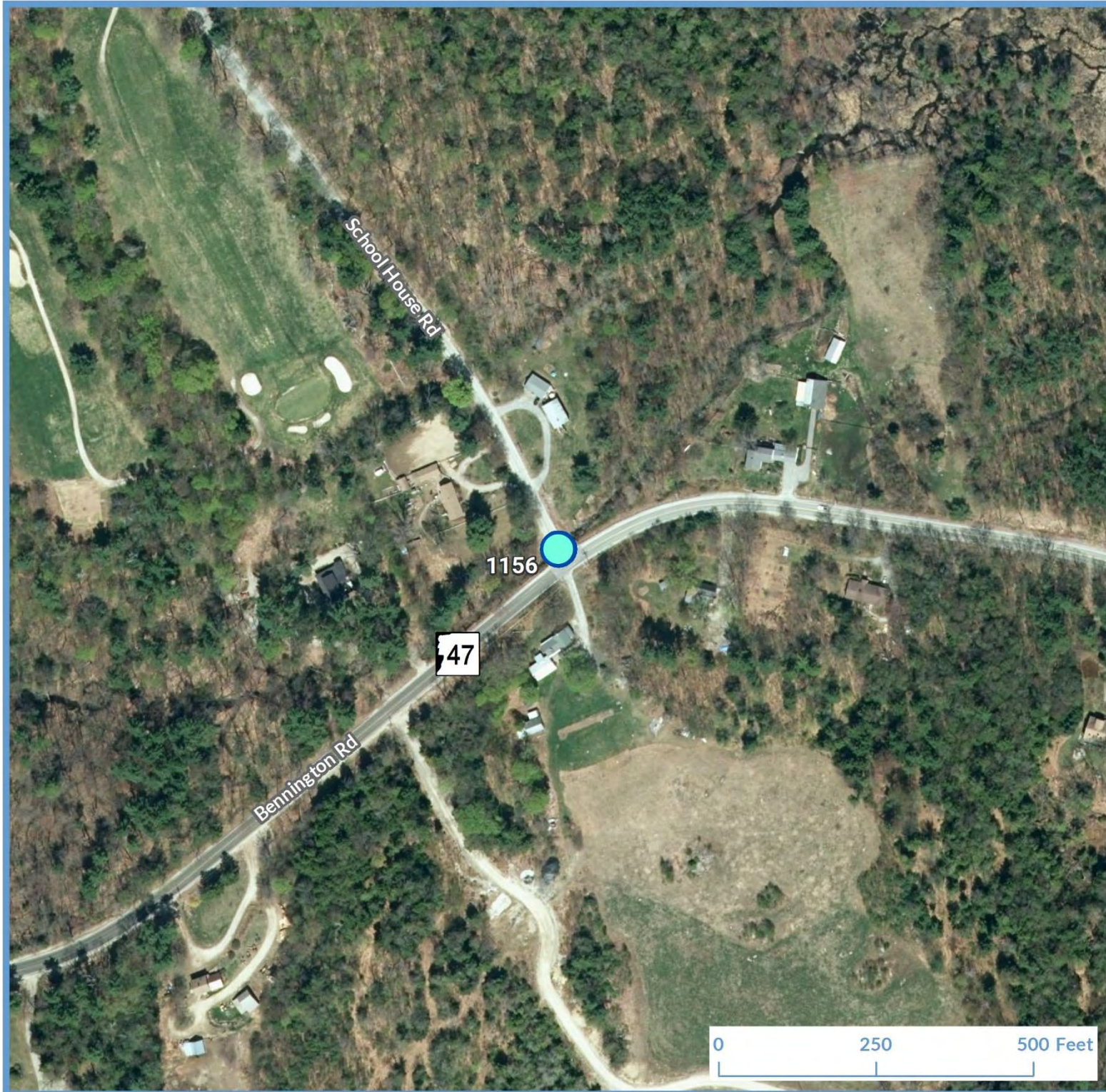
Created by SNHPC, 2020. Sources: NH Department of Environmental Services; NH Department of Transportation; Town of Francestown; University of New Hampshire; US Census Bureau; US Fish and Wildlife Service; US Geological Survey.

- | | |
|-----------|-----------|
| ● 0 - 5 | ● 16 - 21 |
| ● 6 - 10 | ● 22 - 28 |
| ● 11 - 15 | |




SADES ID	Annual Avg. Daily Trips (AADT)	AADT Score	Asset Mgr ID'd Crossing	Asset Mgr ID Score	History of Flood Hazard	Hazard Score	Flood Zone Category (FEMA)	Zone Score	Culvert Condition	Condition Score	10yr Hydraulic Vulnerability	Vuln. Score (10yr)	Culvert Material	Metal Score	Beaver Activity	Beaver Score	Total Score
1156	AADT<5,000	2	Yes	10	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	22
15247	AADT<1,000	0	Yes	10	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Metal	2	No	0	21
1158	AADT<1,000	0	Yes	10	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Metal	2	No	0	21
5272	AADT<1,000	0	Yes	10	No	0	100-Year Flood Zone	4	Good	0	Unknown	3	Metal	2	No	0	19
1120	AADT<1,000	0	Yes	10	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Metal	2	Yes	2	19
1183	AADT<1,000	0	Yes	10	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	18
1163	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Poor	10	Unknown	3	Not Metal	0	No	0	18
1179	AADT<1,000	0	Yes	10	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Metal	2	No	0	17
5266	AADT<5,000	2	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Unknown	3	Metal	2	No	0	16
1126	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Overtop	5	Metal	2	No	0	16
1125	AADT<1,000	0	Yes	10	No	0	100-Year Flood Zone	4	Good	0	Not Applicable	0	Metal	2	No	0	16
9470	AADT<5,000	2	Yes	10	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	15
1150	AADT<1,000	0	Yes	10	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	15
1180	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	Yes	2	14
1189	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Unknown	3	Metal	2	No	0	14
1161	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	12
1121	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	12
801	AADT<1,000	0	Yes	10	No	0	Minimal Hazard	0	Good	0	Not Applicable	0	Metal	2	No	0	12
1122	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Vulnerable	4	Not Metal	0	No	0	11
1181	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	10
1185	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	10
1147	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	10
1117	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	10
1166	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	Yes	2	9
5261	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	9
5260	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	9
1175	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	9
1174	AADT<1,000	0	No	0	Yes	5	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	9
22	AADT<5,000	2	No	0	No	0	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	Yes	2	8
9417	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1182	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1177	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1176	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1162	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1160	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1157	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1153	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1152	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1123	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	8
1184	AADT<5,000	2	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	7
1154	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	7
1186	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Metal	2	No	0	7
5267	AADT<5,000	2	No	0	No	0	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	6
9418	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	5

SADES ID	Annual Avg. Daily Trips (AADT)	AADT Score	Asset Mgr ID'd Crossing	Asset Mgr ID Score	History of Flood Hazard	Hazard Score	Flood Zone Category (FEMA)	Zone Score	Culvert Condition	Condition Score	10yr Hydraulic Vulnerability	Vuln. Score (10yr)	Culvert Material	Metal Score	Beaver Activity	Beaver Score	Total Score
1155	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	5
1148	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	5
1119	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	5
9416	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	5
1188	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	5
1187	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	5
1172	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	5
1165	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	5
1159	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	5
1151	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	5
1149	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	5
1118	AADT<1,000	0	No	0	Yes	5	Minimal Hazard	0	Good	0	Pass	0	Not Metal	0	No	0	5
802	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Metal	2	No	0	5
5265	AADT<1,000	0	No	0	No	0	100-Year Flood Zone	4	Good	0	Not Applicable	0	Not Metal	0	No	0	4
9459	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	3
9427	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	3
5273	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	3
1178	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	3
1164	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Unknown	3	Not Metal	0	No	0	3
1124	AADT<5,000	2	No	0	No	0	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	2
1116	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	0
803	AADT<1,000	0	No	0	No	0	Minimal Hazard	0	Good	0	Not Applicable	0	Not Metal	0	No	0	0




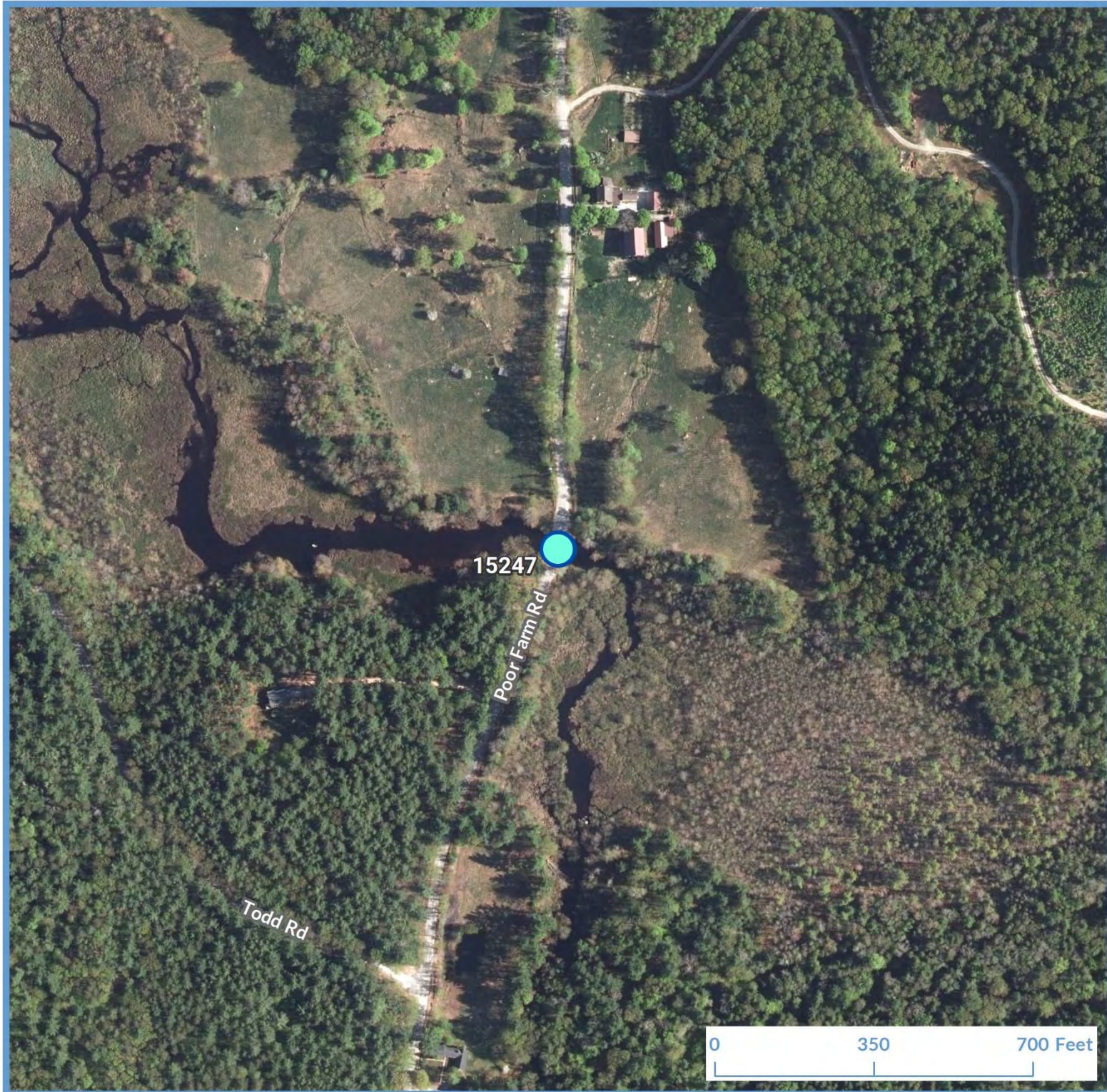
Created by SNHPC, 2020. Sources: NH Department of Environmental Services; NH Department of Transportation; University of New Hampshire.

Francestown, NH		Stream Crossing Detail Sheet			SADES ID 1156
Prioritization Score	22	Traffic Volume	<5,000	Crossing Type	Stream
 SNHPC Detail Sheet Created: January 17, 2020	Asset Manager ID'd	Yes	Road Name	School House Road	
	Flood Hazard ID'd	Yes	Stream Name	Dinsmore Brook	
	Flood Zone Category	Minimal Hazard	Structure Type	Steel Corrugated Round Culvert	
	Culvert Condition	Good	Crossing Width	5.00'	
	10-Yr Hydraulic Vuln.	Unknown	Open Height	No Data	
	Crossing Material	Metal	Obstruction	Wood	
	Beaver Activity	No	Assessment Date	05/23/2012	




Created by SNHPC, 2020. Sources: NH Department of Environmental Services; NH Department of Transportation; University of New Hampshire.

Francestown, NH		Stream Crossing Detail Sheet			SADES ID 1158
Prioritization Score	21	Traffic Volume	<1,000	Crossing Type	Wetland
 SNHPC Detail Sheet Created: January 17, 2020	Asset Manager ID'd	Yes	Road Name	2 nd NH Turnpike	
	Flood Hazard ID'd	Yes	Stream Name	Dinsmore Brook	
	Flood Zone Category	100-Yr Flood Zone	Structure Type	Aluminum Corr. Round Culvert	
	Culvert Condition	Good	Crossing Width	1.25'	
	10-Yr Hydraulic Vuln.	Not Applicable	Open Height	No Data	
	Crossing Material	Metal	Obstruction	None	
	Beaver Activity	No	Assessment Date	06/01/2012	



Created by SNHPC, 2020. Sources: NH Department of Environmental Services; NH Department of Transportation; University of New Hampshire.

Francestown, NH		Stream Crossing Detail Sheet			SADES ID 15247	
Prioritization Score	21	Traffic Volume	<1,000	Crossing Type	Wetland	
 SNHPC Detail Sheet Created: January 17, 2020	Asset Manager ID'd	Yes	Road Name	Poor Farm Road		
	Flood Hazard ID'd	Yes	Stream Name	No Data		
	Flood Zone Category	100-Yr Flood Zone	Structure Type	Steel Corrugated Round Culvert		
	Culvert Condition	Good	Crossing Width	12.50'		
	10-Yr Hydraulic Vuln.	Not Applicable	Open Height	8.50'		
	Crossing Material	Metal	Obstruction	None		
	Beaver Activity	No	Assessment Date	08/05/2019		

Prioritization Score Statistical Summary: Francestown

Traffic Volumes

Count	Totals
AADT>=30,000	0
AADT<30,000	0
AADT<20,000	0
AADT<10,000	0
AADT<5,000	18
AADT<1,000	48

TOTAL: 66

10-Yr Vulnerability

Category	Count
Overtop	1
Vulnerable	1
Unknown	41
Pass	1
Not Applicable	22

TOTAL: 66

Beaver Activity

Yes	4
No	62

TOTAL: 66

Total Crossings

Region	1522
Town	66

Flood Zone

Count	Totals
Floodway	0
100-Year Flood Zone	14
500-Year Flood Zone	0
Minimal Hazard	52

TOTAL: 66

Structure Material

Metal	26
Not Metal	40

TOTAL: 66

Flood Hazard

ID'd	39
Not ID'd	27

TOTAL: 66

Culvert Condition

Poor	1
Fair	0
Good	65
Unknown	0

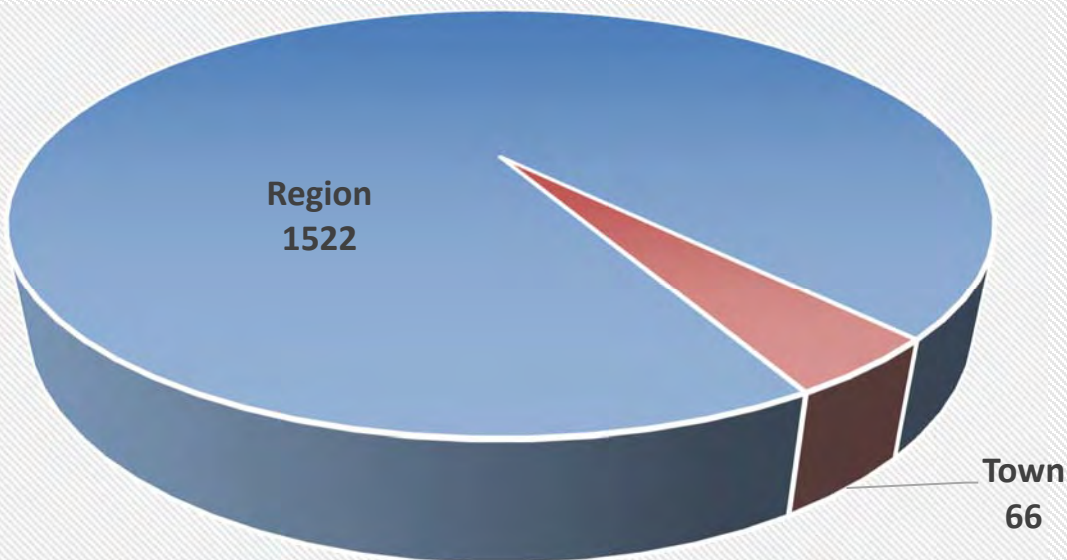
TOTAL: 66

Asset Manager

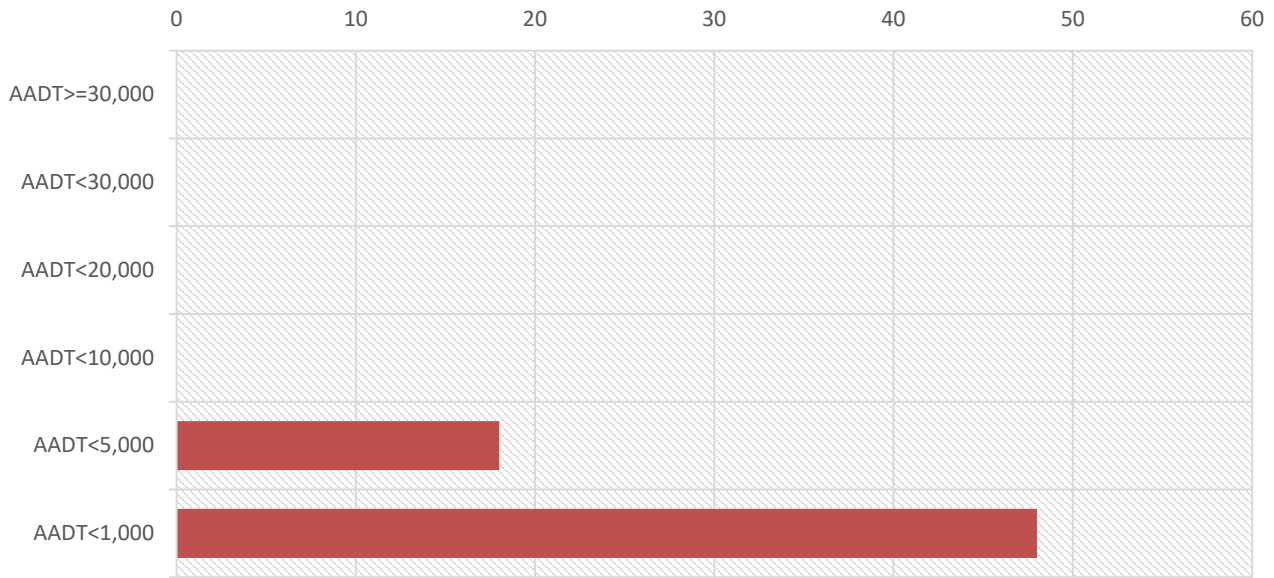
ID'd	11
Not ID'd	55

TOTAL: 66

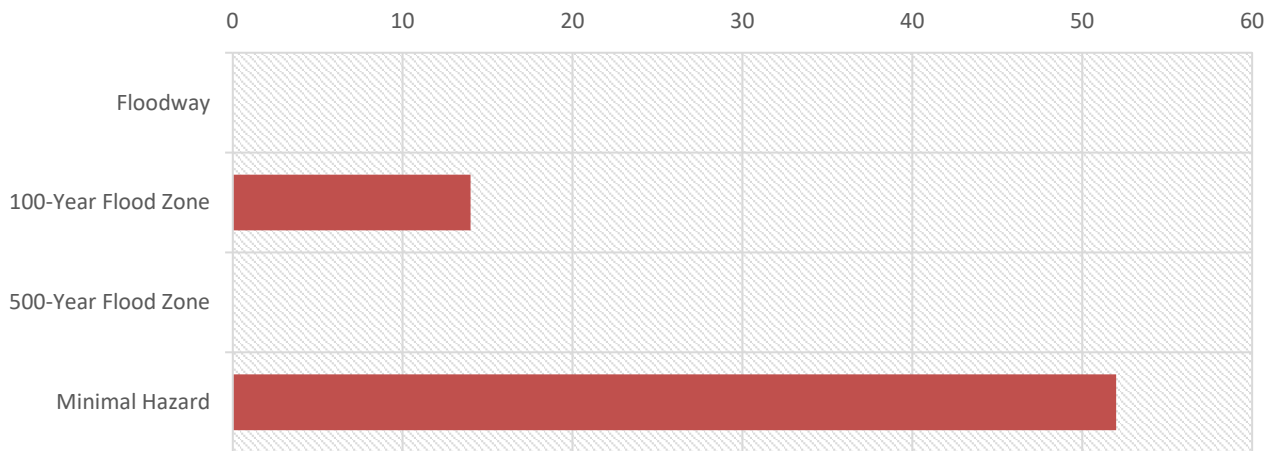
Total Crossings, Town and Region



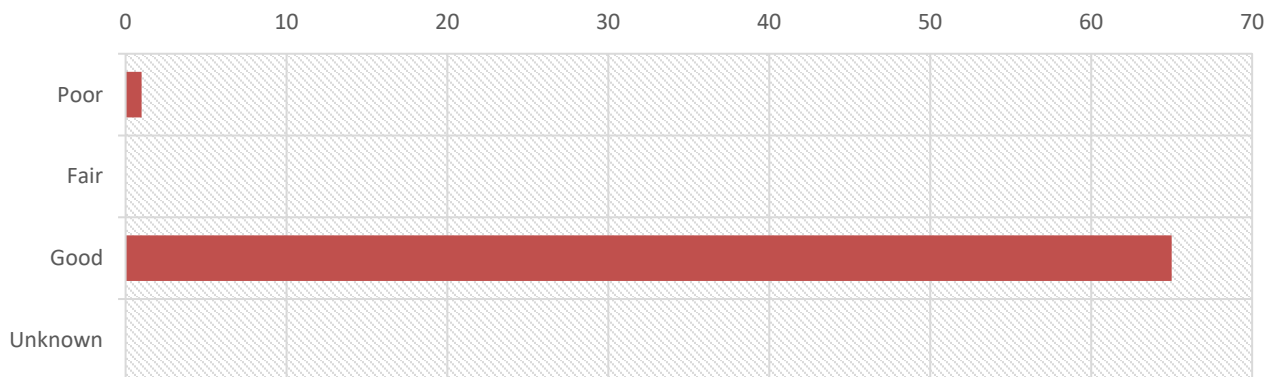
MUNI. COUNT BY TRAFFIC VOLUME CATEGORY



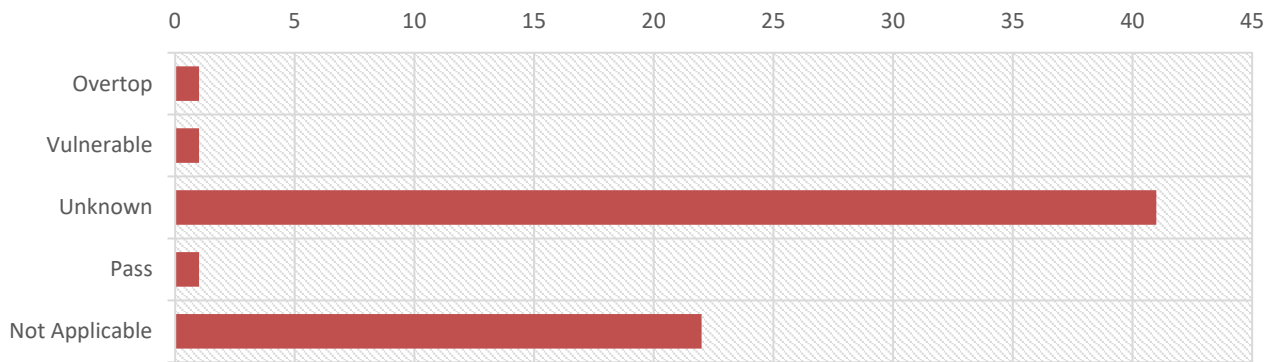
MUNI. COUNT BY FEMA FLOOD ZONE CATEGORY



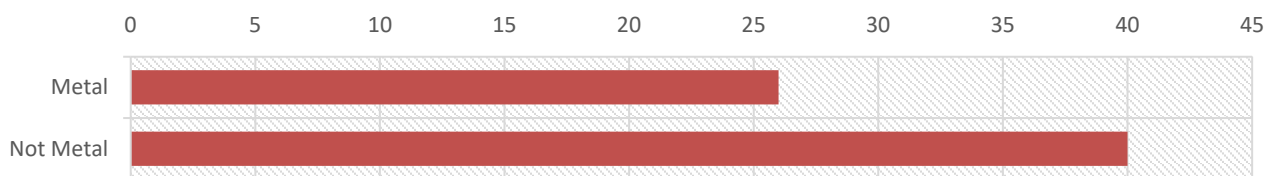
MUNI. COUNT BY STREAM CROSSING CONDITION



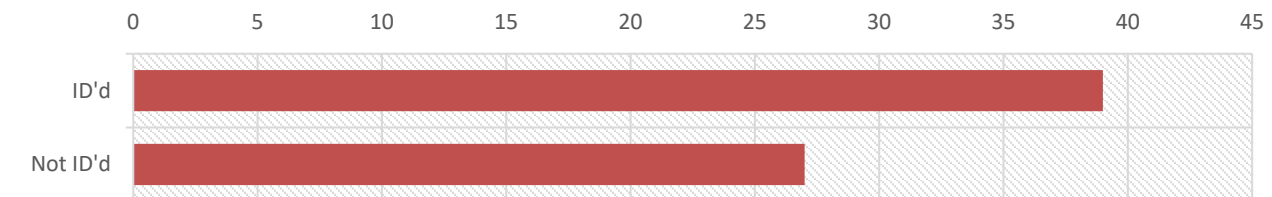
MUNI. COUNT BY 10-YR VULNERABILITY



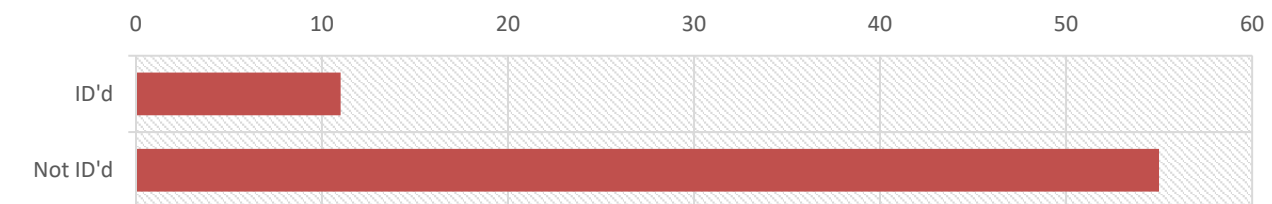
MUNI. COUNT BY STRUCTURE MATERIAL



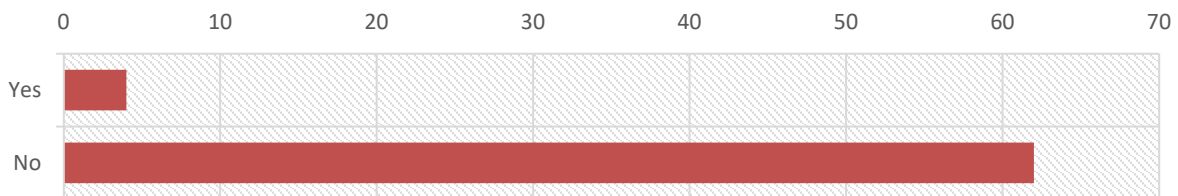
MUNI. COUNT BY IDENTIFIED FLOOD HAZARD HISTORY



MUNI. COUNT BY ASSET MANAGER IDENTIFICATION



TOTAL REGION COUNT BY BEAVER ACTIVITY



LOCAL ASSET MANAGER INPUT

Crossing ID	Town	Road Name	State Route	Stream Name	Manager Comment	Assessment Action
801	Francestown	Avery Rd		Intermittent (No Name)	Conditions concerns	Add to Hotlist
803	Francestown	Dodge Hill Rd		Intermittent (No Name)	Replaced in 2018	Notify Shane C. at DES
1117	Francestown	Bible Hill Rd		Whiting Brook	Replaced in 2018	Notify Shane C. at DES
1120	Francestown	Red House Rd		Perennial (No Name)	Culvert is failing, needs replacement	Add to Hotlist
1125	Francestown	Scoby Rd		Perennial (No Name)	Submerged; Condition and Replacement Concerns; Overtopping	Add to Hotlist
1150	Francestown	Old Country Rd		Collins Brook	Culvert in failed state; Temp Bridge in place; Town seeking NH DOT Bridge Aid funds	Add to Hotlist
1156	Francestown	School House Rd	X	Dinsmore Brook	Top priority for town; Recurring overtopping	Add to Hotlist
1158	Francestown	2nd NH Tpke N		Wetland (No Name)	Poor Culvert Condition poses risk	Add to Hotlist
1172	Francestown	Russell Station Rd		Rand Brook	Repairs made in 2018 to deck & rails	Notify Shane C. at DES
1177	Francestown	Poor Farm Road		Perennial (No Name)	Culvert new in 2007, TU wishes to replace now to increase AOP, Road Agent not motivated	No further action needed
1179	Francestown	Udall Rd	X	Perennial (No Name)	Culvert is failing, needs replacement	Add to Hotlist
1183	Francestown	Muzzey Rd		Perennial (No Name)	Nearby Dam is a point of interes with TU	Notify Shane C. at DES
1185	Francestown	Juniper Hill Rd		South Branch Piscataquog	Replaced through NH DOT Aid Program 2015	Notify Shane C. at DES
5260	Francestown	S New Boston Rd		South Branch Piscataquog	To be replaced in 2020; NH DOT Bridge Aid	Notify Shane C. at DES
5261	Francestown	Clarkville Rd		South Branch Piscataquog	Replaced through NH DOT Aid Program 2015	Notify Shane C. at DES
5272	Francestown	S New Boston Rd		Intermittent (No Name)	Conditions concerns	Add to Hotlist
9470	Francestown	Route 130	X	Perennial (No Name)	Culvert New	Updated Assessment Needed
999919	Francestown	Poor Farm Road		South Branch Piscataquog	ID's by Mgr; Culvert Located 0.2mi north of Todd Rd	Add to SADES

APPENDIX F: Maps

Francestown Hazard Mitigation Plan

Critical Facilities

Emergency Response Facilities and Services

- 1 Emergency Operations Center & Fire Station
- 2 Highway Department
- 3 Francestown Ball Fields (Helicopter Landing Site)
- 4 Town Offices
- 5 Town Hall
- 6 Police Station

Non-Emergency Response Facilities

- 7 Transfer Station

Facilities/Populations to Protect

- 8 Crotched Mountain Resort & Spa
- 9 Community Church of Francestown
- 10 Old Meeting House (Historic Building)
- 11 Post Office
- 12 George Holmes Bixby Memorial Library
- 13 Francestown Elementary School

Potential Resources

- 14 Francestown Sand & Gravel
- 15 Miller Construction

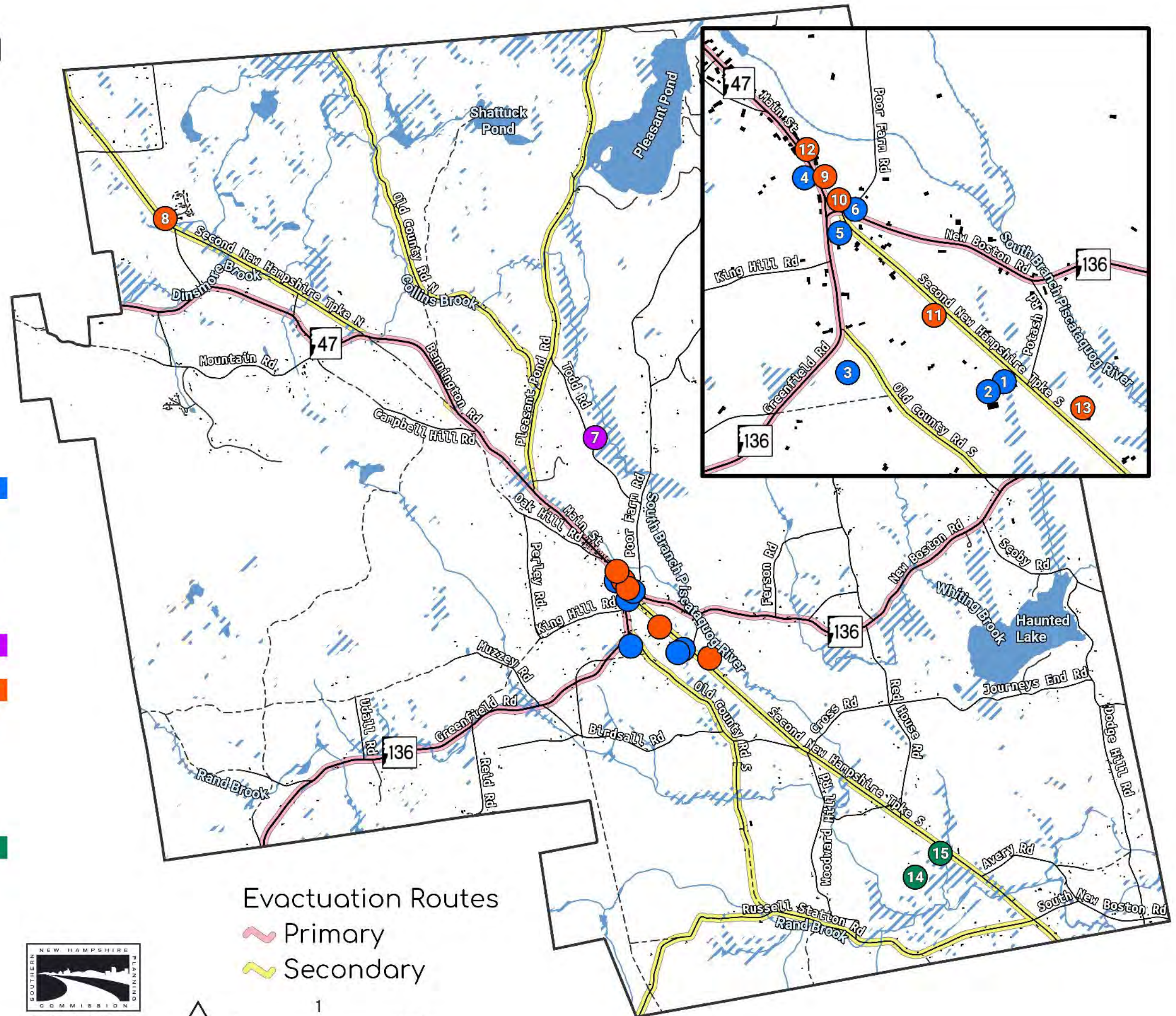
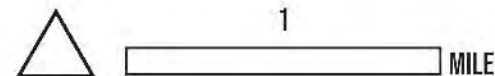
Created by the Southern New Hampshire Planning Commission, 2020. Sources: Google Maps; Microsoft; NH Department of Transportation; Town of Francestown; US Census Bureau; US Geological Survey; US Fish & Wildlife Service.



SNHPC

Evacuation Routes

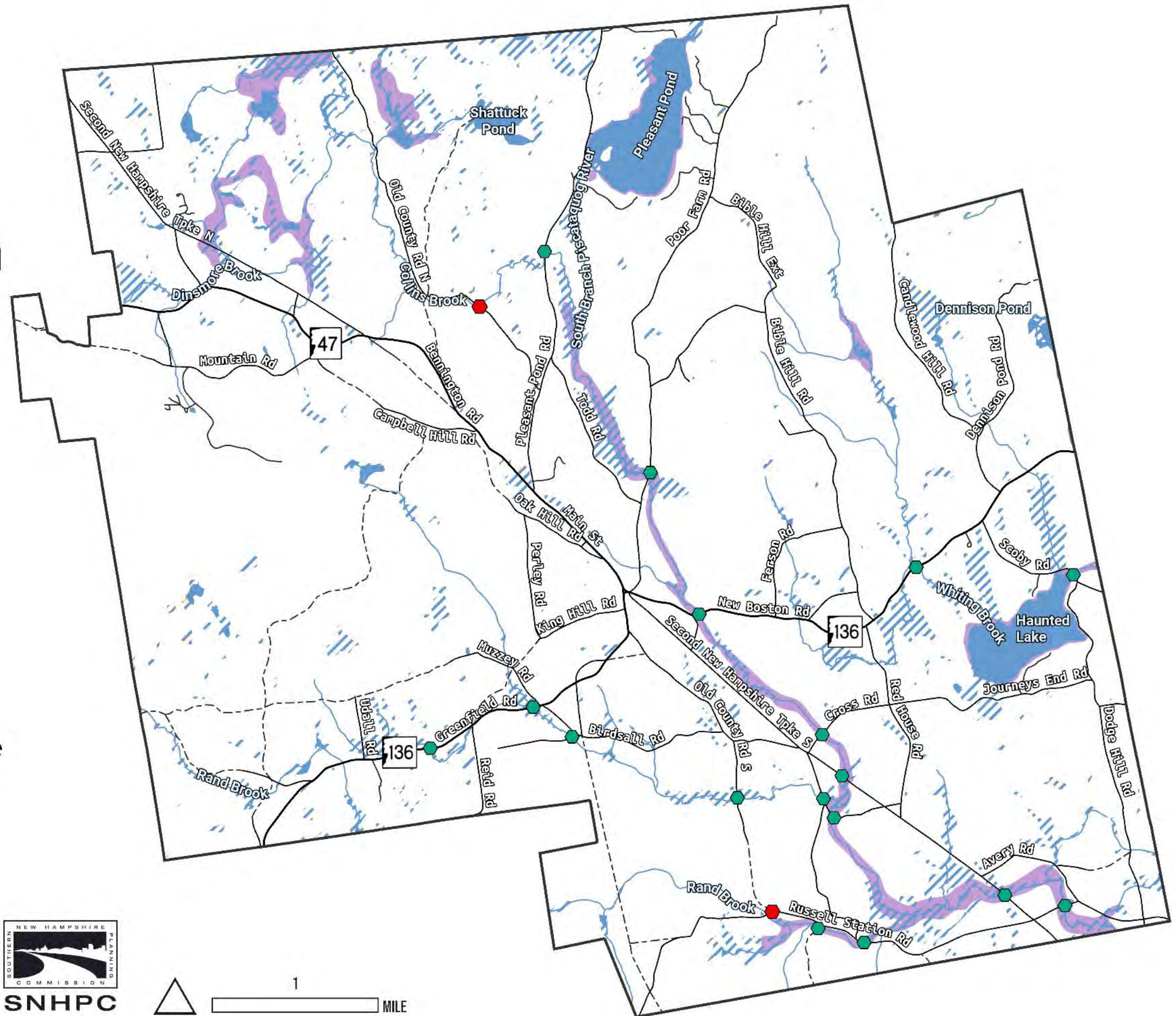
- Primary
- Secondary



Francestown Hazard Mitigation Plan

Bridges

- ◆ Municipal Redlist
- ◆ Not on the Redlist
- 1% Annual Chance Flood Zone



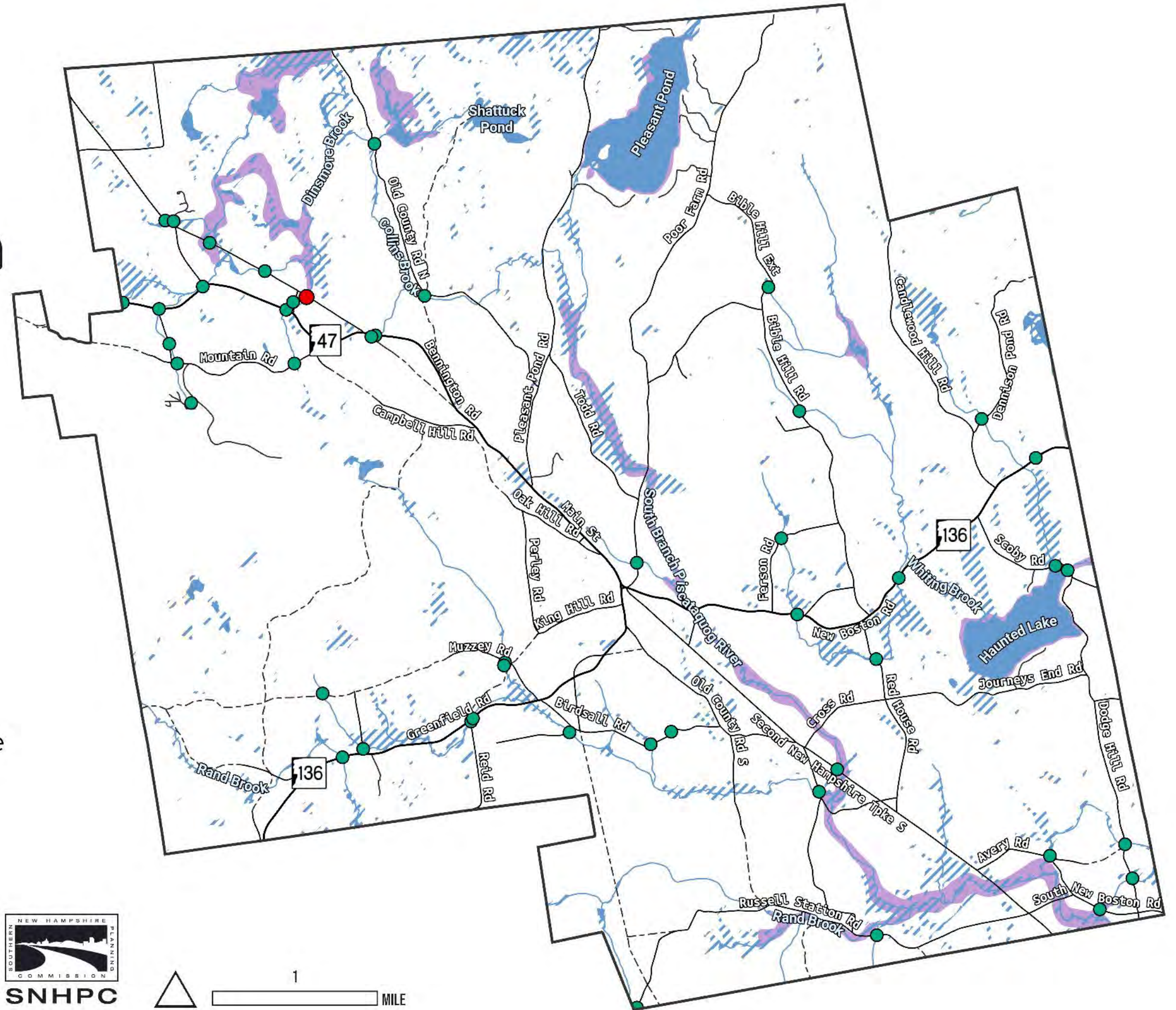
Created by the Southern New Hampshire Planning Commission, 2020. Sources: Federal Emergency Management Agency; NH Department of Transportation; Town of Francestown; US Census Bureau; US Geological Survey; US Fish & Wildlife Service.



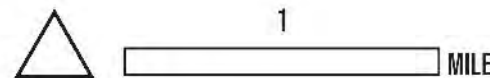
Fracestown Hazard Mitigation Plan

Culverts

- Poor Condition
- Good Condition
- 1% Annual Chance Flood Zone



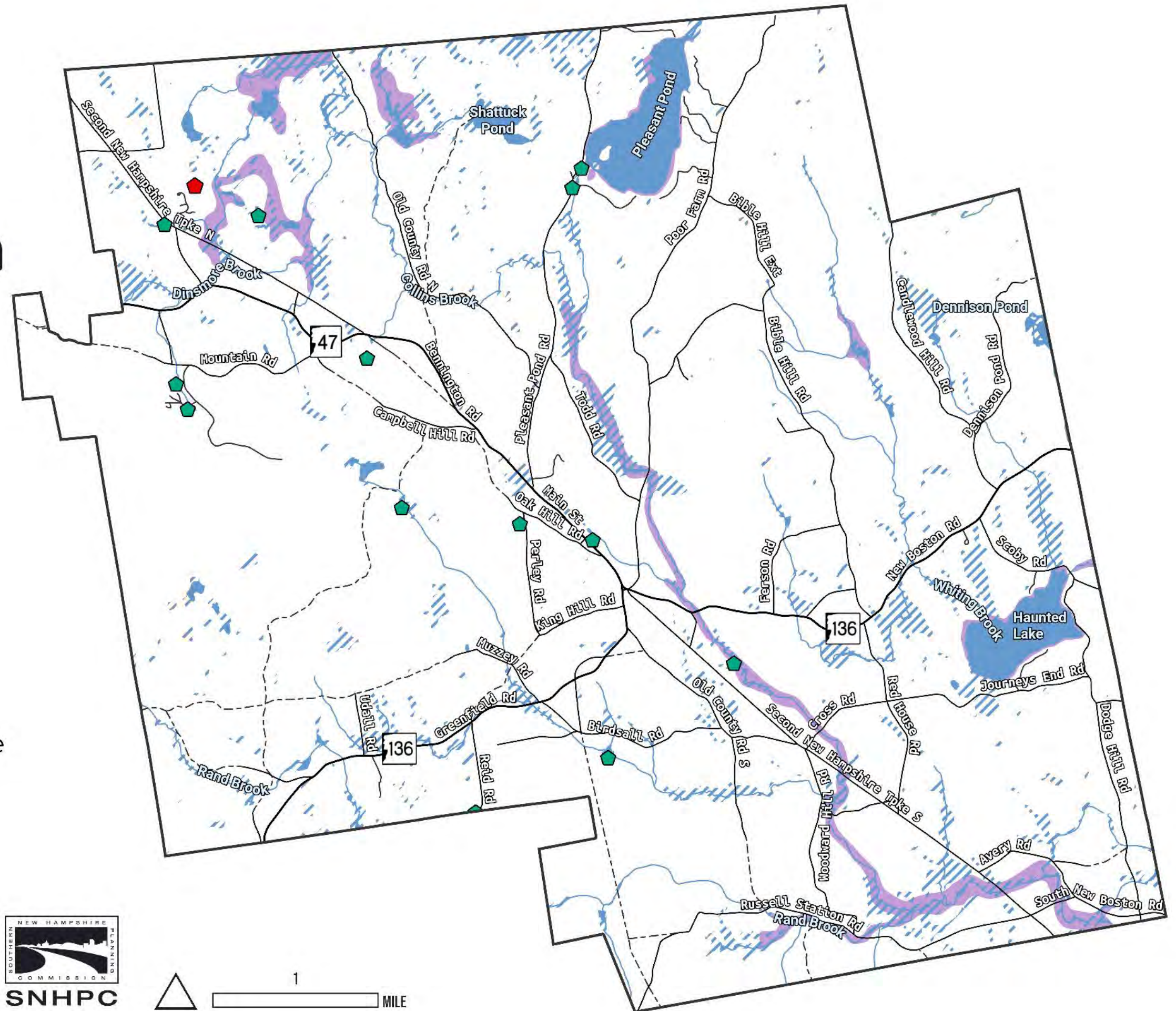
Created by the Southern New Hampshire Planning Commission, 2020. Sources: Federal Emergency Management Agency; NH Department of Environmental Services; NH Department of Transportation; US Census Bureau; US Geological Survey; US Fish & Wildlife Service.



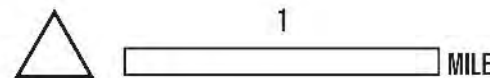
Francestown Hazard Mitigation Plan

Dams


- ◆ Significant Hazard
- ◆ Other Dams
- 1% Annual Chance Flood Zone

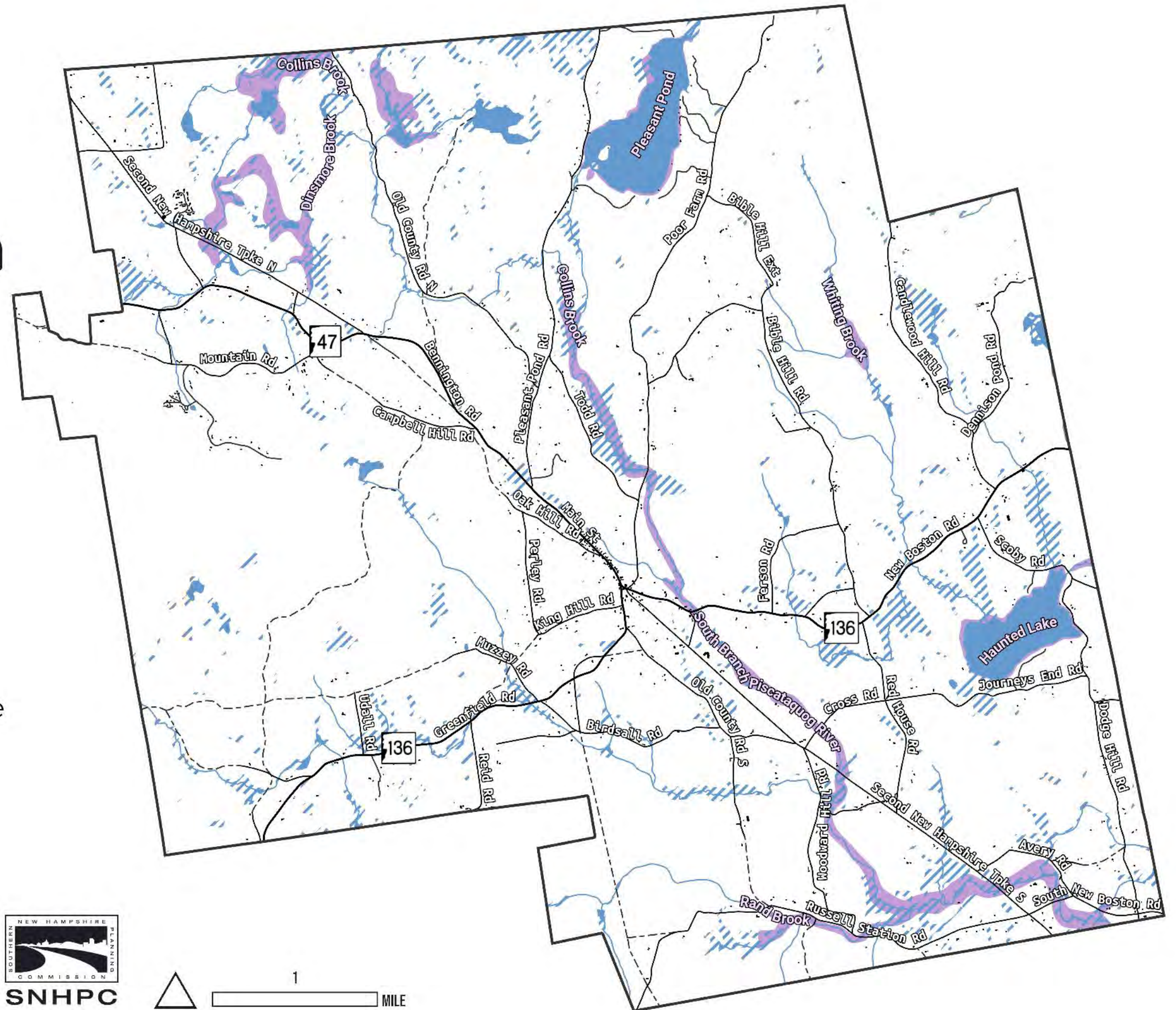


Created by the Southern New Hampshire Planning Commission, 2020. Sources: Federal Emergency Management Agency; NH Department of Environmental Services; NH Department of Transportation; US Census Bureau; US Geological Survey; US Fish & Wildlife Service.

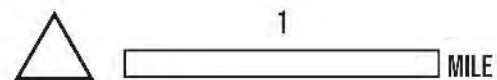


Francestown Hazard Mitigation Plan Flood Zones

 1% Annual Chance Flood Zone



Created by the Southern New Hampshire Planning Commission, 2020. Sources: Federal Emergency Management Agency; Microsoft; NH Department of Transportation; US Census Bureau.



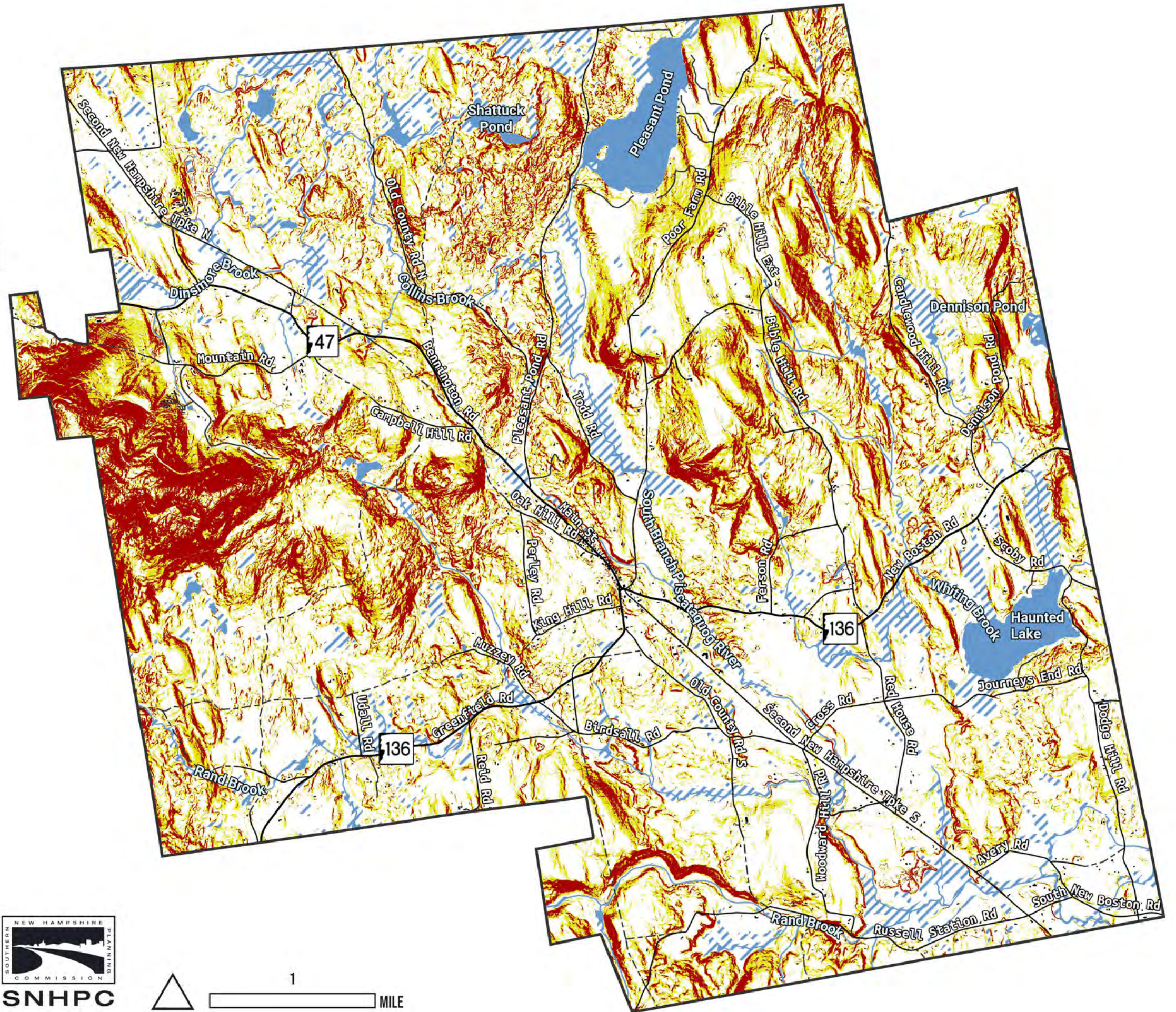
Fracestown Hazard Mitigation Plan

Steep Slopes

Rise over Run

15 to 25

25 or Greater



Created by the Southern New Hampshire Planning Commission, 2020. Sources: NH Department of Transportation; University of NH; US Census Bureau; US Geological Survey; US Fish & Wildlife Service.

